

Complementary and Alternative Therapy Program for Elderly Woman with Low Back Pain

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Abstract: Cupping therapy, aromatherapy and movement therapy are complementary and alternative therapy used in pain management especially low back pain among elderly women.

Aim: The aim of the study was to evaluate complementary and alternative therapy program for elderly woman with low back pain.

Design: A quasi-experimental design was used.

Setting: The study was conducted at the rheumatology and orthopedic outpatient clinic in May 15 Hospital, Helwan District, Cairo, Egypt.

Sampling: A purposive sample was used.

Sample size: 50 elderly women with low back pain.

Tool of data collection: Two tools were used, **Tool 1:** A structured designed interviewing questionnaire covering three parts: **Part 1:** Demographic characteristics of elderly women. **Part 2:** Past and current medical history of elderly woman. **Part 3:** Elderly women's knowledge about low back pain, cupping therapy and aromatherapy. **Tool 2:** Elderly women's practice to decrease low back pain.

Results: There was a significant improvement in elderly women's knowledge about low back pain, cupping therapy and aromatherapy at post program. Complementary and alternative therapy program had statistically significant improvement on elderly women's health status in posttest than pre. Also, after applying complementary and alternative therapy program there was statistically significant differences in elderly women's practices than pre.

Conclusion: Elderly women's health status, knowledge and practices improved post applying complementary and alternative therapy program than pre, with highly statistically significant differences.

Recommendations: Periodical follow-ups should be carried out to assess health status of elderly women's with low back pain and their knowledge and practices about low back pain.

Keywords: Complementary and alternative therapy (CAT), Low back pain, Elderly Women.

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I. Introduction

Complementary and Alternative Therapy (CAT) has gained in popularity worldwide in recent years. It includes cupping therapy, aromatherapy, acupuncture, herbal remedies, nutraceuticals (i.e. dietary and nutritional supplements), and meditation like yoga, relaxation, movement therapy, music, and massage^[1, 2]. Cupping therapy was recorded as early as in ancient Egypt, ancient Greece, widely used up to now. It has also spread to the United States, and modern developed countries^[3]. Epidemiological studies emphasize the burden of pain in western countries with an estimated 50 % of community-dwelling older adults reporting chronic lower back pain^[4]. There is initial scientific evidence that cupping is able to reduce musculoskeletal pain^[5].

Cupping therapy involves different types as dry cupping, wet cupping, cupping with retention, moving cupping, shaking cupping, quick cupping and balance cupping. All of these types of cupping were frequently used in China, while dry cupping and wet cupping were widely used in Asian and Middle Eastern countries. Dry cupping is the most commonly used type, it uses a glass cup to achieve suction, then wet cupping, moving cupping (move the cup towards one direction). Wet cupping therapy is used in pain management. The mechanism of its needs further elucidation. Cells injured by wet cupping therapy seem to stimulate the expression of heat shock protein 70 (HSP70). Its benefit in pain reduction could be mediated by the expression of β -endorphin. Cups can be made of different materials such as bamboo, glass, or earthenware^[6, 3].

Dry cupping is using the negative pressure conditions of the cup to suck the skin into the cup without drawing blood. Wet cupping should prick the skin, so that blood of local site could be drawn into the cup^[7]. Cupping with retention is that cup is retained for a period of time on the skin after the dry cupping process is completed. Moving cupping is characterized by moving on the skin by pre-daubing lubricating oil on the skin^[8].

Aromatherapy is natural plant extract oils from them like ginger, oil of mint, lemon oil, chamomile oil, lavender oil, rosemary oil which play the anti-inflammatory role that reduce musculoskeletal pain^[9].

The 2010 Global Burden of Disease Study ranked low back pain as the condition with the highest number of years lived with disability^[10]. With rapid growth in the numbers and extents of older adults in low- and middle-income countries (LMICs) the back pain burden in older adults in these countries is predictable to grow significantly in coming decades^[11].

The indicators of low back pain could be acute/chronic lumbosacral ache attended with/without pain or numbness of legs. Low back pain (LBP) is the most common health problem among elderly women worldwide and major causes of disability. Elderly women aged 60 years or above are the second most common age group to visit physicians for LBP^[12, 13]. The some cause of LBP involved poor posture, standing too long at work, from a previous injury, obese women, postmenopausal female, work-family inequity, exposure to aggressive work environment, long work hours, certain job groups, unemployment, and sleep disorders^[14].

The current therapeutics of LBP consist of absolute bed rest at acute phase, analgesic or anti-inflammatory medications, physiotherapy, traction, alternative treatments and education regarding the prevention of LBP. Cupping therapy is a common therapy used to reduce the local chronic pain symptoms. Today, more and more patients have shown an attention in using cupping therapy for the treatment of LBP due to their confidence that it is more effective and safe than medications therapy^[15].

Community health nurses (CHN) play vital a dynamic and very important role in treating of elderly women with low back pain. They are responsible for assessing elderly women needs, problems and proved them by preventive measures from illnesses. In addition, community health nurses are design and implementation of comprehensive interventions, services and educational health programs^[16].

On other hands community health nursing (CHN) has many roles as educator role, focus on presenting health education in a clear and understandable format. They provide information to individuals, families, and communities for developing there positive attitudes, beliefs, and behaviors^[17].

Significance of the study

Cupping was widely used in the 19th century by Asian and European physicians. During the past few years, interest in cupping has increased and this could be due to inefficiency of conventional therapy in modern medicine^[18]. Nearly 80% of elderly visits to general practices in hospitals complaint of low back pain, and in steadied 75% of Americans have experienced chronic or recurrent pain, costing \$200 billion annually. Use of complementary and alternative therapy improves health status of elderly women's with low back. Elderly woman shifting towards use alternative therapy because of less adverse effects, safety and low cost. Cupping therapy is a promising method for the treatment of chronic back pain in elderly women^[15]. Furthermore, LBP has become a major public health problem that is common and costly to society, its effective management remains a challenge, and it is treated mainly with analgesics^[2].

Community health nurse identify strategies for management low back pain, provide skills, practices, health education and enhance the quality care of elderly women with low back pain. In Hong Kong, more than 90% of nurses participated and interests to learn complementary & alternative therapy (CAT). A study in America has reported that 76% of the United States medical staff had the experience of using CAT^[1].

Aim of the study

This study aims to evaluate effect of complementary and alternative therapy program for elderly woman with low back pain.

Research Hypotheses:

H₁: Elderly women's knowledge regarding low back pain, cupping therapy, and aromatherapy will be improve after applying complementary and alternative therapy program.

H₂: Complementary and alternative therapy program will improve elderly women's practices to decrease low back pain.

H₃: Complementary and alternative therapy program will improve health status of elderly women's with low back pain.

II. Subject And Methods

Study Design:

A quasi-experimental design was consumed to achieve the purpose of the study.

Setting:

The study was conducted at Rheumatology and Orthopedic outpatient clinic in May 15 Hospital, Helwan District, Cairo, Egypt.

Subjects:

A purposive sample was collected in a period six months; it included 50 elderly women with low back pain, who have the following criteria:

Inclusion criteria:

- Age from 60 years and above
- Accept to participation in the study
- Accept to use complementary and alternative therapy as cupping therapy.
- Recurrent low back pain for longer than three months with no sign of abating.

Exclusion criteria:

- Elderly women were excluded if they had skin sensitivity or disease (dermatitis, psoriasis), skin ulcer, and neurological disease.
- Elderly women using anticoagulants or non-steroidal antidepressants.
- Elderly women had previously surgery in the spinal column suspected serious spinal pathology as fractures or tumors.

Tools of data collection:

Two tools were used designed by the researchers for collection of data and achieving the aim of this study.

Tool I: An interviewing questionnaire: Developed by the researchers after reviewing the national and international previous and recent available related literature, it was written in simple Arabic language and it includes the following three parts:

Part I: Demographic data of elderly women included age, sex, occupation, educational level, marital status and living condition.

Part II:

A. Past history: includes time ago start of low back pain, causes, medication taken, aggravating factors.

B. Current medical history: it involves 3 sub items as current health status of elderly women before and after complementary and alternative therapy program to assess pain degree by:

1- **Numeric pain scales measure severity of pain** (Arslan, 2016^[19]; Anne, et al. 2016^[20]).

Scoring system includes:

- From zero to 1 refer to no pain.
- From 2 to 4 refer to mild pain.
- From 5 to 7 refer to moderate pain.
- From 8 to 10 refer to severe pain.

2- **Questions about frequency of low back pain** (intermittent or continuous), alleviating factors of low back pain and dose of Analgesic & Anti-inflammatory medication.

3- **Functional Ability** questionnaire after modification by researchers to Japanese orthopedic association back pain evaluation questionnaire (Hashizume, et al. 2015)^[21]. It included 14 closed end questions as during low back pain do daily work, lying / stretching long time, dependent to others to help you, can bend yourself forward, difficult to get up from the chair, difficult to fluctuate in bed, difficult wear socks, difficult walk or standing long time, difficult to sleep, difficult climb stairs and always change position due to low back pain.

The answer was scored for each question had 2 responses one for answer no and zero for answer yes, except question (1) taken one for answer yes & zero for answer no.

Part III: Elderly women's knowledge about complementary and alternative therapy: it included three sub teams as their knowledge about low back pain, cupping therapy and Aromatherapy or therapeutic oil.

a. Elderly women's knowledge about low back pain, it includes 8 questions in Arabic language related to meaning, types, causes, diagnoses, alleviating factors, pharmacological treatment and non-pharmacological treatment used.

b. Elderly women's knowledge about cupping therapy, it included 10 closed end questions in Arabic language as meaning, types, uses, and benefits.

c. Elderly women's knowledge about Aromatherapy or therapeutic oil, it included 5 questions in Arabic language related meaning, benefits, types, and how to use.

The answers were scored based on the level of knowledge of the elderly women. Each question had 3 responses:

- 2 score for complete correct answers.
- 1 score for incomplete answers.
- And 0 score for incorrect answer or don't know.

The higher score indicates a greater level of knowledge. Elderly women's answers were compared with a model key answer.

Total knowledge Score:

Total knowledge answers were classified into three categories:

- Poor knowledge that represents < 50%.
- Fair knowledge from 50 < 75%.
- Good knowledge from 75% or more.

Tool II: Elderly women's practice to decrease low back pain: it includes 4 sub items as back massage, hot & cold compressor, use body mechanism and applying exercise as lower tummy strengthening exercise, deep abdominal strengthening exercise and lower back stretch exercise.

Scoring system: Practices were calculated as:

- 1 scores for done practice.
- While 0 score for not done practice.
- The total practice scores were categorized as: adequate practice from 60% or more, while inadequate practice score < 60 %.

Data collection procedures: -

Study Period: The actual fieldwork was carried out from October 2018 to March 2019, in the previously mentioned setting. The time spent to fill in the questionnaire was 30-45 minutes. The researchers visited the study setting three days/week (Saturdays, Wednesdays & Thursdays) from 9.00 a.m. to 2.00 p.m. The researchers implemented the program by applying 6 sessions (2 theoretical and 4 practical).

Approval: An official letter was addressed to the director of mentioned hospital. The researchers explained the purpose and benefits of this study. The director was informed about the study title, aim, time and date of data collection.

Ethical considerations: Official approval was obtained from the Faculty of Nursing. Then send to the director of mentioned hospital. The researchers explained the purpose and benefits of this study to the studied sample who agreed to participate in the study. Oral and written consent was obtained before data collection. They were assured that all the collected data will be used for research purpose only. Participants' anonymity, confidentiality, privacy, safety and protection were secured.

Tool development:

Pilot study: It was conducted on 10% of the total study sample equal 5 elderly women with low back pain to test and evaluate the clarity, feasibility and applicability of the study tools and time required for completion of each study tool, pilot study sample included from main study sample.

Validity: Tools were tested for content validity by a jury of 5 experts in the Community Health Nursing, Geriatric Nursing & Medical Surgical Nursing to confirm the consequence and comprehensiveness of the tools.

Reliability: Reliability coefficients were calculated for the questionnaires of elderly knowledge about Complementary and Alternative Therapy Cronbach's Alpha was 0.94. While practices of elderly women Cronbach's Alpha was 0.86.

Field work:

A written approval letters will be obtained from the Dean of Faculty of Nursing, Halwan University to director of May 15 Hospital and director of outpatient clinics. Written letter direct to the director of May 15 hospital including the aim of the study. Three day per weeks from 9 am -2 pm to interview elderly women. A written approval obtained from elderly after investigators introduce their self for them, and after explaining purpose of the study.

The study was achieved through the following four phases:

Preparatory and assessment phase:

A review of the past & current related literature covering various aspects of the cupping therapy, and aromatherapy used after reviewing available books, periodical articles, and magazines. At the beginning of the interview, the researchers greeted the elderly women with low back pain, introduced themselves to each one included in the study. This phase covered interviewing the elderly women to collect baseline data. The pretest questionnaire was implemented to identify the elderly women's knowledge and practices to decrease low back pain.

Planning phase :

Complementary and alternative therapy program for elderly women with low back pain was developed based on the findings of the assessment and in the light of related literatures.

The elderly women's knowledge about low back pain, cupping therapy, and aromatherapy. It included meaning of low back pain, types, causes, diagnoses, prevention and treatment used, cupping therapy meaning, types, uses, and benefits, and aromatherapy meaning, benefits, types, and how to use.

Elderly women's practices to decrease low back pain. It included 4 sub items as back massage, hot & cold compressor, use body mechanism and applying exercise as lower tummy strengthening exercise, deep abdominal strengthening exercise and lower back stretch exercise.

Based on the result of the pre-test questionnaire the researchers designed 6 sessions each session need from 30-45 minutes for elderly women.

Implementation phase:

The researchers implemented the complementary and alternative therapy program for elderly women with low back pain followed by the immediate post-test, which lasted over a period of 6 months; by applying cupping therapy and practice to decrease low back pain in 4 sessions and 2 sessions for theoretical knowledge. By end of each session, the elderly women were informed about the content of the next session and its time using simple and clear language to be appropriate with all elderly women's levels.

Different teaching methods were used including videos, pictures, demonstration & re-demonstration and booklet. Also, media real instrument of cupping and aromatherapy.

In addition, more contact between researchers and all studied sample to exchange questions, experiences and to determine the effect of program on elderly women's health status, their knowledge and practices.

The booklet included two parts:

The first part is elderly women's knowledge about low back pain, cupping therapy, and aromatherapy. It helped every elderly woman to be able to know meaning of low back pain, types, causes, diagnoses, prevention and treatment used, cupping therapy meaning, types, uses, and benefits, and aromatherapy meaning, benefits, types, and how to use.

The second part is elderly women's practices to decrease low back pain. It included 4 sub items as back massage, hot & cold compressor, use body mechanism and applying exercise as lower tummy strengthening exercise, deep abdominal strengthening exercise and lower back stretch exercise.

Evaluation phase:

It aims to evaluate the effect of complementary and alternative therapy program on health status of elderly women with low back improvement, their knowledge, and practices. It was done immediately after its implementation by using the same preprogramming tools.

Statistical design:

Data entry and analysis were done using the Statistical Package for the Social Sciences (SPSS), version 22 and state graphics statistical software packages. Data were presented using descriptive statistics in the form of frequencies and percentages. Quantitative data were presented in the form of mean \pm SD. Qualitative variables were compared using Chi-square test (X^2) to compare between 2 qualitative variables. Statistical significance was considered at P-value < 0.05 .

III. Results

Table (1): Shows that the mean age of studied elderly women was 67.3 ± 6.2 , 54% of them were married, 38% of them were basic education. More than half of elderly woman lived in urban areas and not working. As regards to income 56% of them had insufficient income. Also, 54% of them live with family (wife/husbands).

Table (2): Shows that there was an improvement in numeric pain at post program about 80% of elderly woman had no pain. According to alleviating factors 80.0% of them used cupping therapy and 16% of elderly woman used massage with oil. Regarding to use of analgesic & anti-inflammatory medication at post were 6% of them take one/day.

Table (3): Shows that there was highly statistically significant difference in improvement in elderly woman functional ability after applying complementary and alternative therapy program for elderly woman with low back pain than pre in all items where ($P < 0.05$).

Table (4): Presents that there was statistical significant improvement of elderly women's knowledge about cupping therapy and therapeutic oil at post program than pre in all items, where $P < 0.005$.

Table (5): Illustrates that, there was statistically significant improvement in elderly women's practice at post application of complementary and alternative therapy program than pre in all practice items where $P < 0.005$.

Table (6): Clarifies that, there was a significant improvement in post total practices for elderly women's after applying complementary and alternative therapy program where $p\text{-value} = 0.000$.

Figure (1): Shows that 80% of elderly women had poor total knowledge in pre-program while 78% of them had good knowledge after applying complementary and alternative therapy program $p \leq 0.000$.

Table (7): Presents that, there was a significant correlation between total knowledge and total practices after applying complementary and alternative therapy program for elderly women with low back pain at $p \leq 0.001$.

Table (1): Frequency Distribution for DemographicData of Elderly Women with Low Back Pain (No. = 50).

Items	No.	%
Age (years)		
• 60 - 69	32	64%
• 70 - 79	15	30
• 80 +	3	6
Mean \pm SD = 69.7 \pm 5.0		
Marital status		
• Widow	19	38
• Married	27	54
• Divorced	4	8
Level of education		
• Illiterate	15	30
• Basic education	19	38
• Secondary education	8	16
• University education	8	16
Residence		
• Rural	22	44
• Urban	28	56
Occupation		
• Working	19	38
• Not Working	31	62
Income		
• Insufficient	28	56
• Sufficient of essential need	15	30
• Sufficient and save	7	14
Living condition		
• Family (Wife/ husbands)	27	54
• Siblings	17	34
• Alone	6	12

Table (2): Distribution of Present Medical History and Elderly Woman's Current Health Status (No. = 50).

Variables	Pre		Post		X ²	P
	No.	%	No.	%		
Numeric pain scales: measure severity						
• No Pain (0-1)	0	0	40	80	37.473	0.000
• Mild (2- 4)	10	20	10	20		
• Moderate (5-7)	16	32	0	0.0		
• Sever (8-10)	24	48	0	0.0		
Frequency of low back pain						
• Intermittent	18	36	10	20	45.316	0.001
• Continuous	32	64	0	0.0		
Alleviating factors of low back pain:						
• Rest & sleep	23	46	1	2.0	40.537	0.000
• Medication	27	54	1	2.0		
• Massage with oil	0	0.0	8	16.0		
• Use cupping therapy	0	0.0	40	80.0		
Dose of Analgesic&Anti-inflammatory medication						
	5	10	3	6		

• One/day	22	44	0	0.0	46.123	0.001*
• Twice/day	18	36	0	0.0		
• Three/ day						

Table (3): Distribution of Elderly Woman According to Their Functional Ability (No. = 50)

Items	Pre		Post		X ²	P
	No.	%	No.	%		
Do daily work						
• No	42	84	2	4	41.323	.002
• Yes	8	16	48	96		
lying / stretching long time						
• No	3	6	45	90	43.861	.002
• Yes	47	94	5	10		
Dependent to others to help you						
• No	4	8	35	70	44.852	.001
• Yes	46	92	15	30		
Can bend yourself forward						
• No	45	90	5	10	45.479	.003
• Yes	5	10	45	90		
Difficult to get up from the chair						
• No	2	4	40	80	43.123	.001
• Yes	48	96	10	20		
Difficult to fluctuate in bed						
• No	17	34	30	60	52.063	.000
• Yes	33	66	20	40		
Difficult wear socks						
• No	28	56	32	64	48.846	.000
• Yes	22	44	18	36		
Difficult walk or standing long time						
• No	8	16	44	88	43.039	.001
• Yes	42	88	6	12		
Difficult to sleep well						
• No	7	14	41	82	41.305	.003
• Yes	43	86	9	18		
Difficult climb stairs						
• No	45	90	12	24	42.291	.003
• Yes	5	10	38	76		
Always change position due to low back pain						
• No	8	16	29	58	48.616	.000
• Yes	42	84	21	42		

Table (4): Distribution of Elderly Women's Knowledge about Cupping Therapy and Therapeutic Oil Pre/Post Intervention (N = 50).

Items	Pre		Post		χ ²	P
	No	%	No	%		
Concept of cupping therapy						
• Complete correct answers	0	0.0	45	90	10.876	.001
• Correct & incomplete answers	21	42	5	10		
• Incorrect answers or don't know	29	58	0	0		
Types of cupping therapy						
• Complete correct answers	0	0.0	46	92	42.462	.002
• Correct & incomplete answers	10	20	4	8		
• Incorrect answers or don't know	40	80	0	0.0		
Importance of cupping therapy						
• Complete correct answers	0	0.0	43	86	42.193	.000
• Correct & incomplete answers	5	10	7	14		
• Incorrect answers or don't know	45	90	0	0.0		
Diseases treated bycupping therapy						
• Complete correct answers	1	2	41	82	42.515	.001
• Correct & incomplete answers	15	30	6	12		
• Incorrect answers or don't know	34	68	3	6		

Cupping therapy technique						
• Complete correct answers	0	0	28	56	26.374	.000
• Correct &incomplete answers	10	20	20	40		
• Incorrect answers or don't know	40	80	2	4		
Meaning of therapeutic oil						
• Complete correct answers	1	2	44	88	24.281	.000
• Correct &incomplete answers	28	56	5	10		
• Incorrect answers or don't know	21	42	1	2		
Types of therapeutic oil						
• Complete correct answers	2	4	46	92	15.312	.004
• Correct &incomplete answers	2	4	3	6		
• Incorrect answers or don't know	46	82	1	2		
Therapeutic oil technique						
• Complete correct answers	0	0.0	35	70	41.713	.000
• Correct &incomplete answers	5	10	13	26		
• Incorrect answers or don't know	45	90	2	2		
Importance of therapeutic oil in treating low back pain						
• Complete correct answers	1	2.0	40	80	42.713	.002
• Correct &incomplete answers	6	12.0	8	16		
• Incorrect answers or don't know	43	86.0	2	4		

Table (5): Distribution of Elderly Women Practice Per and Post Program (N=50).

Items	Pre		Post		χ^2	p-value
	No	%	No	%		
Back massage						
• Not done	47	94	5	10	41.266	.004
• Done	3	6	45	90		
Hot & cold compressor						
• Not done	45	90	2	4	43.103	.002
• Done	5	10	48	96		
Body mechanism						
• Don't use	49	98	15	30	42.112	.004
• Use	1	2	35	80		
Lower tummy strengthening exercise						
• Not done	50	100	10	20	44.569	.001
• Done	0	0.0	40	80		
Deep abdominal strengthening exercise						
• Not done	48	96	14	28	43.994	.003
• Done	2	4	36	72		
Lower back stretch exercise						
• Not done	49	98	16	28	41.237	.004
• Done	1	2	34	68		

Table (6): Distribution of Elderly Women's Total Practice Per and Post Program (N=50).

Total Practices	Pre		Post		χ^2	p-value
	No	%	No	%		
• Inadequate practice (< 60%)	45	90%	4	8.0%	41.168	0.000
• Adequate practice (≥ 60%)	5	10.0%	46	92.0%		

Figure(1): Distribution of Elderly Women's Total Knowledge Per and Post Applying Program (N=50).

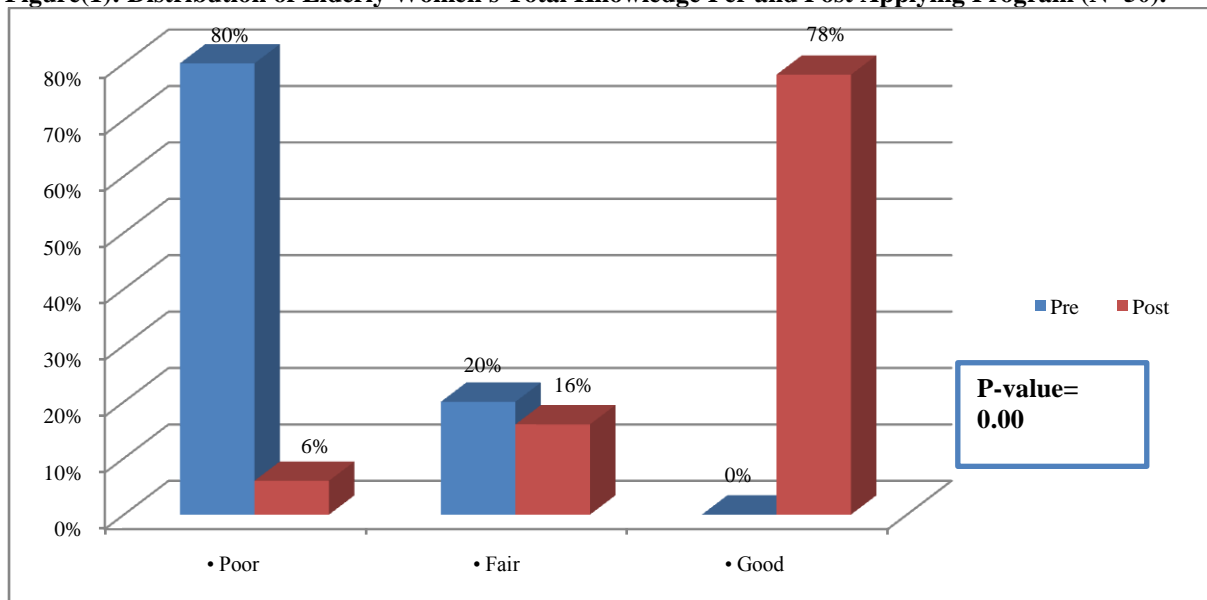


Table (7): The Correlation between Total Knowledge Scores and Total Practices Scores at Post Program (N=50).

Total Knowledge	Total Practices scores				χ^2	p-value
	Inadequate practice (< 60%)		Adequate practice (\geq 60%)			
	No=4	%	No=46	%		
• Poor	3	6%	0	0.0	45.213	0.001
• Fair	1	2%	7	14%		
• Good	0	0.0	39	78%		

IV. Discussion

The most prevalent health condition in elderly that leads to functional limitations and disability is LBP [22]. The prevalence of chronic LBP increases in elderly persons especially elderly women [23]. The most patients after failure of medical treatments tend to try alternative and complementary medicine. These days, pain is the most common reasons for seeking alternative treatment including cupping therapy, yoga, acupuncture, and herbal medicine [19].

Part I: Demographic characteristics of elderly women, current health status, functional ability.

As regarding to age of elderly woman, the present study findings showed that the mean age of them was 69.7±5.0 years, this was in harmony with Cedraschi, (2016) [24] who study titled in "Low back pain and health-related quality of life in community dwelling older adults" he reported that, LBP increased among elderly above 65 years of age nearly reached 30% however, the overall self-reported LBP increased in women after 75–79 years while it remained stable in men. Also this result contrast to Di Iorio, et al. (2007) [25] who study titled in "From chronic low back pain to disability, a multifactorial mediated pathway" who illustrate, prevalence of chronic LBP was higher in elderly women age 65 years and above.

From the researchers opinion low back pain increase among elderly women due to changes of skeletal system, menopause and not using body mechanism.

Regarding to elderly woman's current health status. The present study revealed there was an improvement numeric pain at post program, the majority of elderly woman had no pain. This result was in harmony with Kim, et al. (2011) [26] who study titled in "Evaluation of wet-cupping therapy for persistent nonspecific low back pain" they mentioned that, the pain due to persistent nonspecific low back pain (PNSLBP) in patients undergone 3 cupping treatment sessions was significantly improved compared to "usual care" group. So, cupping therapy is very effective in the treatment of low back pain.

Also, this results agreement with AlBedah, et al. (2015) [27] who study title "The Use of Wet Cupping for Persistent Nonspecific Low Back Pain" they reported that, the most applied technique was dry cupping, specifically for the low back pain because the cupping therapy has effective results in reducing LBP and decreasing disability after applying one single session.

Regarding to alleviating factors, the current study revealed the majority of elderly women used cupping therapy and minority of them used massage with oil. This is compatible with Moura, (2018)^[28] who study titled in "Cupping therapy and chronic back pain: systematic review and meta-analysis" he revealed a significant reduction of the pain intensity score in adults with chronic back pain by using cupping therapy compared with control group (usual care/other intervention/waiting list), this modality has advantages in relieving pain. Additionally, in the same way a study carried out by Lauche, et al. (2013)^[29] mentioned that, dry cupping has a greater analgesic effect, since the use of lubricants can reduce the friction between the edge of the cup and the skin, used arnica oil for the realization of cupping massage.

Concerning to use of analgesic & anti-inflammatory medication at post were 6% of them take one/day. Contrast to Wang, (2017)^[30] who study title was "The effect of cupping therapy for low back pain" he illustrated that, the effect of wet cupping therapy seems to be systemic as it was able to raise pain and the systemic effect of pain reduction could involve the central nervous system, and control demand the medication on demand only. On the same line Hssanien, (2010)^[31] who study titled in "Effect of cupping therapy in treating chronic headache and chronic back pain" reported that cupping therapy can elicit the release of morphine similar substances (endorphins), serotonin, or cortisol which can eventually lead to pain relief and adjust the physiological status of the individual.

In relation to functional Ability in the present study showed statistically significant improvement in elderly woman's functional ability at post applying alternative therapy program for elderly woman with low back pain and all most of them post program doing daily work, this results is in harmony with H. Cao, (2012)^[32] who study titled in "The effectiveness of wet-cupping for nonspecific low back pain in Iran" he reported that cupping is effective in temporarily reducing pain intensity and improve disability or maintain the effects for a long time.

In the same way a study carried out by Lauche, et al. (2013)^[29] who study titled in "Effectiveness of home-based cupping massage compared to progressive muscle relaxation in patients with chronic neck pain" who found that improvement of all pain severity domains of the BPI after a single session of cupping and cupping reducing pain perception and enhancing function, and the benefits unexpectedly extend for one week. Also Sadek, (2016)^[33] who study titled in "Effects Of Cupping Therapy Based On Stabilization Core Exercises On Low Back Pain" he proved that cupping treatment for low back pain is a great exercise for low back pain because it emphasizes movement by core muscles, those closest to the spin. Cupping treatment is most effective in all items.

From the researchers opinion uses of cupping and aromatherapy decreased pain which lead to improve health status of elderly women's with low back.

This part verified the research hypothesis H₃, which stated that "Complementary and alternative therapy program will improve health status of elderly women's with low back pain".

Part II: Elderly women's knowledge about cupping therapy, low back pain and therapeutic oil.

Concerning to elderly women's knowledge about cupping therapy, low back pain and therapeutic oil in the present study showed a significant statistical improvement in the knowledge of elderly women about cupping therapy and the use of therapeutic oils after applying the program for them and all most of elderly woman with low back pain post program had good knowledge about concept, types and importance of cupping therapy and also therapeutic oil. These results are in the same context with Ghazi, (2016)^[34] who study titled in "Knowledge, attitude and practice of cupping therapy among Saudi patients attending primary healthcare in Makkah, Kingdom of Saudi Arabia" he mentioned that participants had satisfactory knowledge, interested by treating with cupping therapy and more likely to respond to a survey on complementary and alternative medicine (CAM). This effect could bias the results by indicating greater knowledge of them, more favorable attitudes toward complementary and alternative therapy, and increased practice experiences with cupping therapy. Whether chance exposure to cupping therapy practice has influenced the general amount of knowledge.

Additionally, this results in the same direction with Poynton, (2006)^[35] who study titled in "General Practitioners' attitudes toward use of complementary and alternative medicine" he reported that, more recent years concerns about safety of complementary and alternative medicine (CAM) therapies have increased patients knowledge and that the number of general practitioners who have received some formal training in CAM is rising. Also in consistency with Al-Balawi, (2016)^[36] in study title "Public perceptions of cupping therapy in Tabuk city, Saudi Arabia" he reported that increase awareness' level of the participants was significantly associated with aspects of knowledge, attitude, and practice concerning cupping therapy.

From the researchers' point of view the elderly women with low back pain were need a lot of knowledge about cupping therapy, therapeutic oils and back pain to improve their health status so, they were good listener and cooperative with researchers during presenting a health education program to gain knowledge and practice.

This part agreed with the research hypothesis **H1**, which stated that "Elderly women's knowledge regarding low back pain, cupping therapy, and aromatherapy will be improved after applying complementary and alternative therapy program".

Part III: Elderly women practice per and post program

As regarding to elderly women's practice which include back massage, hot & cold compressor, using body mechanism and doing exercises to decrease low back pain, this study showed that there was statistically significant improvement in elderly women's practice post applying complementary and alternative therapy program than pre. This result was in the same line with **Yoon et al., (2012)**^[37] who study titled in "Development and application of a newly designed massage instrument for deep cross friction massage in chronic non-specific low back pain" they revealed that, a mixture of massage additional another intervention (exercise and education, or usual care) was better pain (pain relief) and function of patients with acute or chronic low back pain.

Additionally, this results in the same line with **Saragiotto, et al., (2016)**^[38] who study titled in "Motor control exercises reduces pain and disability in chronic and recurrent low back pain" they found in their results, Motor control exercise moderately decreased low back pain scores and slightly improved function in short- to long-term and muscles' strength.

Also, this results agree with **Gordon et al., (2016)**^[39] who study titled in "A systematic review of the effects of exercise and physical activity on non-specific chronic low back pain" they illustrated that, there was strong relationship between a poor sitting posture and low back pain. Also, stability exercise program improved low back pain and core intensity of muscles, providing patients by training and educating on uses of correct techniques for lifting any thing to improve low back pain, also exercise program decreased low back pain in 39% of patients. From the researcher's opinion, applying body mechanism and exercises focusing on lumbar stability, it must be combined with back massage, hot & cold compressor to reduce low back pain. Educate elderly women about healthy practices which decrease low back pain to be effective in improving their health status.

This part answered to the research hypothesis **H2**, which stated that "complementary and alternative therapy program will improve elderly women's practices to decrease low back pain".

V. Conclusion

It could be concluded that, there was highly significant differences for the elderly woman's knowledge regarding low back pain, cupping therapy, and aromatherapy improved after implementing of complementary and alternative therapy the program than pre. Elderly women's practices improved post applying complementary and alternative therapy program than pre, with highly statistically significant differences. Also, there was statistically significant improvement of elderly women's health status between pre and post applying complementary and alternative therapy program.

VI. Recommendation

In light of the study findings, the following recommendations are proposed:

- Periodical follow-ups should be carried out to assess health status of elderly women's with low back pain and their knowledge and practices about low back pain.
- Demonstrated booklet should be available at outpatient hospital clinics, inpatient departments and geriatric health centers for elderly women with low back pain.
- Educational training programs about using of complementary and alternative therapy for treatment of low back pain should be conducted at hospitals & geriatric homes to elderly, which help them to understand and know how to deal with low back pain as a chronic disease.
- Similar studies should be conducted on a larger sample of elderly with low back pain in different areas for generalization of the results.

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