Comparative Study between Different Acupressure Points on Relieving severity of Primary Dysmenorrhea

Naglaa Moslhi ABD EL-azeem, Aziza Ahmed Atia, Mohamed Abd El Salam, Soad Abd EL Salam Ramadan

1(M.Sc. Nursing, Tanta University), 2 Obstetrics and Gynecology Faculty of Nursing Ain Shams University, 3Obstetrics and Gynecology Faculty of medicine Benha University,4 Obstetrics and Gynecology of Nursing Faculty of Nursing Benha University

Abstract

Background: Dysmenorrhea constitutes one of the most frequent disorders in women of a fertile age. The objective of this research was to Comparative Study between Different Acupressure Points on Relieving severity of primary dysmenorrhea. **Research Design** : Prospective experimental design was utilized, **Setting**: at Faculty of Nursing, Benha University **Sampling:** convenience sample 120 females aged 18–25 years old who met the study criteria. were randomly assigned to one of two groups and evaluated during three menstrual cycles. **Tools**: four tools were used for data collection, **first tool**, was An interview questionnaire (a) Socio-demographic data (b)Menstrual history **Second tool**, Pain responses sheet, (a) Physiological responses to pain, (b) Behavioral responses to pain, **Third tool**, a modified version of "Johansson pain-o-meter **,Fourth tool**, a follow up chart. **Results:** main results of this study revealed that the severity of dysmenorrhea pain diminished significantly following treatment with acupressure at the SP6 and SP8 points ($P < 0.001$). Furthermore, Significant differences was observed between usage the SP6 and SP8 regarding the effect on physical condition and regarding the effective words (pain severity) which was reduced significantly further with SP6 point compared to SP8 point ($*p<0.05$).at the first day and second day **Conclusion:** Acupressure on SP6 had statistically significant effect than SP8 in female in age of 18-25 years old, suffered from primary dysmenorrhea. **Recommendation**: acupressure management especially on SP6 for dysmenorrea should be considered an integral part of nursing care, Mass media should be utilized for dissemination of simple, correct and relevant information about Acupressure management of dysmenorrhea, Studies to find out and assess effectiveness of acupressure on SP6 with another acupressure point..

Keywords: Primary dysmenorrhea, different acupressure, SP8 point, SP6 point,pain severity

Introduction

Dysmenorrhea is the medical term for menstrual cramps, that are pain or discomfort in the lower abdomen just before or during a menstrual period. Dysmenorrhea can be either primary or secondary. Primary dysmenorrhea usually starts 1 to 2 years after your first period **(Lvewers, 2010)**.

Secondary dysmenorrhea results from a specific disease or disorder, such as endometriosis, leiomyoma, adenomyosis, ovarian cysts, uterine fibroids, cervical narrowing, uterine malposition, pelvic tumors and pelvic congestion. It is more common in the fourth and fifth decades of life **(Bates, 2009)**.

The main symptom of dysmenorrhea is pain concentrated in the lower abdomen, in the umbilical region or the suprapubic region of the abdomen. It is also commonly felt in the right or left abdomen. It may radiate to the thighs and lower back. Symptoms often co-occurring with menstrual pain include nausea and vomiting, diarrhea or constipation, headache, dizziness, disorientation, hypersensitivity to sound, light, smell and touch, fainting, and fatigue. Symptoms of dysmenorrhea often begin immediately following ovulation and can last until the end of menstruation **(Leoerd, 2009)**.

Primary dysmenorrhea is the more common type of dysmenorrhea and it is due to the production of prostaglandins. These are natural substances made by cells in the inner lining of the uterus and other parts of the body. The prostaglandins made in the uterus make the uterine muscles contract and help the uterus shed the lining that has built up during the menstrual cycle. If excessive prostaglandins are produced, the woman may have excessive pain or dysmenorrhea with her menstrual cycle. Prostaglandins can also cause headaches, nausea, vomiting and diarrhea **(Jacob, 2012)**.

Acupressure or acu point massage was developed by the Chinese, and its concept is based on the traditional Chinese theories of 'Qi' or 'Chi' (a force that circulates in the human body with the help of paths known as meridians). It is an ancient technique used to heal the body with the help of fingers, and applying pressure to several points in the body, in order to stimulate the body's self-healing powers **(Lee, et al., 2011)**.

These acupressure points are those points that are located on the meridians, and are sensitive to pressure and small static impulses. The stimulation of these points releases biochemical by the name 'endorphins' (which act like natural morphine to the brain), thereby reducing pain and improving the circulation of oxygen in the blood. So acupressure may reduce menstrual pain and pain medication use **(Smith, et al., 2012)**.

The DiJi (SP8) point is another point used in acupressure as emergency point of pain relief, particularly for abdominal pain, bloating, diarrhea, dysuria, dysmenorrhea, and irregular menses. It is among the best points for treating any type of dysmenorrhea and is probably the optimal point for dysmenorrhea caused by stasis. It is located on the line joining the malleolus to the Sanyinjiao (SP6) point, on the medial-lateral aspect of the calf, below the inferior margin of tibia and gastrocnemius, three cuns below the SP9 point on the spleen meridian.

Menstruation is usually associated with some main discomfort; one of these main comfort is dysmenorrhea. Previous studies have indicated that acupressure at the (SP6) point may be considered as a noninvasive method for alleviating primary dysmenorrhea; no study has yet been conducted to assess acupressure at (SP8) point for alleviating dysmenorrhea. Despite the fact that, acupuncture textbooks present it as effective for reducing menstrual pain, we undertook the present study to compare the possible differences in effects of acupressure at the (SP6) and (SP8) points on primary dysmenorrhea **(Yeh, et al., 2013).**

Significance of the study

Menstruation is usually associated with some main discomfort; one of these main comfort is dysmenorrhea. Previous studies have indicated that acupressure at the (SP6) point may be considered as a noninvasive method for alleviating primary dysmenorrhea, with its effects

persisting as long as 2 hours after treatment. Considering that, as far as the authors are aware, no study has yet been conducted to assess acupressure at (SP8) point for alleviating dysmenorrhea. Despite the fact that, acupuncture textbooks present it as effective for reducing menstrual pain, we undertook the present study to compare the possible differences in effects of acupressure at the (SP6) and (SP8) points on primary dysmenorrhea **(Yeh, et al., 2013)**.

Aim of the study

This study aim to determine the effects of acupressure at Sanyinjiao (SP6) point and DiJi (SP8) point on pain severity of primary dysmenorrhea.

Research Hypothesis:

If the acupressure at (SP6) had significant effect than the acupressure at (SP8) point on dysmenorrhe

Material and Methods

Study design: this study are portrayed under four main categories are:-

- Technical design
- Administrative design
- Operational design
- Statistical design

Technical design

This includes research design, setting, sampling, tool used for data collection and ethical consideration.

Research design

Prospective experimental design was used to compare between the effects of acupressure at Sanyinjiao (SP6) point and DiJi (SP8) point on primary dysmenorrhea.

Setting: The study was conducted at Faculty of Nursing, Benha University

Sampling: Sample type; convenience sample.

Sample size; one hundred twenty female student complained of primary dysmenorrhea, These female student were divided into 2 groups (A and B).

The group A; Sixty female **student** applied acupressure on (SP6) point once time daily during first 3 days of the menstruation period for 20 minute.

The group B; sixty female student applied pressure on (SP8) point once time daily during first 3 days of the menstruation period for 20 minutes.

After that, the next menstruation period the two groups had changed the site of acupressure points.

Sample criteria;

- Females aged 18–25 years old.
- Suffered from primary dysmenorrhea with a severity of moderate to severe.
- Had regular menses.
- Had not been diagnosed for documented chronic disease.
- Did not mention symptoms such as itching, burning or abnormal discharge.

- Did not have a history of pelvic inflammatory disease, myoma and tumors, pelvic infection, or ovarian cyst

Tools of data collection:

Three types of tools were used for data collection and conduction of study. These consisted of: An interview questionnaire sheet, Pain responses sheet A modified version of Johansson pain-o-meter

Tool (1): An interview questionnaire sheet:

Was constructed based on review of literature it has been used to cover the aim of the study it included

- Socio-demographic data such as: age, weight and height, level of education.

- Menstrual history such as; age at menarche, amount of mensterual flow ,rhythm ,interval and duration of menstruation, time of dysmenorrhea, any previous method used to relieve dysmenorrheal pain.

Tool (2): Pain responses sheet:

Was constructed based on review of literature it has been used to cover physiological and behavioral responses to pain:

- Physiological responses to pain; included gastrointestinal tract responses as nausea and vomiting, musculoskeletal responses as muscle tension, and skin responses as skin color and Perspiration.

- Behavioral responses to pain; included namely posture, gross motor activities, facial and verbal expressions.

Tool (3) A modified version of "Johansson pain-o-meter

It was modified to suit the Egyptian culture. It is composed of 11 affective and 12 sensory pain words descriptors. These descriptors have been shown to discriminate differences in intensity between the basic pain terms used by patients and nurses to describe pain-like experiences. Two groups of words appear on the pain-o-Meter: Affective words which are torturing, killing, suffocating, terrifying, dreadful, fearful, troublesome, tiring, irritating, nagging and happy. While sensory words are cutting, tearing, sharp, burning, pressing, aching, gnawing, pinching, stinging, pricking and sore. This tool allows for assessment of the intensity of sensory and affective components of pain (quality of pain) colloquial Arabic language was used.

Tool (4): A follow up chart:

is a daily chart (Appendix II) was developed by the researcher to be recorded by the study subjects it included: symptoms of the dysmenorrhea. And the characteristics of pain .

Tool Validity:

Tools were developed after reviewing literature. As, they were early standardized, they were translated and checked for content validity.

Ethical consideration:

- The researcher took consent from the subject agreed to participate in the study.

- The research tools didn't embarrass modesty and didn't cause any harm or pain for participant

- The research tools didn't cause any physical, psychological and social risks.

- The participant has the right to withdraw from the study at any times.

Administrative design:

Written approval was obtained from dean of the faculty of nursing Benha university .

Operational design:

This design included the preparatory phase, pilot study, the actual field work and associated limitation.

Preparatory phase

Is the first phase in study ,the researcher carried out a through review of local and international related literature about the various aspects of the research .this helped the researcher to be acquainted with magnitude and seriousness of the research and assessed in preparing the required data collection tools .

Pilot study: Pilot study was carried out on twelve female student complained of primary dysmenorrhea.

Field work: The study started from May 2014 to June 2014 .The researcher attended to the college from 9:00 am to 1:00 pm three days per week. The subjects collected according to the previous criteria were categorized into two groups (A and B group).The researcher used the interview questionnaire to collect the necessary data from sample of female student .All student were taught how to fill the chart, The researcher trained and explained to group (A and B) the technique of acupressure

Limitation of the study: Some female student refused to communicated because of fearing and embarrassment. It solved by telling them the information is secret.

Statistical Analysis:

The collected data was organized, tabulated and statically analyzed using SPSS software statistical computer package version 12. For quantitative variables, the range, mean and standard deviation were calculated analyzed using the students (t0 test. For categorically variables, the number and percent distribution was calculated.

Result:

Figure (1): Distribution of BMI of study sample

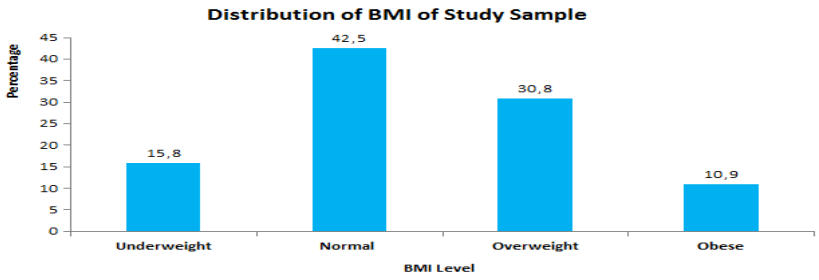

Table (1): Assessment of Menstrual history of women in the study sample

Items	n = 120	
	No	%
Date of menarch:		
9-<11	2	1.7
11-<13	38	31.7
13-<15	68	56.7
15-<17	12	10.0
X±SD	**13.0±1**	
Duration between Menses:		
< 25 day	11	9.2
25 day	23	19.2
28 day	72	60.0
<28day	14	11.7
X±SD	**27.2±2.0**	
Duration of Menses:		
2– day 3	9	7.5
4– day 5	92	76.7
6– 7day	19	15.8
<day7		
X±SD	**4.7±0.9**	
No of menstrual pad\ (amount of menstrual blood loss):		
Light (1 pad)	6	5.0
Moderate (2 – 3 pad)	103	85.8
Sever (≥ 4 pad)	11	9.2

Table (1) shows that the higher percentage 56.7 % of the sample had menarche between 13-<15 years , the duration between menses 60% of sample had 28 days,76.7% of sample had menses from 4-5 days. 85.8% of sample had moderate amount of menstrual blood flow 2-3 pads

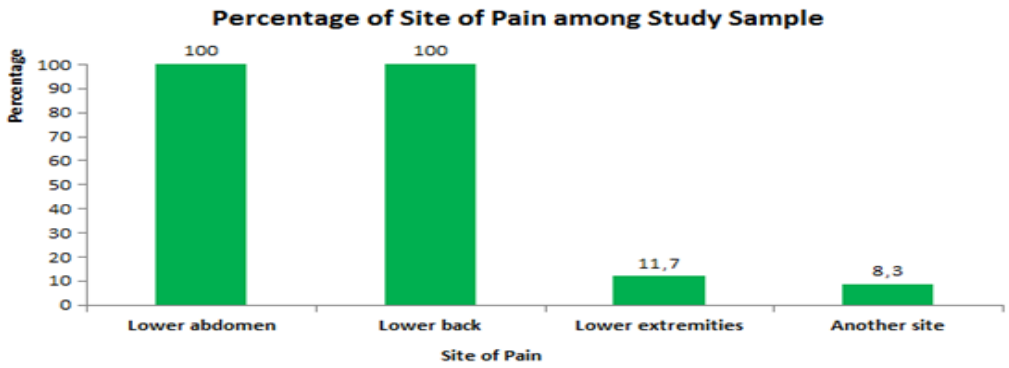

Figure (2) show percentage of site of pain among study sample

Table (2) Comparison between the degree of menstrual pain sensation before and after usage of SP6and SP8 regarding to A modified version of "Johansson pain -0 – meter" affective words

Affective Words	Before Intervention	%	N=120 After Sp6 n=120	%	After Sp8 N= 120	%
Day 1						
Torturing	80	66.6	32	26.6	56	46.6
Suffocating	75	62.5	28	23.3	62	51.6
Killing	88	73.3	35	29.2	46	38.3
Terrifying	65	54.2	40	33.3	51	42.5
Dreadful	40	33.3	21	17.5	39	32.5
Troublesome	37	30.8	32	26.6	42	35
Fearful	21	17.5	52	26.6	32	26.6
X^2(1)[after SP8]	**14.8***	**/*p<0.05**				
X^2(2)[after SP6]	**45.6****	**/**p<0.0001**				
X^2(3)[after SP6&SP8]	**24****		**/**p<0.0001**			
Day 2						
Torturing	68	56.6	14	11.8	32	26.6
Suffocating	71	59.2	13	10.8	24	20
Killing	80	66.6	22	18.3	28	23.3
Terrifying	65	54.2	31	25.8	35	29.2
Dreadful	41	34.2	11	9.2	21	17.5
Troublesome	39	32.5	10	8.3	13	10.8
Fearful	22	18.3	20	16.6	29	24.2
X^2(1)[after SP8]	**27.9***	**/*p<0.05**				
X^2(2)[after SP6]	**63.6****	**/**p<0.0001**				
X^2(3)[after SP6&SP8]	**9.79**		**/*p<0.05**			
Day 3						
Torturing	43	33.8	1	0.8	15	12.5
Suffocating	41	34.5	2	1.6	13	10.8
Killing	50	41.6	6	5	14	11.8
Terrifying	32	26.6	8	6.6	16	13.3
Dreadful	42	35	12	10	31	25.8
Troublesome	29	24.2	5	4.2	14	11.8
Fearful	21	17.5	10	8.3	12	10
X^2(1)[after SP8]	**33.3****	**/*p<0.05**				
X^2(2)[after SP6]	**92.2****	**/**p<0.0001**				
X^2(3)[after SP6&SP8]	**28.6 ***		**/*p<0.05**			

p<0.05 Not significant *p<0.05 Significant **p<0.0001 Highly significant

Significant differences was observed between usage the SP6 and SP8 regarding the effective words at the first day , the second day and third day .

Table (3): Comparison of mean pain score sensation before and after usage of SP6 and SP8 ON DAY 1, 2, 3

Pain Score	Before intervention	%	N=120 After Sp8 n=120	%	After Sp6 N= 120	%
Day 1						
None	0	0	19	15.8	9	7.5
Mild	0	0	27	22.5	19	15.8
Moderate	45	37.5	30	25	22	18.3
Severe	52	43.3	41	34.2	59	48.3
Unbearable	23	19.2	2	1.8	12	10
X ± SD	6.2 ± 1.2		2.5±1.6		4.2±0.7	
t_1 = 3.675	p=0.0003*		t_2=2.19 p=0.03*		t_3 =13.3 p=0.03*	
Day 2						
None	5	4.2	45	37.5	29	24.2
Mild	24	20	41	34.2	37	30.8
Moderate	49	40.8	27	22.5	41	34.2
Severe	27	22.5	7	5.8	11	9.2
Unbearable	15	12.5	0	0	2	1.6
X ± SD	5.7 ± 1.8		2.3±1.4		3.8±1.8	
t_1 = 2.67	p=0.0087*		t_2=2.28 p=0.024*		t_3 =10.0 p=0.03*	
Day 3						
None	68	56.6	98	81.6	72	60
Mild	12	10	16	13.3	35	29.2
Moderate	31	25.8	6	5	13	10.8
Severe	9	7.5	0	0	0	0
Unbearable	0	0	0	0	0	0
X ± SD	6.1 ± 0.2		2.1±0.6		3.2±0.7	
t_1 = 2.38 p=0.018*			t_2=2.25		t_3 =5.6	
z_1 = 2.78 p=0.0058*			p=0.026*		p=0.03*	
z_2 = 3.18 p=0.0016*						

t_1=Paired t test between pretest and SP8 t_2=Paired t test between pretest and SP6
t_3=Paired t test between SP6 and SP8
Z_1=COMPARISON OF MEAN PAIN SCORE BETWEEN DAY1 AND DAY3(SP8)
Z_2=COMPARISON OF MEAN PAIN SCORE BETWEEN DAY1 AND DAY3(SP6)

Table show that significant differences observed between usage of SP6 and SP8 at the first, second and third day.

Discussion

Dysmenorrhea is the leading cause of recurrent short-term school absence in adolescent girls and a common problem in women of reproductive age. Dysmenorrhea is severe painful abdominal cramps at the onset of menstruation or during it. Severity of symptoms varies greatly from women to women and from time to time **Lvewer {2010}.**

Acupressure is a branch of oriental medicine. It is a way of accessing and releasing blocked or congested energy centers in the body. These energy centers or acupoints lie on energy pathways called meridians. When acupoints or meridians become blocked or congested, the person experiences pain or discomfort. **(Salem, 2009)**

Regarding to the duration of menstrual cycle, the present study revealed that the highest percentage of the sample had menstrual duration between 4-5 days; this result goes in line **with El-Gazar**, **(2009**) who studied the uses of complementary and alternative therapy in management of menstrual disorder among adolescent girls at faculty of nursing in Alexandria. mentioned that, menstrual duration was between 4- 6 days.

According to body mass index (B.M.I), the present study revealed that was no relation between dysmenorrheal and (B.M.I) of students. This result was supported by **El-Gendy, et al, (2007)** who studied impact of acupressure on dysmenorrheal among adolescent. reported that no relation was found between dysmenorrheal and (B.M.I).

In the present study results more than half of the students have their menarche at 13-15 years. Such result was almost an agreement with **Abd El Fattah, (2008**) who studied body mass index and its relation to menstrual pattern at faculty of Assut .had found that, more than three quarter (78%) of his studied sample has their menarche at an age between 12 and less than 16 years. Also the result supported by **Titilayo, (2009).** Who studied menstrual discomfort and its influence on daily academic activities among under graduate female students in Nigeria., who found that under graduate female students in Nigeria aged less than 15 years at the first menstruation.

In relation to the interval of the menstrual cycle, the present study showed that, the majority of students have an average interval of menstruation between 25-28 days. This finding was in disagreement with **Gharloghi , et al, (2012**) who had investigated the effect of SP8 and SP6 on female to relieving dysmenorrheal pain, had found that the interval between menstrual cycle 21- 35, this related to different site.

Concerning to the amount of the menstrual blood loss, the result of the present study indicate that ,the majority of sample had moderate menstrual flow (2 - 3) pads/ day. This finding was in agreement with **Ali (2007)** studied alternative therapy for reliving dysmenorrheal pain at faculty of nursing El-Menia, who illustrated that, the highest percent of studied sample had moderate menstrual flow which there utilized (2-3) pads/ day.

The present study revealed that was significant differences between SP8 and SP6 after used affective words at first, second and third day. The present study showed that was significant differences between SP6 and SP8 after usage on behavioral response.

The present study showed that acupressure had significant decrease for intensity of dysmenorrheal pain, the study reported that 15.8% from sample had no pain after usage of SP8 compared to 7.5% from sample had no pain after usage of SP6 at the first day and unbearable degree decrease from 19.2% to 1.8% after usage of SP8 compared to 10% from sample after usage of SP6 at the first day.

The study reported that 4.2 % from sample had no pain before acupressure usage that increased to 37.5% from sample had no pain after usage of SP8 compared to 24.2% from sample had no pain after usage of SP6 at the second day and unbearable degree decrease from 12.5% to 0% after usage of SP8 compared to 1.6% from sample after usage of SP6 at the second day.

The study also revealed that 56.6% from sample had no pain before acupressure usage that increased to 81.6%

from sample had no pain after usage of SP8 compared to 60% from sample had no pain after usage of SP6 at the third day.

The present study showed that was significant differences between SP8 and SP6 after usage on pain degree at first, second and third day (table 16), This findings is go in line with **Gharloghi S, Torkahrani S. (2014)** who had investigated the effect of SP8 and SP6 on female to relieving dysmenorrheal pain and found that the usage of SP6 had significant effect more than the usage of SP8.

Conclusion

Acupressure on SP6 had statistically significant effect than SP8 in female in age of 18-25 years old, suffered from primary dysmenorrhea.

Recommendations

Acupressure management especially on SP6 for dysmenorrea should be considered an integral part of nursing care, Mass media should be utilized for dissemination of simple, correct and relevant information about Acupressure management of dysmenorrhea, Studies to find out and assess effectiveness of acupressure on SP6 with another acupressure point.

Financial support

No funding was received

Conflict of interest

No

References

Ali H. (2007) Alternative Therapy for Reliving dysmenorrheal pain: Comparative Study Master Degree. Faculty of Nursing. El-Menia University

Bates, G. &Dirnauro, (2009) N. Mason's basic medical_ Surgical nursing. 6th ed. New York, St. Louis san-Francisco. McGraw-Hill Co., Library of Congaree. 2004; 149,152 154

El-Gazar W. (2009) uses of Complementary and Alternative Therapy in Management of Menstrual Disorder among Adolescent Girls in an Egyptian Village. Master degree. Faculty of Nursing. Alexandria University.:11-15,35.

EI-Gendy S 2007AND Rizk S. impact of Acupressure on Dysmenorrhea among Adolescent. The new Egyptian Journal of Medicine. 36 (3) :1' March: 7-10.

Gharloghi S and TorkzahraniS . (2014) The effects of acupressure on severity of primary dysmenorrhea . J. Gen. Intern Med .;20(l):62-67.(PM C Free article) (Pub Med).

GharloghiS,Torkzahrani S, Akbarzadeh A, Heshmat R(2012): the effects of acupressure on severity of primary dysmenorrheal. Patient prefAdher .2012;6:137.

Jacob, A.(2012): A comprehensive text book of midwifery and gynecological nursing, ed,Jaypee Co, USA, p :186

Lee, Eun Jin: Frazier& Susan K. (2011). "TheEfficacy of Acupressure for Symptom Management: A Systematic Review". Journal of pain and Symptom Management 42 (4): 589-603)

Leoerd D. (2009) Maternity and women health. 9th., London. Mosby Co.;99.

Lvewers J. (2010) Quick Reference for Professional Gynecology. 1st ed., Singapore. Tones and Bartlett publishes. Sundry Co.,.171-175.

Salem S. (2009) Effect of wristband Acupressure on the First Trimester Pregnant Women WithMorning Sickness. Doctoral thesis .Faculty Of nursing. AM shams University .;21-25 .

Smith, A. (2012): Acupressure for pain management in labor, 1s` ed, philadliphia, pp:234-256.

Titilayo (2009): menstrual discomfort and its influence on daily academic activities and bsyshosocial relationship among under graduate female students in Nigeria. TamzaniaGournal of Health Researsh, 2009 .

Yeh ML, Hug YL, Chen 11H, Lin JG, Wang YJ. (2013) Auricular acupressure combined with an interne.- based intervention or alone for primary dysmenorrheal : a control study . Evid Based Complement AlternatMed. Epub Apr3.PubMed.