

Application of Evidence Based Measures for Alleviating Minor Discomforts during 1st Trimester of Pregnancy

Asmaa Ibrahim¹, Mona A. El-Sheikh², Eman Mostafa³

¹Assistant lecturer of Maternity & Gynecological Nursing

^{2,3}Professor of Maternity & Gynecological Nursing,

Maternity & Gynecological Department, Faculty of Nursing, Ain Shams University

Abstract

Background: Management of various discomforts require unique observations and knowledge of variety of treatment options. The present study aimed to examine the effectiveness of application evidence-based measures on alleviating minor discomforts during 1st trimester of pregnancy. A quasi- experimental design was used. The study was conducted at the Antenatal clinics at Ain Shams University Maternity Hospital. A Purposive sample of one hundred and three pregnant women were included in the study, all women were received the intervention. Data were collected through using three tools (A structured interviewing questionnaire, pregnancy symptoms inventory (PSI) & Weekly follow up sheet). In addition to Arabic Evidence based guide for alleviating minor discomforts during 1st trimester of pregnancy. The main results of the study were the following: All pregnant women that suffered from the current discomforts (nausea and vomiting, heartburn, and constipation) followed the evidence-based guide which designed by the researcher that involved instructions related to lifestyle modification besides, one of the following were used: herbal therapy, acupressure, and aromatherapy. Additionally, the present study demonstrates that there is highly significant difference between responses rate at before and after the intervention related to (nausea & vomiting, heartburn, and constipation). This significance in women response rate led to positive effect in decreasing frequency of current discomforts (nausea & vomiting, heartburn, and constipation) at before and after intervention. The current study concluded that evidence-based guide had a positive effect on alleviating minor discomforts during 1st trimester of pregnancy. The following is recommended: Inclusion of leaflet or booklet about evidence-based measures for alleviating minor discomforts during pregnancy as a hospital protocol for guiding nurses in application.

Key word: Evidence based measures, minor discomforts, 1st trimester of pregnancy.

Introduction

Pregnancy is an exciting and often joyous time in a women's life, as it highlights the women's amazing creative and nurturing powers while providing a bridge to the future. The growing fetus depends entirely on its mother's healthy

body for all needs. Consequently, pregnant women must follow accurate protocol to remain as healthy and well-nourished as they possibly can (Radhik, 2016).

Pregnancy period witness various anatomical, physiological and

biochemical changes but due to these changes women may suffer from various discomforts. These discomforts are called minor ailments of pregnancy. Most common minor ailments of pregnancy are nausea and vomiting, backache, heartburn, constipation, varicose veins, haemorrhoids, leg cramps, frequency of micturition. The major systems affected by pregnancy are digestive, musculoskeletal, circulatory, integumentary, nervous and endocrine system (Lincettoet al., 2016).

Most of pregnant women believe that these minor ailments happen in pregnancy and they have to tolerate. Indeed, these women didn't realize that minor discomforts could be deviated from normal boundaries and become major problems which lead to complications on pregnancy and negatively affects women daily life activity. As severe nausea and vomiting that lead to dehydration and need hospitalization. Subsequently, costs of treatment increase on individual, family, organizational and community level (The Ohio State University Wexner Medical Center, 2017).

Therefore, health service providers are required to cooperate with pregnant women and obtain comprehensive history to detect as early as possible any minor discomfort to provide the best treatment approach for minor illnesses based on evidence based research findings (Alageswari & Manju, 2019).

Minor discomforts can be managed safely and effectively at home, after differential diagnosis done to exclude other pathological causes for each minor discomfort. In general, life style modification and complementary therapies as (herbal therapy, acupressure and aromatherapy) are everything that is required to get rid of mild morning

sickness, heartburn and constipation. These therapies mainly prevents the adverse effects to the fetus as well as the pregnant women (Climent, 2018).

Professional nurse forms an important cadre of health care facilities and should take initiative to conduct research of various aspects to promote and update her knowledge about evidence based measures for alleviating minor discomforts during pregnancy. Thus, nurses must develop audio visual educational programs to raise pregnant women awareness about the importance of early management of minor ailments during pregnancy, Reassure and support those who are suffering with minor ailments and educate evidence based therapeutic measures (American College of Obstetrics and Gynecology (ACOG), 2018).

Justification of the study:

Minor discomforts are associated with pregnancy as a result of either hormonal or physical changes that happen during this period. Most of them are not dangerous, but may threaten the women life if not managed well. So it is better to be able to spot symptoms of any discomfort quickly to manage it as early as possible and avoid the negative consequences on women and their fetus if neglected (Tharpe et al., 2017).

According to (WHO, 2016), Symptoms of nausea and vomiting are experienced by approximately 70% of pregnant women and usually occur in the first trimester of pregnancy. Following them heart burn that affects 17% to 80% of all pregnancies and constipation that affected 78% of pregnant women worldwide. These discomforts could be present in all trimesters of pregnancy.

Fortunately, lots of these discomforts can be alleviated using some simple remedies and proper explanation but Egyptian studies that conducted in this topic revealed that the majority of women had a poor knowledge regarding minor discomforts and its management (Abd Elhaliem et al., 2018) so, it was mandatory to apply the present study to evaluate the effectiveness of applying evidence based measures on alleviating minor discomforts during first trimester of pregnancy to safeguard women health.

Aim of the study

The study aims to examine the effectiveness of application evidence based measures on alleviating minor discomforts during 1st trimester of pregnancy through:-

-Identifying different minor discomforts associated with pregnancy in 1sttrimester for each woman & how to deal with it

- Using the Developed evidence based guide for alleviating minor discomforts during 1st trimester of pregnancy

-Evaluating the effectiveness of application of evidence based measures on alleviating minor discomforts during 1st trimester of pregnancy.

Research hypothesis:

Evidence based guide will have a positive effect on alleviating minor discomforts during 1st trimester of pregnancy.

Subjects and Methods:

Technical design:

✚ Research Design:

A quasi- experimental design was used in carrying out the study.

✚ Research Setting:

The study was conducted at the Antenatal clinics at Ain Shams University Maternity Hospital and completed through antenatal visits and between visits through telephone calls.

✚ Subjects:

Sample size: was calculated according to the following statistics formula $n = Z^2 \cdot p(1-p) / d^2$; a sample of one hundred and seventeen pregnant women was included in the study, representing 10% of the total women who attended at the previously mentioned setting during 1 year and fulfill the criteria and received the intervention. Final sample size was one hundred and three pregnant women as (fourteen women were dropped from the study after receiving the intervention due to inability to complete follow up).

Sample type:

Purposive sample technique was used.

Sample criteria:

Inclusion Criteria:

Women with gravid (G1& G 2), have single intrauterine pregnancy, during 1st trimester of pregnancy ,suffer from any type of minor discomforts, without present or previous pregnancy

complication, free from medical and gynecological disease, just read and write and not exceed 12 weeks.

Exclusion criteria

Medical and paramedical professionals are excluded.

Tools for data collection:

Three tools were used for data collection:

I: A structured interviewing questionnaire: that was designed by the researcher based on literature review (Annamma,2019).It was divided into two parts:

- **Part(1):**This part was used to assess women's socio-demographic data as age, educational level, marital status & occupation, etc...

- **Part(2):**This part was used to assess present obstetric history as Gravidity, Parity, Gestational age by weeks, Current minor discomfort, Frequency and How to deal with it.

II: Pregnancy symptoms inventory (PSI) adapted from (Foxcroft et al., 2013): which used to assess type (nausea & vomiting, heartburn and constipation) & frequency of minor discomforts during first trimester of pregnancy before & after the intervention

❖ Scoring system:

Scoring of the pregnancy symptoms inventory distress subscale is based on the presence of the symptoms and their bother ratings. Specifically, women first indicate whether they had the symptom in the last week. If they did have the symptom, they then report

frequency of these symptoms on a 4-point scale (0 _ never, 1 _ rarely, 2 _ sometimes, 3 _ often).

III: The third tool: Weekly follow up sheet: it was designed by the researcher to follow up the degree of improvement of minor discomforts during the first trimester of pregnancy.

In addition to **Arabic evidence based guide** that contains all necessary information & figures about (stages of pregnancy, physiological changes during first trimester of pregnancy, the most common minor discomforts during first trimester of pregnancy (nausea, vomiting, heartburn & constipation) & how to deal with it depend on evidence based measures for alleviating minor discomforts (lifestyle modification, herbal medicine, aromatherapy & acupuncture).

Content validity and reliability:

Validity

Tools were reviewed for appropriateness of items through an expert panel of three nursing expertise in the field of obstetric –gynecological to assure content and shape validity and then a pilot study was conducted for women that represent (10% of the sample) to evaluate the applicability and reliability of data collection plan. According to pilot study results, tool items were modified to be clearer for the study sample as well as assessment point was organized.

Reliability:

Reliability: internal consistency reliability was assessed in the present study tools via cronbach's Alpha reliability analysis to indicate how well the items in an instrument fit together conceptually.

Name	Cronbach's Alpha test
Structured interviewing questionnaire	0.781
Pregnancy Symptoms Inventory	0.87
Weekly follow up sheet	0.642

Ethical considerations:

The approval was obtained from Scientific Research Ethical committee in Faculty of Nursing at Ain Shams University before starting the study. The researcher clarified the aim of the study to pregnant women that included in the study. The researcher assured maintaining anonymity and confidentiality of the subject data. There is no harmful occurred to pregnant women. Pregnant women had the right to withdraw from the study at any time.

Operational design:

Preparatory phase:

It included reviewing of the current local and international related literature using books, articles and scientific magazines to develop tools for data collection.

Pilot study:

Pilot study was conducted on the cases attended to the hospital (10 % of total study period) on 9 pregnant women through the period from 1/9/2018 to 30/9/2018. It was conducted to evaluate applicability of the study and validity of the tools to find the possible obstacles and problems that might be faced during data collection; then accordingly, the necessary modification of data collection plan and tools were done. Pregnant

women included in the pilot study were excluded from the sample size.

Fieldwork:

After obtaining the official approval for data collection. Data was collected 3days/week from 9 am to 1 pm .Nearly 2-3 cases attended weekly so the study extended 1 year from 1/10/2018 to 30/9/2019 as period detected for the study was short and period extended to reach presentable sample at antenatal outpatient clinics at Ain Shams Maternity University Hospital.

Assessment phase:

At first the researcher introduced herself for each pregnant women and explained the aim of the study to gain their confidence and trust and finally oral consent was obtained from the participant.

Cases were interviewed individually in the sitting area of the antenatal outpatient clinics using structured interviewing questionnaire sheet to collect personal data then another tool called (pregnancy symptom inventory) was used to identify different minor discomforts associated with pregnancy & its frequency within time ranged from 15-20 minutes taking into consideration the use of simple Arabic language that suits the level of each woman.

Implementation phase:

After diagnosis of minor discomfort, the researcher conducted orientation session plus two instruction sessions with pregnant women according to detected discomfort after revising tools of data collection at base line assessment in the waiting area of antenatal outpatient clinics as the following:

Researcher started the orientation session by providing women knowledge about (stages of pregnancy, physiological changes during first trimester of pregnancy, the most common minor discomforts during first trimester of pregnancy (nausea, vomiting, heartburn & constipation) and briefly how to deal with it depending on evidence based measures for alleviating minor discomforts (lifestyle modification along with one of the complementary therapies).

First instruction session was concerning lifestyle modification as a part of evidence based measures used for alleviating diagnosed minor discomfort for each pregnant women. This teaching session was ranged from 10-15 minutes.

Instructions related to lifestyle modification which include (dietary modification, dehydration prevention, proper positioning & avoidance of triggers) were explained in simple & detailed manner using visual aids "pictures" & group discussion.

Second instruction session was related to complementary therapies as another part of evidence based measures used for alleviating diagnosed minor discomfort for each pregnant women. This teaching session was ranged from 15-20 minutes.

Complementary therapies included herbal therapy, aromatherapy and acupressure. Each one was explained in detailed manner as the following (each measure with different methods of use, dose, precautions, frequency of usage), using Arabic illustrated guideline to facilitate understanding the effect of evidence based measures on alleviating minor discomforts during 1st trimester of pregnancy, this Arabic guide contains all

necessary information & figures about these discomforts.

After teaching sessions had completed, let woman choose the most preferred and applicable method for her (putting into consideration that each woman should follow all instructions related to lifestyle modification along with one of the complementary therapies chosen by women). In addition the researcher told the woman if she felt any undesirable symptom or side effect, report the symptom she felt to the researcher as early as possible through telephone call. At the end of the session each woman received Arabic booklet that contain very important information & figures to facilitate learning and application of these measures at home.

Evaluation phase:

The researcher followed each woman for a month to take oral report about her self-assessment and to motivate her for using the evidence based measures she chose through antenatal visits and between visits through telephone calls.

Administrative design:

An official approval was obtained from Dean of faculty of nursing, Ain Shams University and the director of Ain Shams University Maternity Hospital as an approval for data collection through written letter containing title and aim of the study.

Statistical design:

- The collected data was coded, organized, revised and analyzed by the researcher through pentium 4 computer using program (Excel version 2000 and statistical package of social science (SPSS) version 22. and result was

presented in tables and figures. Data were presented using descriptive statistics in the form of frequencies and percentages. Test of Significance was used to find out association between the variables using Friedman test and Chi square test (X^2).

Significance of the results: (statistical analysis)

- No significant difference obtained at $P > 0.05$
- Significant difference obtained at $P < 0.05$ (*)
- Highly significant difference obtained at $P < 0.01$ (**)

Limitations of the study:

- Fourteen cases were omitted from the study due to inability to reach them during follow up.
- Cases that attended to the setting and fulfill the criteria was tiny and researcher extend the period from six months to one year to obtain presentable sample.

Results

Table (1): demonstrates that 41.6% of the pregnant women their age ranges from 27 to 32 years with mean 28.1 ± 6.42 years. Regarding occupation 59.2% of the pregnant women do not work. Regarding to educational level 40.8% of them has secondary education. Also, demonstrates that 97.1% of pregnant women are married.

Table (2): shows that 51.5% of the pregnant women are gravid one with mean score 1.61 ± 0.54 . As regard gestational age, 79.5% of the pregnant

women their gestational age ranged from 8-11 weeks with mean 9.43 ± 3.88 .

Figure (1): shows that all pregnant women that suffered from nausea & vomiting followed instructions related to lifestyle modification besides, 72.3% of them used herbal therapy, 21.3% used acupressure and 6.4% used aromatherapy.

Figure (2): explains that all pregnant women that suffered from heartburn followed instructions related to life style modification besides, 57.2% of them used herbal therapy, 25.7% used acupressure and 17.1% used aromatherapy.

Figure (3): reveals that all pregnant women that suffered from constipation followed instructions related to life style modification besides, 47.6% of them used herbal therapy, 19% used acupressure and 33.4% used aromatherapy.

Table (3): shows that there is highly significant difference between frequency of current minor discomforts (nausea & vomiting, heartburn and constipation) at before and after intervention at (p value $0.000^{**}, 0.000^{**}, 0.001^{**}$) respectively

Table (4): demonstrates that there is highly significant difference between responses rate at before and after intervention related to (nausea & vomiting, heartburn and constipation) at (p value $0.004^{**}, 0.003^{**}, 0.002^{**}$)

Table (5): demonstrates that there was highly significant relation between measures used and relieved of minor discomfort at fourth week at p value < 0.01 .

Table (1): Distribution of the pregnant women according to their socio-demographic characteristics (n=103).

Items	No	%
Age (year):		
17- 21	18	17.6
22-26	32	40.8
27- 32	53	41.6
Mean \pm SD	28.1 \pm 6.42	
Occupation:		
Work	42	40.8
Not work	61	59.2
Educational Level:		
Primary education	2	1.9
preparatory education	31	30.1
Secondary education	42	40.8
High education	28	27.2
Marital status:		
Married	100	97.1
Divorced	3	2.9

Table (2): Distribution of the pregnant women according to their obstetrical history (N=103).

Items	No	%
Gravidity:		
Primigravida	53	51.5
Gravida Two	50	48.5
Mean \pm SD	1.61 \pm 0.54	
Parity:		
Zero	53	51.5
1	50	48.5
Mean \pm SD	0.51 \pm 0.29	
Gestational age (weeks):		
5-<8 Week	21	20.5
8- 11 Week	82	79.5
Mean \pm SD	9.43 \pm 3.88	

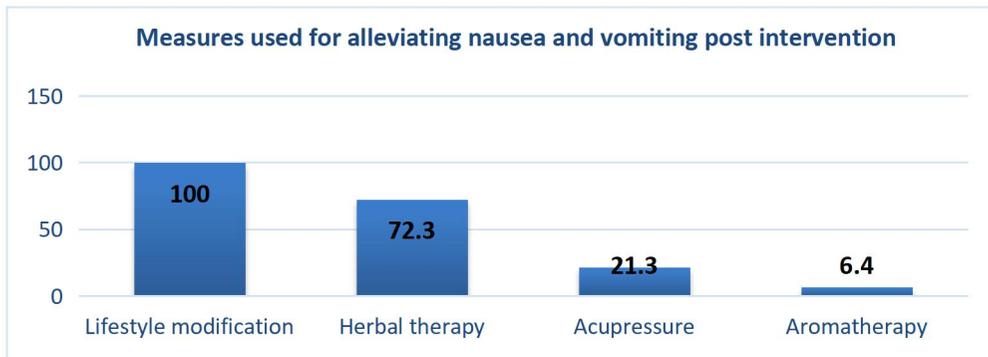
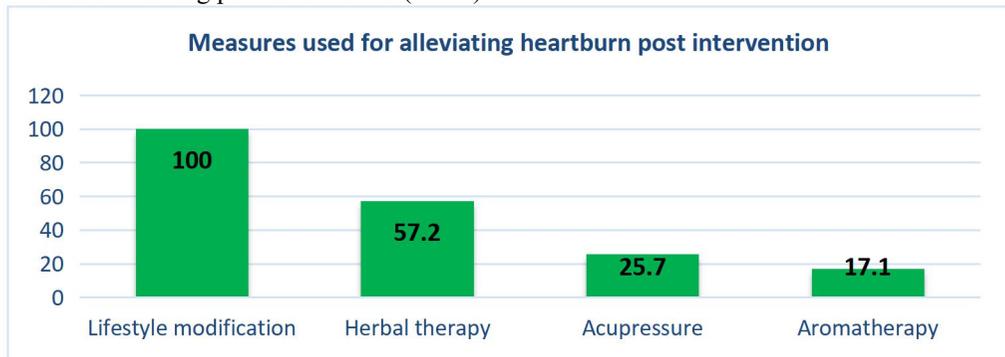


Figure (1): Distribution of pregnant women related to measures used for alleviating nausea and vomiting post intervention (N=47).



Figure(2): Distribution of pregnant women related to measures used for alleviating heartburn post intervention(N=35)

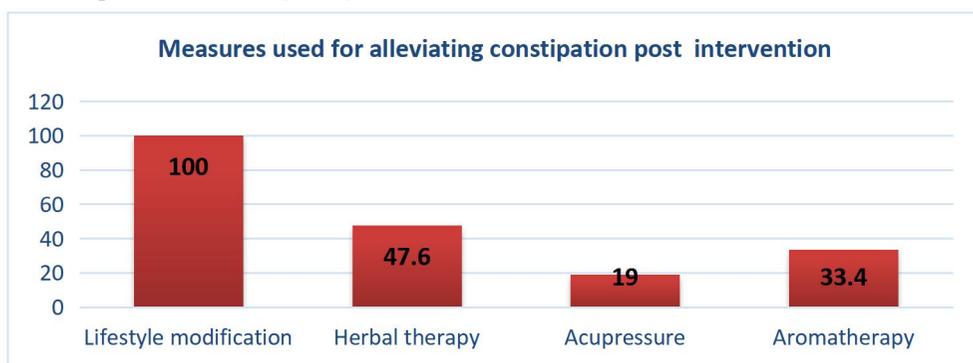


Figure (3): Distribution of pregnant women related to measures used for alleviating constipation post intervention (N=21).

Table (3): Mean scores of pregnant women before and after intervention related to frequency of current minor discomforts (N=103).

Minor discomforts	Before intervention		After Intervention				-Ftest -p value
	Mean SD	Mean SD 1 st week	Mean SD 2 nd week	Mean SD 3 rd week	Mean SD 4 th week		
Nausea & Vomiting	2.63±0.57	2.11±0.63	1.85±0.49	1.36±0.62	0.84±0.18	19.761	
Heartburn	2.71±0.46	2.20±0.41	1.79±0.53	1.18±0.39	0.86±0.17	.000** 21.440	
Constipation	2.8±0.61	2.25±0.74	1.99±0.52	1.41±0.47	0.78±0.23	.000** 17.225 .001**	

Table (4): Distribution of pregnant women suffered from current minor discomforts before and after intervention related to their response (N=103).

Items	Before intervention		After Intervention								-Friedman test -P value
	N	%	1 st week		2 nd week		3 rd week		4 th week		
			N	%	N	%	N	%	N	%	
Nausea & vomiting											
Relieved	0	0	37	78.7	43	91.5	46	97.9	47	100	12.379 .004**
Not relieved	47	100	10	21.3	4	8.5	1	2.1	0	0	
Heartburn											
Relieved	0	0	27	77.1	32	91.4	33	94.3	34	97.1	14.688 .003**
Not relieved	35	100	8	22.9	3	8.6	2	5.7	1	2.9	
Constipation											
Relieved	0	0	17	80.9	18	85.7	19	90.5	21	100	15.008
Not relieved	21	100	4	19.1	3	14.3	2	9.5	0	0	.002**

Table (5): Relation between measures used during intervention & relief of minor discomforts.

Items	Nausea & Vomiting (N=47)		Heartburn (N=34)		Constipation (N=21)		Chi square
	N	%	N	%	N	%	
Measures used							
Lifestyle modification	47	100	35	100	21	100	14.058
Herbal therapy	34	72.3	20	57.2	10	47.6	
Acupressure	10	21.3	9	25.7	4	19	<0.01**
Aromatherapy	3	6.4	6	17.1	7	33.4	

Discussion

The sample under the study suffered from common minor discomforts that happen during 1st trimester of pregnancy as (nausea and vomiting, heartburn and constipation). Pregnant women dealt with these discomforts through compliance with instructions related to lifestyle modification besides, one of the following complementary therapies (herbal, acupressure, aromatherapy) but the most preferred complementary therapy used was herbal therapy.

The present study findings were consistent with (Adane et al., 2020) who conducted 8 studies in Ethiopia to assess the use of herbal medicine and predictors among pregnant women attending antenatal care. The study showed that half of women attending antenatal care preferred use of herbal medicine and it was relatively high. The most commonly consumed herbal medicine during pregnancy was ginger. This can be justified as pregnant women usually prefer methods that are safe on pregnancy outcome and easy to use.

Regarding pregnant women response before and after the intervention, the present study demonstrates that there is highly significant difference between responses rate at before and after the intervention related to (nausea & vomiting, heartburn and constipation) at (p value 0.004**, 0.003**, 0.002**). This significance in women response rate led to positive effect in decreasing frequency of current discomforts (nausea & vomiting, heartburn and constipation) at before and after intervention at (p value 0.000**, 0.000**, 0.001**) respectively.

The present study findings agrees with (Talaat et al., 2020) who conducted a study and demonstrates a statistically significant difference between the occurrence of minor ailments at the post-intervention phase compared to the pre-intervention phase in favor of post intervention regarding (morning sickness, heartburn, constipation, gingivitis, leg cramps, backache, and dyspnea) with $p \leq 0.05$. In addition, the present study findings agrees with (Alageswari & Manju, 2019) who conducted a study to assess the knowledge and practice regarding minor ailments and concluded that teaching about minor ailments of pregnancy and its management helped the women to manage these discomforts at home by themselves effectively.

The present study findings were also supported by (Abd Elhaliemet al., 2018) who conducted a study at antenatal clinic at Benha university hospital on two hundred and eighty primipara women to evaluate the effect of self-care practice guideline on relieving minor discomfort among pregnant women and revealed that self-care practice guideline improved knowledge and self-care reported practice regarding relieving minor discomfort.

The present study findings were supported by another study conducted by (Latha & Indira, 2016) at Narayana Medical College & Hospital at Nellore, on sixty antenatal mothers to assess the Effectiveness of IEC (Information, Education & Communication) package on knowledge regarding minor ailments of pregnancy and its management among antenatal mothers and concluded that IEC package was effective in increasing the knowledge level of women regarding minor ailments of pregnancy.

These similarities in previous studies and present findings are due to the effectiveness of evidence based guide that was designed by the researcher.

As regards relation between measures used during intervention & response of pregnant women, The result of the present study demonstrates that there was highly significant relation between measures used and relief of minor discomfort at fourth week at p value <0.01.

The present study findings were in respect of (Abd Elhaliem et al., 2018) and illustrated that that minor discomforts were relieved by utilizations measures among more than half of the study sample. In addition to another study conducted by (Sharifzadeh et al., 2018) on seventy seven women to compare the effects of ginger, pyridoxine (vitamin B6), and placebo for the treatment of NVP,, and revealed that Ginger is more effective than placebo for the treatment of mild to moderate NVP and is comparable with vitamin B6.

In addition, The present study findings agree with (Rungsiprakarn et al., 2015) who conducted a study on one hundred and eighty women to assess the effectiveness and safety of interventions (pharmacological and non-pharmacological) for treating constipation in pregnancy and illustrated that women who received fiber in diet had significantly higher frequency of stools compared to no intervention.

The present study findings are also consistent with (Ahmed et al, 2012) who conducted a study on two hundred and twenty one pregnant women at outpatient antenatal clinic of Ain Shams Maternity University Hospital to study the effectiveness of peppermint on relieving

gastroesophageal reflux disease "GERD" during pregnancy and revealed a highly statistically significant difference in mean number of symptoms and mean distress score before and after using peppermint at before and after intervention which indicated marked improvement in GERD symptoms after using peppermint. This can be justified as the use of lifestyle modification measures along with use of complementary therapies are very effective in management of minor discomforts.

Conclusion

In the light of the previous study, it was concluded that there was highly significant difference between responses rate at before and after the intervention related to (nausea & vomiting, heartburn and constipation). This significance in women response rate led to positive effect in decreasing frequency of current discomforts (nausea & vomiting, heartburn and constipation). The findings of the study revealed a positive effect of evidence based guide on alleviating minor discomforts during 1st trimester of pregnancy.

Recommendations

In the light of findings of this study, the following recommendations are suggested:

- 1) Audiovisual educational programs should be developed to raise the awareness of pregnant women and her husband about Evidence based measures for alleviating minor discomforts during 1st trimester of pregnancy.

- 2) Presence of leaflet or booklet about evidence-based measures for alleviating minor discomforts during

pregnancy as a hospital protocol for guidance of nurses in application .

Further research:

1) Study the effect of Evidence based guide on alleviating minor discomforts during all trimesters of pregnancy on large number of pregnant women and involve women who can't read and write.

2) Apply comparative study between primigravida and multigravida women about effectiveness of evidence based guide on alleviating pregnancy minor discomforts .

References

- Abdulkhkim, S., AbdElhady, R., & Mohamed, A. (2018):** Utilization of self-care practice guidelines on relieving minor discomfort (ailments) among new pregnant women. *IOSR Journal of Nursing and Health Science*, 7(1), 7-15.
- Adane, F., Seyoum, G., Alamneh, Y., Abie, W., Desta, M., Sisay, B. (2020),** Herbal medicine use and predictors among pregnant women attending antenatal care in Ethiopia: a systematic review and meta-analysis. *BMC Pregnancy Childbirth*. 20 (1):157.
- Ahmed, E., Soliman, S., and Mahmoud, H. (2012):** Effect of Peppermint as One of Carminatives on Relieving Gastroesophageal Reflux Disease (GERD) During Pregnancy, *Journal of American Science, Journal of American Science*, 2012;8(4).
- Alageswari, A. & Manju, B. (2019):** Assessment of Knowledge and Expressed Practice Regarding Self-Management of Minor Ailments among Antenatal Mothers, *EC Gynaecology, India*, 8.1 : 21-28.
- American College of Obstetrics and Gynecology (ACOG), (2018):** Practice Bulletin No. 189 on NVP. *Obstet Gynecol*. 131(1): 15-30.
- Annamma, J. (2019):** Maternal and Neonatal Nursing care plan, 2nd ed, the health sciences publisher, New Delhi, London.
- Climent, N. (2018):** textbook of midwifery & gynecological nursing, 1st ed, med tech, scientific international PVT. Ltd, India
- Foxcroft, K., Callaway, L., Byrne, N. & Webster, J. (2013):** BMC, Pregnancy and Childbirth 13 (3). Available at: <https://doi.org/10.1186/1471-2393-13-3> © Foxcroft et al; licensee BioMed Central Ltd. 2013
- Latha, P. and Indira, S. (2016):** Effectiveness of IEC (Information, Education & Communication) package on knowledge regarding minor ailments of pregnancy and its management among antenatal mothers at NMCH, Nellore, A.P. *International Journal of Applied Research*: 2(10): 593-596
- Lincetto, O., Mothebesoane, A., Gomez, P., Munjanja, S. (2016):** Antenatal care. Opportunities for Africa's Newborns: practical data, policy and programmatic support for newborn care in Africa. Geneva: World Health Organization: 51–62

- Radhika, A. (2016):** A study to assess effectiveness of structured teaching programme on knowledge regarding prevention of legcramps among antenatal mothers at Maternal Child Health Center, Tirupathi. *NNJ*, 4(1): 21-23.
- Rungsiprakarn, P., Laopaiboon, M., Sangkomkarn, U., Lumbiganon, P., Pratt, J. (2015):** Interventions for treating constipation in pregnancy. *Cochrane Database Syst Rev*.(9):CD011448. Published 2015
- Sharifzadeh, F., Kashanian, M., Koochpayehzadeh, J., Rezaian, F., Sheikhsari, N., Eshraghi, N. (2018):** A comparison between the effects of ginger, pyridoxine (vitamin B6) and placebo for the treatment of the first trimester nausea and vomiting of pregnancy (NVP). *J Matern Fetal Neonatal Med.*;31(19):2509-2514. doi:10.1080/14767058.2017.1344965
- Talaat, A., Abd el-Wahab, O., Abdo, S. (2020):** Effectiveness of Self instructional Module on Knowledge and Remedial Practices Regarding Selected Minor Ailments Among Primigravida, *Evidence-Based Nursing Research* Vol. 2 No. 2
- Tharpe, N., Farly, C.& Jordan, R., (2017):** *Clinical Practice Guidelines for Midwifery & Women's Health*. 5th ed., Jones and Bartlett Learning LLC. India:84-91.
- The Ohio State University Wexner Medical Center (2017):** Mount Carmel Health System, health information translations, concerns and discomforts of pregnancy. available at:https://www.healthinfotranslations.org/pdf/Docs/ConcernsDiscomforts_Preg_ar.pdf. Accessed on May 22, 2019,
- WHO recommendations on antenatal care for a positive pregnancy experience,(2016):** WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland, available on the WHO website(<http://www.who.int>).