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Original Article

Knowledge Practice and Lifestyle among Pregnant Women regarding Nausea and Vomiting in Primary Health Care Centers in Erbil City

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ABSTRACT

Background and objectives: Nausea and vomiting during pregnancy affect pregnant women to varying degrees. Over the years, a large number of modalities have been used to deal with debilitating conditions and the health state of pregnant women. The study aimed to find the prevalence of nausea and vomiting among pregnant women in the first trimester and to study the effect of an educational program on their knowledge and practices regarding complementary and alternative medicine to reduce nausea and vomiting in the first trimester.

Methods: A quasi experimental study was conducted from January 2022 to July 2022 among pregnant women who had nausea and vomiting who attended eight primary health care centers in Erbil city. The purposive sampling method was used to select 200 pregnant women. The Rhodes index test was used to assess the rate of nausea and vomiting.

Results: The prevalence of nausea and vomiting among pregnant women in the first trimester was 68% in Erbil City. The largest proportion of the participants (46.3%) belonged to the age group 25-34 years. The median of the participants' knowledge score before the intervention was 3, while it significantly increased to 14 after the intervention ($p<0.001$). The median of their lifestyle score increased significantly from 0 before the intervention to 32 after the intervention ($p<0.001$).

Conclusion: The prevalence of nausea and vomiting among the pregnant women, their complaint about this condition, and their knowledge, practice, and lifestyle regarding nausea and vomiting before and after and experienced changed significantly for the better.

Keywords: Knowledge; Practice; Lifestyle, Nausea; Vomiting; Pregnant women.

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INTRODUCTION

During pregnancy, which is a natural event, women's body undergoes numerous changes.[1] Due to the physiological changes during pregnancy, required for fetal development, pregnant women experience various signs and symptoms.[2] Nausea and vomiting are most commonly complained about by pregnant women during the early trimester. In spite of the fact that nausea and vomiting of pregnancy (NVP) might happen any time during pregnancy, it is usually called morning sickness.[3] Pregnant women experience NVP, or morning sickness, from the 6th gestational week of pregnancy until the end of the 16th gestational week. [4,5] It is reported that 63% of pregnant women experience NVP during the 1st and 2nd trimesters of pregnancy, which is similar to NVP prevalence in early pregnancy.[6] If nausea and vomiting are not treated early, pathological problems will occur due to decreased fluid in the body which in turn leads to increased blood concentration and consequent decreased blood circulation, resulting in bad effects on the growth and development of the fetus.[7] Although pregnant women die due to NVP in rare cases, the probability is still quite high.[8] Due to maternal system changes during pregnancy, pregnant women need to get adapted both psychologically and physically.[9] Nausea and vomiting during pregnancy can only be treated by consuming drugs; however, drug consumption has unfavorable impacts on the growth and development of the fetus.[10] For this purpose, complementary medicine, particularly herbal remedies, is used all over the world. [11] Pregnant women can easily be negatively affected by the side effects of drugs; therefore, the safety of herbal therapies is particularly significant for them. Pregnancy can progress more as a result of consuming herbal supplements. Disorders caused by pregnancy, such as gastro-esophageal reflux, nausea, and vomiting, are treated by consuming herbal medicine. [12,13] As reported by the media and pregnant women, herbal use is recommended during pregnancy by pharmacists, natural or alternative medicine practitioners, and health care providers. [14,15,16] Using herbal medicines has an important role in managing both minor and major illnesses. [17] Complementary therapies, including herbal or traditional plants like ginger and peppermint oil, can be utilized to decrease nausea and vomiting during early pregnancy. [18] As pointed out by the National Center for Complementary and Alternative Medicine (NCCAM), Complementary and Alternative Medicine (CAM) is a wide domain of treatment resources that include all practices, modalities, and health systems. [19] According to the news published in the British Medical Journal in 1996, there was a remarkable increase in worldwide use of complementary medicine. [20,21] In addition, there has been a remarkable rise in the use of complementary and alternative medicine in Australia, the United States, and Europe over the past decade. [20,22] CAMs are broadly used all over the world. [23] Different diseases and conditions in various populations are nowadays treated using herbal medicine. [24] Moreover, pregnant women from different countries and with different backgrounds have been reported by numerous published studies to consume herbal medicine. [25] For a remarkable number of pregnant women, family and friends are the main sources to obtain information about the use of herbal medicine during pregnancy. [26] A significant number of pregnant women consume herbal medicine although they do not have any knowledge related to such medicine. [27] It is well documented that because of nausea and vomiting during pregnancy, the number of pregnant

women who seek medical attention, medications, and even herbal medicine is increasing. [28]To the best of our knowledge, no data exists on the consumption of herbal medicine and supplements among pregnant women in Erbil City. In this regard, the present study was conducted to find the prevalence of nausea and vomiting among pregnant women in the first trimester, and to study the effect of an educational program on their knowledge and practices regarding complementary and alternative medicine to reduce nausea and vomiting in the first trimester.

METHODS

The present study was conducted using a quasi-experimental design from January 2022 to July 2022. To estimate the prevalence of nausea and vomiting among pregnant women in the first trimester in eight primary health care centers in the Kurdistan Region. Before the start of the project, a pilot study was carried out. Epi info was used to estimate the size of the study sample for the prevalence of nausea and vomiting using this information: population size 31833, confidence interval 95%, expected frequency 85, and margin of error 5, and the sample was 200 pregnant women. Pregnant women with nausea and vomiting during their first trimester were selected as the study sample. Also, the sample size of quasi-experimental assessment of knowledge and practice of nausea and vomiting among pregnant women for this purpose was selected based on the PS program power and sample size calculation version 7.2.4.0 entering the confidence (CI), power, and proportion. The sample size was estimated to be one hundred twenty-three pregnant women for pre- post instruction. The inclusion criteria were the women's ability to participate in the data collection session, age between 18 and 40 years, healthy pregnant women, singleton pregnancy, and ability to communicate. Women with a history of infertility, those with a medical and surgical history, and those who were faced with any matter causing them to abandon the study were excluded. A questionnaire was used to collect data on the pregnant women`s demographics, including age, level of education, and occupation. Obstetric data on gravida, para, abortion, and gestational age based on the first day of the last menstrual period and first ultrasound were also gathered through the questionnaire. Another section of the questionnaire was related to dietary consumption and daily life, which consisted of a four-item scale that measured the daily routine for pregnant women during the first trimester in which the responses to the items were scored based on an ordinal scale of three points varying from always 2, sometimes 1, to never 0. [29]In addition, another data collection instrument was used: Rhodes index score was used for no nausea and vomiting to severe nausea and vomiting. This scale consisted of 8 questions asking about the daily frequency of vomiting, the amount of vomiting, nausea and retching duration and quantity, and distress for each episode of nausea, vomiting, and dry retching. The questions focused on the first day of the assessment. The practice section of the data collection instrument consisted of five aspects, including the instruction about how to use the complementary and alternative medicine, and determined to three groups. Moreover, the knowledge items included knowledge about nausea and vomiting, the source of relevant information, the source of hearing about complementary and alternative medicine, harm to the fetus, and how to decrease nausea and vomiting during pregnancy. The validity of this scale has been

calculated through Cronbach's alpha (α=0.8).[30]After the pregnant women were provided with information about the aim of the study, they filled out consent forms. The approval of the study was obtained from the Ethics Committee of Hawler Medical University No. 123 (dated 7-10-2021) and the authorities of the managements of the health and primary health care centers. In addition, all pregnant women were given a copy of the education resources and were required to participate in the program. SPSS (version 25.0) was employed to analyze the collected data. For this purpose, descriptive and inferential statistics were utilized to calculate frequency, percentage, mean, median, and standard deviation. In addition, the Wilcoxon signed- rank test, Fisher's exact test, and chi-square test were utilized. A P-value of less than or equal to 0.05 was considered statistically significant.

RESULTS

As revealed by the results of the present study, the prevalence of nausea and vomiting among pregnant women during the first trimester was 68 %. According to the results of the study regarding the socio-demographic characteristics of all pregnant women who participated in this study, the largest proportion (46.3%) of the sample belonged to the age group 25-34 years. Also, only around one-third (29.3%) of the sample were college graduates, and 30.9% were graduates of primary schools. Moreover, the majority (77.2%) of the women were unemployed. In addition, the prevalence of obesity was 13.8% (Table 1).

The results also indicated that the highest percentage (58.5 %) of the women was multigravida and 43.9% were nulliparous. More than one quarter (26.8%) of the women had a history of abortion. Approximately two-thirds (64.2%) were in their 6-8 weeks of gestational age (Table 2).

Table 1. Basic characteristics of the study

Basic characteristics	No.	(%)
Age (years)		
< 25	44	(35.8)
25-34	57	(46.3)
≥ 35	22	(17.9)
Education level		
Illiterate	3	(2.4)
Primary school	38	(30.9)
Secondary school	26	(21.1)
Institute	20	(16.3)
College or higher	36	(29.3)
Occupation		
Student	8	(6.5)
Unemployed	95	(77.2)
Skilled manual workers	20	(16.3)
BMI (Kg/m^2)		
<25	52	(42.3)
25-29	54	(43.9)
≥30	17	(13.8)

Table 2: Obstetric history of the study

Obstetric history	No.	(%)
Gravidity		
Primigravida	42	(34.1)
Multigravida	72	(58.5)
Grand multigravida	9	(7.3)
Parity		
Nulliparous	54	(43.9)
Primiparous	34	(27.6)
Multiparous	34	(27.6)
Grand multiparous	1	(0.8)
Abortion		
No	90	(73.2)
Yes	33	(26.8)
Gestational age (weeks)		
6-8	79	(64.2)
9-12	44	(35.8)
Total	123	(100)

Table 3 shows that the median of the knowledge score was 3, while it increased significantly to 14 after (P-value<0.001). The median lifestyle score increased significantly from 0 before to 32 after the program (P-value <0.001). The median practice score of pyridoxine, capsule ginger , and acupressure groups increased significantly from 0 to 5 (in the pyridoxine and capsule ginger groups) and from 0 to 10 in the acupressure group (P-value <0.001). It is worth mentioning that 5 and 10 scores are the maximum scores of the mentioned scales (Table 3).

Table 3: Scores of knowledge, lifestyle and practice before and after the educational program.

	Pre-scores		Post-scores		
Scores of:	**SD**	**Median**	**SD**	**Median**	**P-value***
Knowledge	0.95	3.00	0.00	14.00	< 0.001
Life-style	0.13	0.00	1.61	32.00	< 0.001
Practice (pyridoxine group)	0.00	0.00	0.00	5.00	< 0.001
Practice (capsule Ginger group)	0.00	0.00	0.00	5.00	< 0.001
Practice (Acupressure)	0.00	0.00	0.00	10.00	< 0.001

*By Wilcoxon-signed rank test. The results 0 of each Median and SD Based on the some questions just during first trimester that author created not related whole lifestyle also practices its related to some specific questions

As indicated in Table 4, around 51.2% of the women in the pyridoxine and capsule ginger groups had felt nausea 4-7 times during the previous day, while 26.8% in the acupressure group had (p=0.036). It was also seen that all of the women remained nauseated for 1-3 hours during the previous day. The majority (94.3%) of the women of the whole sample had a history of vomiting 1-3 times during the previous 24 hours, and the groups were not significantly different in this regard (P-value <0.697). Around one-third (34.1%) of the women had a history of retching or dry heaves without bringing anything up; however, the groups were not significantly different in this regard (P-value <0.176). The estimated amount of throwing up was small in the majority (77.2%) of the women, and the groups were not significantly different in this regard (P-value <0.440). It was also observed that 51.2% of the women felt great-severe distress due to retching, nausea, and vomiting; however, the differences between the groups were not significant for these three mentioned items (P-value <0.065) (Table 4).

Table 4: Assessment of pregnancy unique quantification of emesis Rhodes index by the program method at day zero.

	Pyridoxine	Ginger capsule	Acupressure	Total	P-value
In the past 24 hours, how many times you felt nauseated?					
1-3 times	20 (48.8)	20 (48.8)	30 (73.2)	70 (56.9)	
4-7 times	21 (51.2)	21 (51.2)	11 (26.8)	53 (43.1)	0.036**
In the past 24 hours, how many hours you remained nauseated or sick?					
1-3 hours	41 (100.0)	41 (100.0)	41 (100.0)	123 (100.0)	N/A
In the past 24 hours, how many times you have thrown up?					
1-3 times	40 (97.6)	38 (92.7)	38 (92.7)	116 (94.3)	
4-7 times	1 (2.4)	3 (7.3)	3 (7.3)	7 (5.7)	0.697*
In the past 24 hours, how many times do have period of retching or dry heaves without bringing anything up?					
1-3 times	23 (56.1)	27 (65.9)	31 (75.6)	81 (65.9)	
4-7 times	18 (43.9)	14 (34.1)	10 (24.4)	42 (34.1)	0.176**
In the past 24 hours, the estimated amount of threw up was?					
Small	34 (82.9)	29 (70.7)	32 (78.0)	95 (77.2)	
Moderate	7 (17.1)	10 (24.4)	9 (22.0)	26 (21.1)	
Large	0 (0.0)	2 (4.9)	0 (0.0)	2 (1.6)	0.440*
In the past 24 hours, did you feel distress from retching or dry heaves?					
Mild-moderate	22 (53.7)	14 (34.1)	24 (58.5)	60 (48.8)	
Great-severe	19 (46.3)	27 (65.9)	17 (41.5)	63 (51.2)	0.065**
In the past 24 hours, did you feel distress from vomiting or throwing up?					
Mild-moderate	22 (53.7)	14 (34.1)	24 (58.5)	60 (48.8)	
Great-severe	19 (46.3)	27 (65.9)	17 (41.5)	63 (51.2)	0.065**
In the past 24 hours, did you feel distress from nausea/sickness in your stomach?					
Mild-moderate	22 (53.7)	14 (34.1)	24 (58.5)	60 (48.8)	
Great-severe	19 (46.3)	27 (65.9)	17 (41.5)	63 (51.2)	0.065**
Total	41 (100)	41 (100)	41 (100)	123 (100)	

**By Chi square test. *By Fisher's exact test. N/A: Not applicable.

DISCUSSION

Nausea and vomiting are a common complaint during pregnancy, and awareness of this discomfort and subsequent adherence to the management may alleviate the burden of this complaint. This is the first study conducted in Erbil City, Kurdistan Region, Iraq aimed at assessing the prevalence of nausea and vomiting among pregnant women during the first trimester, which was 68 %. Before the implementation of the program, the pregnant women's scores of knowledge, practice, and lifestyle regarding complementary and alternative medicine were low. As emphasized by the results, the pregnant women did not have the habit of consuming supplements during pregnancy. However, these scores increased significantly after the program. After their participation in the program, there was a remarkable increase in the pregnant women's use of complementary medicine and alternative medicine during their first trimester. Unlike this finding, the results of another study showed that the rate of using complementary among the pregnant women was high. As indicated by the results of that study, 97.5% of the participating women were previously aware. This high score of knowledge about complementary was related to the role of the media, friends, relatives, and family. [31] Moreover, these findings of the present study are not in agreement with those of some studies conducted in the USA, which reported high consumption of complementary among middle-aged groups. [32] Discrepancy between the findings of the current study and other studies can be related to differences between the participants regarding their occupational, educational, and cultural standards. According to the results of the current study, women with lower educational levels had higher scores for using complementary medicine. This finding is in line with those of another study, which reported that 88.9% of those who could read and write consumed complementary.[31]However, these findings are not in agreement with those of a study carried out in Australia, in which women with higher educational levels consumed complementary more. Such discrepancy might be due to the fact that the practices followed in Australia differ from those of other countries. [33]A large number of pregnant women consume herbs quite frequently; therefore, they need to be provided with a suitable source of relevant information. [34] To the best of our knowledge, the present study is the first investigation which has had a specific focus on the consumption of herbal medicine and supplements during pregnancy in Erbil City, Kurdistan Region of Iraq. The results of the current study demonstrated that limited number of the pregnant women used herbal supplements. This finding is in line with those of the study carried out by Zaki and Albarraq (2014), ho reported that only 4.6% of the pregnant women used herbal supplements during their pregnancy.[35] The pregnant women who participated in the present study mentioned that they needed complementary medicine practices. This finding is in line with those reported in the study by Al-Faris (2008), in which 86.9% of the women outlined their need for practices. [36] In an epidemiological study of herbal medicines carried out in Italy, 1,044 randomly selected women were studied. The results showed that, 47.0% of them used at least one herbal product during pregnancy.[37]Such differences in the women's knowledge, experience, and practice of using complementary medicine can be attributed to discrepancies in the advancement of health systems across the countries and scarcity in the availability and access of medical services. [38]

CONCLUSION

As shown by the results of the current study, a remarkable number of pregnant women were consuming and including supplement products and herbal medicines as a part of their maternity care. It was also concluded that a large number of the participating women could have access to sufficient knowledge about consuming complementary medicine. These findings can be utilized by policymakers and health professionals as a reference for the use of in previous mention during pregnancy.

CONFLICT OF INTEREST

The authors report no conflicts of interest or sources of financial support.

REFERENCES

[1] SuryaningrumKC ,Titisari I , Mediawati M. HubunganAntara Status GravidadanUsiaIbuDenganKejadian Emesis Gravidarum. *JurnalIlmuKesehatan.* 2018; 7(2): 12–20 doi.org/10.32831/jik.v7i2.213.

[2] Kjeldgaard HK, VikanesA, Benth JS, Junge C, Garthus-Niegel S, Eberhard-Gran M.The association between the degree of nausea in pregnancy and subsequent posttraumatic stress.*ArchivesWomens Mental Health*. 2019; 22(4):493-501.doi.org/10.1007/s00737-018-0909.

[3] Fatwa T. PENGARUH REBUSAN JAHE TERHADAP KELUHAN MUAL MUNTAH IBU HAMIL. *Jurnal Medika Hutama*.2020; 2(1): 48–59. https://jurnalmedikahutama.com/index.php/JMH/article/view/77.

[4] Wahyuningsih S. Buku Ajar KeperawatanMaternitas .*Bondowoso* .2019 ; 188: doi :978-602-51757-9-4

[5] RamdhaniIP,AyudiaF.PengaruhPemberianMinumanJahe (Zingiber Officinale Var. Rubrum) TerhadapPenurunan Emesis Gravidarum Trimester Pertama. *JurnalIlmuKesehatan.* 2019;3(2): 97. doi.org/10.33757/jik.v3i2.231

[6] Kallen B, Lundberg G, Aberg A. Relationship between vitamin use, smoking and nausea and vomiting of pregnanacy. *ActaObstetriciaetGynecologicaScandinavica* .2003;82:916-920.:doi:10.1034/j.1600-0412.2003.00307

[7] Wulandari DA , Kustriyanti D , Aisyah R. MinumanJaheHangatUntukMengurangi Emesis GravidarumPadaIbuHamil Di Puskesmas-NalumsariJepara.*JournalSMARTKebidanan*.2019; 6(1): 42.https://doi.org/10.34310/sjkb.v6i1.246.

[8] World Health Organization. Hyperemesis gravidarum: current perspectives. *International Journal of Women's Health*. 2014 :6: 719–725.doi: 10.2147/IJWH.S37685.

[9] Rahmawati NA, Rosyidah T, Marharani A. HubunganPelaksanaanSenamHamilDengan-KetidaknyamananIbuHamil Trimester Iii Di BidanPraktekMandiriSupadmi, KundenBulu, Sukoharjo. *InvolusiJornalIlmuKebidanan.* 2016; 7(12):42-50.: http://dx.doi.org/10.32497bangunrekaprima.v5i1.1404.

[10] Viljoen E, VisserJ ,Koen N, Musekiwa A. A systematic review and meta-analysis of the effect our and safety of ginger in the treatment of pregnancy-associated nausea and vomiting. *Nutritional Journal* .2014; (19):13-20.doi: 10.1186/1475-2891-13-20.

[11] Dabaghian FH .Knowledge of pregnant women about the efficacy and safety of herbal medicine and their practice during pregnancy .*Complementary Medicine Journal*.2012;2(3): 246-256. http://cmja.arakmu.ac.ir/article-1-149-en.html

[12] Hemminki E, Mantyranta T, Malin M, Koponen P. A survey on the use of alternative drugs during pregnancy. *Scand Journal Social Medicine.* 1991; 19(3): 199 - 204.doi: 10.1177/140349489101900310.

[13] Forster D, Denning A, Wills G, Bolger M , McCarthy E. Herbal medicine use during pregnancy in a group of Australian women. *BMC Pregnancy Childbirth*.2006; 6: 21 30.doi:10.1186/1471-2393-6-21.

[14] Hepner DL, Harnett M, Segal S, Camann W, Bader A, Tsen L. Herbal use in parturients. An *International Journal of Obstetrics and Gynecology.* 2002;94:690–3.doi: 10.1097/00000539-200203000-00039

[15] Maats F, Crowther C. Patterns of vitamin, mineral and herbal supplement use prior to and during pregnancy. *Australian and NewZeland Journal of Obstetetrics and Gynecology* .2002;42:4946.doi.org/10.1177/0310057X19845786

[16] Nordeng H, Havnen G. Use of herbal drugs in pregnancy: a survey among 400 Norwegian women. *Pharmacoepidemioly*& Drug Safety.2004;13:371–80. doi:10.1002/pds.945

[17] Barnes J. Quality. Efficacy and safety of complementary medicines: fashions, facts and the future. Part1. Regulation and quality.*British Journal of Clinical Pharmacology* l. 2003;55(3):226–33.doi: 10.1046/j.1365-2125.2003.01810.x

[18] Somoyani, Ni Ketut. Literature Review: Terapi Komplementer Untuk Mengurangi Mual Muntah Pada Masa Kehamilan. Journal Ilmiah Kebidanan. *The Journal Of Midwifery*.2020; 8(1):10–17. doi.org/10.33992/jik.v8i1.1193

[19] National Center for Complementary and Alternative Medicine (NCCAM).: http://nccam.nih.gov/.

[20] Goldbeck-Wood S, Dally M. Complementary medicine is booming worldwide. *BMJ* 2007;313:131–3. doi:10.1093/ecam/nen031

[21] World Health Organization. Fact Sheet No 134: *Traditional Medicine*. 2013.:http://www.who.int/mediacentre/factsheets/fs134/en/index.html.

[22] Forster DA, Denning A, Wills G, Bolger M, McCarthy E. Herbal medicine use during pregnancy in a group of Australian women. *BMC Pregnancy Childbirth* .2006;19:21. doi: 10.1186/1471-2393-6-21

[23] Posadzki P, Watson LK, AlotaibiA,Ernst E. . Prevalence of use of complementary and alternative medicine (CAM) by patients/consumers in the UK: systematic review of surveys.*ClinicalMedecine.* 2013;13 (2): 126–131. doi: 10.7861/clinmedicine.13-2-126

[24] Yang PR, Shih WT , Chu YH, Chen PC , Wu CY .Frequency and co-prescription pattern of Chinese herbal products for hypertension in Taiwan: a Cohort study. *BMC Complementary and Alternative Medecine*. 2015;15 (1):1: doi.org/10.1186/s12906-015-0690-8

[25] Holst L,Wright D , NordengH, HaavikS. Use of herbal preparations during pregnancy: focus group discussion among expectant mothers attending a hospital antenatal clinic in Norwich UK. *Complementary Therapy of Clinical prectice. Pract.*2009;15 (4): 225–229.doi: 10.1016/j.ctcp.2009.04.001.

[26] John LJ, ShantakumariN.Herbal medicines use during pregnancy: a review from the Middle East. *Oman Medical Journal*. 2015;30 (4): 229.doi:10.5001/omj.2015.48

[27] NordengH ,Havnen GC. Use of herbal drugs in pregnancy: a survey among 400 Norwegian women. *Pharmacoepidemioly* &Drug Safety. 2004; 13(6): 371–380. doi:10.1002/pds.945

[28] Close C, SinclairM, LiddleSD, Madden E , McCullough J E , Hughes C .A systematic review investigating the effectiveness of Complementary and Alternative Medicine (CAM) for the management of low back and/or pelvic pain (LBPP) in pregnancy. *Journal of Advance Nursing research.*2014; 70 (8): 1702–1716. doi:10.1111/jan.12360

[29] Crozier SR, Inskip HM, Godfrey KM, Cooper C,RobinsonSM. Nausea and vomiting in early pregnancy: Effects on food intake and diet quality .*Maternal and Child Nutrition*. 2017 ; 13(4): 123-.89. doi: 10.1111/mcn.12389

[30] Pakniat H, Memarzadeh MR, Azh N, Mafi M, Ranjkesh F. Comparison of the effect of chamomile, Ginger and vitamin B6 on treatment of nausea and vomiting in pregnancy: a randomized clinical trial.*The Iranian Journal of Obstetrics, Gynecology and Infertility* 2018;21(8):47-54. doi: 10.22038/IJOGI.2018.11969

[31] Elolemy AT, AlBedahAM. Public Knowledge, Attitude and Practice of Complementary and Alternative Medicine in Riyadh Region, Saudi Arabia.*Oman Medical Journal*.2012;(27) 1: 20-26. Available from :Available from :doi 10. 5001/omj.2012.04

[32] Mohamed H, Abdin J. "Knowledge, attitude and practice of complementary and alternative medicine (CAM) among pregnant women: a preliminary survey in Qatar." *Middle East Journal of Family Medicine.*2010;(7)10:5–14.doi: 10.1155/2021/8829313

[33] Ni H, Simile C, Hardy AM. Utilization of complementary and alternative medicine by United States adults: results from the 1999 national health interview survey. *Medical Care* 2002;40(4):353-358.doi:10.1097/00005650-200204000-00011

[34] Hashem FD , Abdollahi MF, ShojaeiA,Kianbakht S (Ph.D.)4, Zafarghandi N, Goushegir A. Use and Attitude on Herbal Medicine in a Group of Pregnant Women in Tehran. *Journal of Medicinal Plants*. 2012; 41(11): 22-33. doi: 20.1001.1.2717204.2012.11.41.3.9

[35] Zaki NM, Albarraq AA. Use, attitudes and knowledge of medications among pregnant women: A Saudi study. *Saudi Pharmaceutical journal.* 2014; 22 (5):419–428. doi:10.1016/j.jsps.2013.09.001

[36] Zaffani S, Cuzzolin L, Benoni G. Herbal products: behaviors and beliefs among Italian women. *Pharmacoepidemioly*& Drug Safety. 2006; 15: 354-9.doi:10.1002/pds.1190

[37] Ni H, Simile C, Hardy AM. Utilization of complementary and alternative medicine by United States adults: results from the 1999Na-tional health Interview Survey. *Medical care.*2002; 40:353-358. doi:10.1097/00005650-200204000-00011.

[38] Al-Faris EA,Al-RowaisN , Mohamed AG ,Al-RukbanM O ,Al-KurdiA, Al-Noor et al. Prevalence and pattern of alternative medicine use: the results of a household survey. *Annals of Saudi Medecine*. 2008;28 (1):4-10. doi:10.5144/0256-4947.2008.