

Strategies Used by Women to Alleviate Heartburn during Pregnancy

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Abstract: Heartburn is a common symptom in pregnancy affecting up to 80% of women in the third trimester. A range of interventions have been used to relieve symptoms including advice on diet and lifestyle, antacids, antihistamines, and proton pump inhibitors. The safety and effectiveness of these interventions to relieve heartburn in pregnancy have not been established.

Aim: Explore the strategies used by pregnant women to alleviate heartburn during pregnancy. We would include studies examining single interventions, multiple interventions, or comparing different interventions.

Design: An exploratory descriptive design comprising 302 pregnant women recruited from maternity clinics of all medical health centers in Port-Said City.

Findings: The study revealed that the majority of the participants complain of heart burn during pregnancy. strategies were used by pregnant women to alleviate heartburn during pregnancy including non-pharmacological measures such as (diet and lifestyle changes), pharmacological measures such as antacids. There is no significant association between participants' demographic characteristics, obstetrical history and strategies to alleviating heart burn.

Conclusions and recommendations: The study concluded that the participants had unsatisfactory level of practices about the measures to alleviate heart burn during pregnancy, there is a crucial need of health educations for safety information about these strategies by maternity nurses as a routine during antenatal care. Obstetrician and maternity nurses should encourage pregnant women to seek help from care providers, and continue to assess heartburn and the strategies used to manage heartburn during pregnancy.

Keywords: Strategies; Heartburn; pregnancy.

I. Introduction

Heartburn is a common symptom in pregnancy affecting more than two-thirds of women. ⁽¹⁾Although serious complications are rare, symptoms may be frequent, severe and distressing. Developing a better understanding of how women manage these discomforts during pregnancy is a clear need as some women use home remedies that may have potential side effects for the mother and fetus. Obstetric nurse /midwife plays a crucial role in promoting an awareness of the public health issues for the pregnant women and her family, as well as helping for the pregnant women and her family, to recognize abnormal signs and symptoms of pregnancy, and where to seek medical assistance. ⁽²⁾Research on the management of heartburn during pregnancy shows that the challenge of treatment of heartburn was the potential teratogenicity of common treatments such as ant reflux medications ⁽¹⁾. A range of interventions have been used to relieve the symptoms of heartburn pregnancy. These include advice on diet and lifestyle, antacids, antihistamines and proton pump inhibitors. Studies on the safety and effectiveness of these interventions are limited. The available evidence is inconclusive regarding the overall effectiveness of these interventions. ⁽³⁾Lifestyle modifications have been found to be key for treating mild symptoms. These included smaller meals, not eating late at night, elevation of the head of the bed and avoiding foods causing heartburn. ⁽¹⁾Medications are usually used for treating more troubling symptoms. ⁽⁴⁾Most of these medications were not tested in randomized controlled studies in pregnant women for ethical reasons ⁽¹⁾. The study was designed to explore strategies used by Egyptian women to manage heartburn symptoms, to identify differences in the strategies chosen by women with different demographic characteristics, and to describe the usefulness of strategies that women chose were in alleviating their heartburn.

Significant of the study

Limited research are available in Egypt that reports on the strategies used among women to alleviate heartburn during pregnancy. there is a need to assess the magnitude of this phenomena in our community with investigation to effectiveness of these practices to alleviate it.

II. Methodology

II.1 Research design

An exploratory descriptive study design was used to evaluate the current research problem.

II.2. Research setting

The study was conducted at all medical health centers in Port Said city, the total number was 15 medical health centers. These centers are community health resources that provide reproductive health services (antenatal & postnatal care), as well as they open six days weekly from 8.00 a.m. to 2.00 p.m.; where the services provided are free of charge.

II.3. Research population and sampling

A purposive "non-probability" sample, consisting of all pregnant women (302) who attend antenatal clinics for pregnancy follow up at third trimester of pregnancy between the period of December 2013 to March 2014. Pregnant women who developed medical health problems during the course of the study and Medical/or paramedical professionals also are excluded.

II.4. Data collection

After an extensive review of relevant literature and previous studies, a structured interview questionnaire was developed (Arabic language) by the researchers to collect the necessary information. The content validity was tested by five experts in the nursing field. The questionnaire included the following: demographic characteristics (age, education, occupation, family income, family size, etc.). Obstetrical history (gravidity, parity, number of living children, etc.). Questions related to woman's practices to alleviate heartburn during pregnancy including pharmacological and non pharmacological.

Scoring system:

For the practice items, a correct was scored 1 and the incorrect response was zero. For each area of practice the score of the items were summed up and the total divided by the number of the items giving the mean score for the part. These scores were converted into a percent score and standard deviation were computed. Practice was considered satisfactory if the percent score was 50% or more and unsatisfactory if less than 50%. The questionnaire was tested with 30 pregnant women at assessing applicability and clarity of the items. Minor necessary changes were done mainly in the form of rephrasing some sentences and changing some terms. The time of completing the questionnaire was 20-25 minutes.

II.5. Field work

Pregnant women were chosen according to the previously mentioned criteria. The aim of the study was explained to each of them to gain her trust. Data collected via face-to-face interview from December 2013 to March 2014. The medical health centers visits were done two days/week from 9.00 a.m. to 2.00 p.m. The questionnaire was reviewed immediately after data collection to ensure completeness.

II.6. Ethical and administrative considerations

A formal letter from the Dean of the Faculty of Nursing, Port Said University was submitted to the Health Directors of the previously mentioned settings in order to get permission for carrying out the study in the selected centers. All women joined the study voluntarily and an informed verbal consent was taken from each participant. Respondents were assured about anonymity and confidentiality of information to ensure honest response and no woman refused to participate in the study.

II.7. Procedure for data analysis

The collected quantitative data were coded, entered, and analyzed using the Statistical Package for Social Science (SPSS) program, version 11.0.

III. Results

Table (1): Distribution of the study sample according to demographic characteristics (n=302).

Characteristics	Frequency(n=302)	Percent
Age (years)		
<20	7	2.3
20 - <25	82	27.2
25 - <30	122	40.4
30+	91	30.1
Mean ±SD	27.42 ± 4.91	
Educational level		
Illiterate	12	4.0
Read and write	4	1.3
Primary/preparatory	27	8.9
Secondary	155	51.3
University/ Postgraduate	104	34.4
Job status		
Housewife	238	78.8
Working	64	21.2
Family size		
1 – 3	205	67.9
4 – 6	95	31.5
7+	2	0.7
Mean ±SD	4 ± 2.16	
Monthly family income		
≥1000 LE	134	44.4
>1000 LE	168	55.6
Mean ±SD	990±387.94	

Table (1) describes the demographic characteristics of the study sample. It was observed that the highest percentage of the study sample's ages (40.4%) was of age group 25 - <30. Slightly more than half of the women (51.3%) were graduates from secondary school, while only 4% of them were illiterate. Regarding to the job status, the majority of the study sample (78.8%) were housewife. Concerning monthly family income, more than half of the study sample's (55.6%) their family income was more than 1000 LE.

Table (2): Distribution of the study sample according to their obstetrical history(n=302).

item	Frequency(n=302)	Percent	Mean ± SD
Gravidity			
Primigravida	102	33.8	1.42 ± 1.50
1 – 3	174	57.6	
≥4	26	8.6	
Abortions			
None	245	81.1	0.30 ± 0.81
1 – 3	54	17.9	
≥4	3	1.0	
Parity			
Not applicable	116	38.4	1.12 ± 1.14
1 – 3	177	58.6	
≥4	9	3.0	

Table (2) shows that slightly more than half of women (57.6%) were gravida 1-3 times, while 33.8 % of them were nulligravida. On the other hand, slightly less than two third of them (58.6%) delivered 1-3 times and 38.4% were nulliparous. Regarding abortion, more than three fourth of the women (81.1%) had no abortion.



Fig. (1) Distribution of the study sample according to their complaint of heartburning. Fig. 1 shows that most the sample (83%) complain of heartburn during third trimester of pregnancy.

Table (3) Categories of strategies used by women to alleviate heartburn during pregnancy (n = 252).

Strategies	Frequency(n = 252)	Percent
-Pharmacological strategies only	143	56.7
-None pharmacological strategies only	105	41.7
-Both Pharmacological and None pharmacological strategies	4	1.6

Regarding Strategies used by women to alleviate heartburn during pregnancy table (3) revealed that more than half percent of the studied group used Pharmacological strategies while Both Pharmacological and None pharmacological strategies were used by only 1.6%.

Table (4): Distribution of the study sample according to their practice to alleviate heartburn during pregnancy and it effectiveness (n = 252)

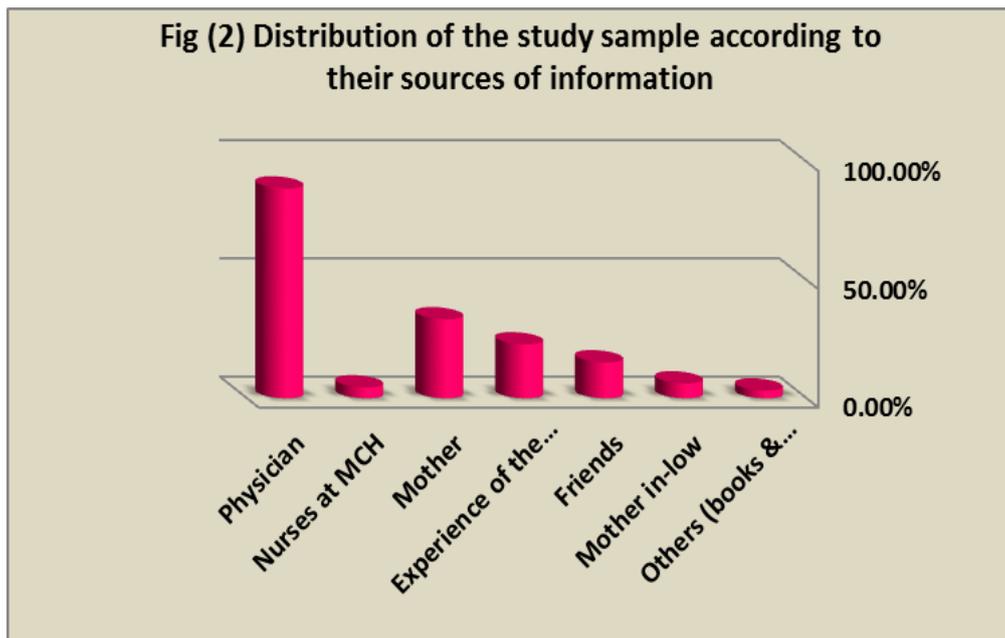
Practices	No	%	Effectiveness					
			Fully improved		Partially improved		Not improved	
			No	%	No	%	No	%
Drink boiled herbal	36	14.3	9	25.0	20	55.6	7	19.4
Drink cold milk	127	50.4	43	33.9	45	35.4	39	30.7
Eat yogurt	111	44.0	37	33.3	45	40.5	29	26.1
Drink soda	43	17.1	14	32.6	24	55.8	5	11.6
Take medication without prescription	143	56.7	115	80.4	16	11.2	12	8.4
Avoid spicy foods	46	18.3	14	30.4	28	60.9	4	8.7
Decrease meals amount.	43	17.1	13	30.2	29	67.4	1	2.3
Sit for an hour after eating	39	15.5	12	30.8	27	69.2	0	0.0
Stop eating two or three hours before bedtime	49	19.4	17	34.7	31	10.3	1	2.0
Chewing Gum	24	9.5	3	12.5	20	83.3	1	4.2
Sleep on semi setting position	30	11.9	13	43.3	16	53.3	1	3.3
A deep breath and swallowing saliva.	35	13.9	4	11.4	27	77.1	4	11.5
Frequently drink little of water	44	17.5	11	25.0	30	68.2	3	6.8

Table (4) points that effectiveness of various types of practices to alleviate heartburn during pregnancy more than half of the pregnant women success of avoid spicy foods and sleep in semi setting position in alleviating heart burn . Thus also the heartburn was alleviated partially in about one third of women who practices drink cold milk, eat yogurt ,stop eating two or three hours before bedtime and fully improved in about one quadrant of the women (25%from those frequently drink little of water

Table (5): level of practices used by study sample to alleviate Heartburn during pregnancy (n = 252).

level of practices	Frequency(n = 252)	Percent
-Unsatisfactory (<50%)	210	83.3
-Satisfactory (≥50%)	42	13.9

Table 5 indicated that 83.3% of the studied group had unsatisfactory practices to alleviate heartburn during pregnancy, while small percentage of them (13.9%) had satisfactory level of



Concerning the sources of information about practices to relieve heart burn of third trimester figure 2 showed that mother and mother in-low, were the sources of information for 33.4%, 6.3% of the study sample respectively, while physician was the most common source of information accounted for 88.7% .while nurses counted for 4.6%.

Table (6): Relationship between level of practices used to alleviate heartburn during pregnancy and demographic characteristics of the studied sample (n = 252).

Items	level of practices				Test of sig.	p
	Unsatisfactory (n = 210)		Satisfactory (n = 42)			
	No.	%	No.	%		
Educational level.						
Illiterate	9	4.3	0	0.0	MC	0.279
Read and write	3	1.4	0	0.0		
Primary/preparatory	16	7.6	4	9.5		
Secondary	109	51.9	17	40.5		
University/ Postgraduate	73	34.8	21	50.0		
Job status						
Housewife	167	79.5	31	73.8	$\chi^2 = 0.679$	0.410
Working	43	20.5	11	26.2		
monthly Family income						0.957
≥1000 LE	94	44.8	18	42.8	$\chi^2 = 0.088$	
<1000 LE	116	55.2	24	57.1		

Table (6) shows the relationship between study sample's practices regarding management of heartburning and demographic characteristics. It was found that practices of the study sample to alleviate heartburn, had no statistical significance in relation to demographic characteristics.

Table (7): Relationship between level of practices of the study sample to alleviate heartburn during pregnancy and Obstetrical history (n = 252)

Items	Level of practices				Test of sig.	p
	Unsatisfactory (n = 210)		Satisfactory (n = 42)			
	No.	%	No.	%		
Number of gravidity						
None	68	32.4	13	31.0	$\chi^2 = 0.060$	0.970
1 – 3	124	59.0	25	59.5		
≥4	18	8.6	4	9.5		
Number of parity						
None	78	37.1	16	38.1	$\chi^2 = 2.701$	0.259
1 – 3	127	60.5	23	54.8		
≥4	5	2.4	3	7.1		
Number of abortion						
None	172	81.9	31	73.8	MC	0.310
1 – 3	35	16.7	11	26.2		
≥4	3	1.4	0	0.0		

p: p value for comparing between the two studied group, MC: Monte Carlo test FE: Fisher Exact test χ^2 : Chi square test*: Statistically significant at $p \leq 0.05$

Table (7) shows the relationship between study sample's practices to alleviate heartburning and obstetrical history. There is no statistical significance was found.

Table (8): Relationship between level of practices of the study sample to alleviate heartburn during pregnancy and their sources of information (n = 252)

Items	Level of practices				Test of sig.	p
	Unsatisfactory (n = 210)		Satisfactory (n = 42)			
	No.	%	No.	%		
Source of information						
Mother	66	31.9	22	52.4	$\chi^2 = 6.761^*$	0.009*
Nurses at P.H.C centers	9	4.3	1	2.4	FE	1.000
Experience of the pregnant mother	52	25.1	3	7.1	$\chi^2 = 6.368^*$	0.012*
Friend	35	16.9	0	0.0	$\chi^2 = 8.129^*$	0.004*
Mother in-low physician	16	7.7	2	4.8	FE	0.746
	183	88.4	42	100.0	FE	0.011*
Others	3	1.4	5	11.9	FE	0.004*

table(8) was found that, statistical significance in relation to the level of practices used by the pregnant women to alleviate heartburn and all sources of information.

IV. Discussion

Heartburn is a common symptom in pregnancy and can be very uncomfortable that affect food intake and appetite, daily routine and even sleep. Heartburn during pregnancy lead to difficulties for women, and health-care providers are challenged in finding the best strategies to assist pregnant women to alleviate these discomforts. ⁽⁵⁾

In the present study out of 302 pregnant mothers 83.4% of them suffering from heartburn during third trimester, this complains is relatively high percentage. This is agreeing with the results of an exploratory descriptive study conducted by Khresheh 2011⁽⁶⁾ on 235 Jordanian pregnant women that, 91% of them were experiencing heartburn during pregnancy. While our finding was higher in comparison to study conducted in Jordan and in Brazil, which found that, heartburn occurred in 68.5% and 63% of the pregnant mothers ^(7,8) On the other hand other study found that, in most pregnant women, heartburn began in the first trimester and disappeared during the second and third trimester. ⁽⁹⁾

The study outlined the strategies used by the pregnant women to alleviate heartburn which include pharmacological, non pharmacological and/or both of them. Some strategies used by these women were similar to strategies suggested in the study conducted by Khresheh 2011 among Jordanian women. ⁽⁶⁾

Lifestyle modification is the key for alleviating heartburn; smaller meals, not eating late at night, elevation of the head of the bed and avoiding foods and medications causing heartburn usually relieve the heartburn during pregnancy, Chewing gum stimulates the salivary glands and can help neutralize acid. ⁽³⁾

The result of the present study point to more than half of the pregnant mothers success of avoid spicy foods and sleep in semi setting position in alleviating heart burn . Thus also the heartburn was alleviated partially in about one third of women who practices drink cold milk, eat yogurt ,stop eating two or three hours before bedtime and fully improved in about one quadrant of the women 25%from those frequently drink little of water These finding agreeing with Heeba who found a high rate of success of home remedies in reliving symptoms during pregnancy in her study Home remedies used to relive pregnancy- related complaining among expectant mothers in Al-Salam district in Port Said .⁽¹⁰⁾

The practices used by women to alleviate heartburn during pregnancy , in the present study, could be considered better than that reported by previous search done to determine incidence of pregnancy-related discomforts and management approaches to relieve them among pregnant women in the obstetrics gynecology outpatient clinics of three hospitals in Erzurum, Turkey. It was found that depending on the symptoms, the pregnant women either did nothing or took correct, incorrect or empirical actions to manage their problems. ⁽¹¹⁾

According to the present study findings, the use or non –use of strategies to alleviate heartburn has no association with demographic characteristics and obstetrical history. This contradicted the finding of the previous study which emphasizes the fact that demographic characteristics and beliefs may influence the degree of trust in the efficacy of management strategies.^(12,13)

Our finding showed the physician was the main source of information about strategies to alleviate heartburn so; the physician must guidelines strategies for helping pregnant women to use the best strategies concerning the source of information, had statically significant associations with the use of strategies to alleviate heartburn during pregnancy. The findings are in the same line with Kavle et al 2014in Egypt In addition to physicians' advice, mothers also expressed their regard and appreciation for advice from family and other members of their communities.^(14,15)

V. Conclusion

The study outlined the strategies used by the pregnant women to alleviate heartburn which include pharmacological , non pharmacological and /or both of them.

The study concluded that the participants had unsatisfactory level of practices to alleviate heart burn during pregnancy. The level of practices had no relation to demographic characteristic or obstetrical data and had statistical significant relation to source of information.

VI. Recommendation

There is a crucial need of health educations for safety information about these strategies by maternity nurses as a routine during antenatal care. Obstetrician and maternity nurses should encourage pregnant women to seek help from care providers, The health care provider should encourage pregnant women to use lifestyle and dietary modifications, Implications of nursing education regarding strategies management in the curriculum for preparing the future nurses on preventive and promotes health practices Developing health education program of how pregnant women manage these discomforts through safe strategies.

Reference

- [1]. Neilson JP. Interventions for heartburn in pregnancy. Cochrane Database of Systematic Reviews 2008, Issue 4. Art. No.:CD007065. DOI: 10.1002/14651858.CD007065.pub2.Interventions for heartburn in pregnancy (Review) iCopyright © 2013 The Cochrane Collaboration. Published by JohnWiley & Sons, Ltd.
- [2]. Nivin Todd, MD National Institute of Diabetes and Digestive and Kidney Diseases. Obstetrical and Gynecological Survey.American Pregnancy Association WebMD, LLC on September 05, 2014
- [3]. J.E.-Richter JE. Review article: the management of heartburn in pregnancy. *Alimentary Pharmacology & Therapeutics* 2005;22(9):749–57.
- [4]. J.E. Richter, Gastroesophageal reflux disease during pregnancy. *Gastroenterology Clinics of North America*,32, 2003, 235–261.
- [5]. E. Sakornbut, Medical care and pregnancy: Common preconception and antepartum issues, in J.A.Rosenfeld, *Handbook of women's health: an evidence-based approach*, (Cambridge. United Kingdom, 2001) 206-226.
- [6]. R. Khresheh. Strategies used by Jordanian women to alleviate heartburn during pregnancy *Journal of the Midwifery* , October 2011 27 (5): PP 603–606
- [7]. AMASH,H Maternal Awareness of Pregnancy Normal and Abnormal signs *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*e-ISSN: 2320 1959.p- ISSN: 2320 1940 Volume 2, Issue 5 (Nov.-Dec. 2013), PP 39–45
- [8]. Weyermann M, Brenner H, Addler G, Yasar Z, Handke-Vesely A, Grab D, et al.Helicobacter pylori infection and the occurrence and severity of gastrointestinal symptoms during pregnancy. *American Journal of Obstetrics and Gynecology* 2003;189:526–31
- [9]. V. Doll'Alba, F. Fomari, C. Krahe, S.M. Callegari-Jacque, and S.G. Silva de Barros, Heartburn and regurgitation in pregnancy: The effect of fat ingestion. *Dig Dissic.* [online], (55(6), 2010, 1035-39. Available from: URL:<http://heartburnresearchtoday.net/>.
- [10]. L. Christopher. The role of proton pump inhibitors in the treatment of heartburn during pregnancy. *Journal of the American Academy of Nurse Practitioners* 2005;17(1):4–8.
- [11]. M.F. Heba, Home remedies used to relive pregnancy- related complaining among expectant mothers in Al-Salam district in Port Said, Unpublished master's diss.; Faculty of Nursing, Suez Canal University. Egypt, 2001.

- [12]. Dowswell, T. and Neilson, J.P. Interventions for heartburn in pregnancy. Cochrane Database of Systematic Reviews. 2008; 4DOI: <http://dx.doi.org/10.1002/14651858.CD007065CrossRefScopus> (4)
- [13]. Koenig, C.J. and Marquardt, D.N. Clinical inquiries. What medications are safe and effective for heartburn during pregnancy?. *Journal of Family Practice* 2001; 50: 304–305
- [14]. Monti, D. Heartburn in pregnancy—no, your baby won't have more hair. *International Journal of Childbirth Education* 2007,32-33
- [15]. Kavle J, Mehanna S , Khan G, Hassan M, Saleh G, and R Galloway (2014):