



Investigating the impact of acupressure on pregnancy nausea and vomiting (A systematic review)

Sadegh Dehghanmehr¹, Malihe Rahdar¹, Sadegh Karimirad², Elhamallahyari³,
Mohammad Sheikhi

¹ Student, Student Research Committee, Nursing and Midwifery School, Zabol University of Medical Sciences, Zabol, Iran

² Nursing and Midwifery School, Zabol University of Medical Sciences, Zabol, Iran

³ Nursing and midwifery School, Iranshahr University of Medical Sciences, Iranshahr, Iran

*Correspondence: **Malihe Rahdar** : Student, Student Research Committee, Nursing and Midwifery School, Zabol University of Medical Sciences, Zabol, Iran

Abstract

Introduction: Nausea is the mental sensation implying the body's need for vomiting; vomiting, in turn, can be defined as the withdrawal of the content of the upper gastrointestinal tract as a result of contractions of the digestive tract and the walls of the chest and abdomen. Nausea and vomiting can be caused by intra- and extra-peritoneal disorders, medications, endocrine disruptors, metabolic and toxins. One of the causes of nausea and vomiting is pregnancy. During 4 to 7 weeks after LMP (Last menstrual period), nausea and vomiting are seen in 80% of pregnant women; these disorders are, generally, resolved at 20 weeks of pregnancy.

Result: Gastrointestinal disorders are the most common complications during pregnancy; about 20% of pregnant women are looking for medical services due to the severity of such complications, the most common of which are nausea and vomiting. This disorder is experienced by more than 85% of pregnant women, but its severity varies from person to person. The cause of nausea and vomiting during pregnancy remains somewhat unknown, but there is a broad consensus that the main cause might be multifactorial, include hormone agents (human gonadotropin hormone, estrogen, progesterone, adrenal and pituitary hormones), gastrointestinal movements, increased saliva, increased sensitivity to odors, low blood sugar, vitamin B6 deficiency and psychosocial factors.

Conclusion: Based on the results of various studies, P6, KID21, and K-K9 points are shown to have positive impact in the reduction of nausea and vomiting in pregnancy and in other diseases. Given the high prevalence of nausea and vomiting in pregnant women and possible complications for the mother, the embryo and even the newborns with mothers suffering from nausea and vomiting of pregnancy on one hand and the ease of application and the availability of interventional acupressure for nurses and caregivers on the other hand, it is highly recommended to prepare required training programs in order to instruct acupressure to pregnant women.

Keywords: acupressure, pregnancy nausea, vomiting

Introduction

Nausea is the mental sensation implying the body's need for vomiting; vomiting, in turn, can be defined as the withdrawal of the content of the upper gastrointestinal tract as a result of contractions of the digestive tract and the walls of the chest and abdomen. Nausea and vomiting can be caused by intra- and extra-peritoneal disorders, medications, endocrine disruptors, metabolic and toxins. One of the causes of nausea and vomiting is pregnancy. During 4 to 7 weeks after LMP (Last menstrual period), nausea and vomiting are seen in 80% of pregnant women; these disorders are, generally, resolved at 20 weeks of pregnancy. (1) Pregnancy nausea and vomiting is commonly called morning sickness; however, it can occur at any time of the day. Generally speaking, 80% cases of nausea and vomiting occur during the day and 3.1% happen in the afternoon and evening. (2) The prevalence rate of nausea and vomiting turned out to be 69.7% among pregnant women in this study; of this rate, 37.4% cases were weak, 46.7% cases were moderate, and 16% of cases had severe nausea and vomiting. The main factors affecting the incidence and severity of pregnancy nausea and vomiting were migraine, history of nausea, odor-stimulated nausea, history of premenstrual syndrome, unwanted pregnancy, and the status of social support. (3) Nausea and vomiting during pregnancy is a problem that can affect the quality of life of the pregnant woman. This condition, especially if it is severe enough to lead to excessive vomiting or intense pregnancy nausea (dehydration, ketonuria, weight loss), can have effects on both the mother and the fetus. This disorder can cause severe complications if it is not treated properly in due time (4). Nausea and vomiting cause inadequate food intake resulting in malnutrition, reduced energy and fatigue, electrolyte disturbances, weakness and dehydration. Several studies have shown that babies born to mothers with pregnancy nausea turn out to struggle with distress, moodiness, sleeping irregularities, malnutrition, and disordered excretion. (5) In general, there are different pharmacological and non-pharmacological methods to control nausea and vomiting. The most common medications used to prevent and treat postoperative nausea include anticholinergic, phenothiazine, antihistamines, butyrophenones, and benzamine (6). Since some pregnant women refuse to receive any medication during pregnancy, and most medications cause severe complications and affect the mother and especially the fetus, the only way to interfere with these patients is through the use of non-pharmacological treatments. (7) The most commonly used non-pharmacological

methods are complementary treatments (8), which include acupuncture, acupressure, massage therapy, aromatherapy, yoga, and energy therapy, among which acupressure is the most popular treatments. (10) Regarding the possible mechanism of acupressure, it should be said that exerting pressure on the main sites activates small muscle fibers; these fibers, in turn, send stimulations to higher nervous centers, including the spinal cord, the medial brain and the hypothalamic pituitary axis. Finally, different responses occur depending on the location of stimulation. (11) This traditional non-pharmacological method is used without the use of drugs and any other chemicals and is inexpensive, safe and with minimal complications. According to traditional Chinese medicine, an energy flow is essential for the health of the body along the 12 zones or ducts of energy throughout the body. Accordingly, the cause of most diseases and disorders of the body is the imbalance in this energy. Stimulation of pressure through massage is applied on specific points of the energy pathways during acupressure; this leads to the emergence of proper response through correcting the energy flow (12). The World Health Organization has approved the use of acupuncture and acupressure in 100 cases. However, given that traditional acupuncture involves bedding and invasive intervention and the risk of developing AIDS and hepatitis, these factors have led to the emergence and use of acupressure (13). Several clinical studies have shown the effect of acupressure on the upper gastrointestinal tract. Applying pressure to the pericardial point or the spot of the nigrun, which is three fingers higher than the wrist on the palm of the hand between the two flexor tendons, improves nausea and vomiting. (14) The results of another study indicated that acupressure is as effective as vitamin B6 in reducing nausea and vomiting in pregnancy; however, acupressure is preferable because it is inexpensive and available and does not require a doctor; rather it can be implemented by a nurse or caregiver. (15) Considering the prevalence of nausea and vomiting during pregnancy and considering that acupressure is a safe, non-invasive, and fast method and does not require specialized facilities for its implementation and it can easily be performed by the nurse and the individual himself, and also the lack of severe complications (16,17), the present study was conducted in order to investigate the impact of acupressure on pregnancy nausea and vomiting as a systematic review.

Results

Gastrointestinal disorders are the most common complications during pregnancy; about 20% of pregnant women are looking for medical services due to the severity of such complications, the most common of which are nausea and vomiting. This disorder is experienced by more than 85% of pregnant women, but its severity varies from person to person. (19)The cause of nausea and vomiting during pregnancy remains somewhat unknown, but there is a broad consensus that the main cause might be multifactorial, include hormone agents (human gonadotropin hormone, estrogen, progesterone, adrenal and pituitary hormones),gastrointestinal movements, increased saliva, Increased sensitivity to odors, low blood sugar, vitamin B6 deficiency and psychosocial factors. (20)Embryonic and maternal complications of nausea and vomiting include rare cases of abortion, preterm labor, stillbirth, growth retardation and mortality, and some cases of low birth weight (LBW). (1)There is a significant relationship between nausea and vomiting with anxiety and depression during pregnancy. The results of various studies have introduced nausea and vomiting as the main causes of anxiety and depression in pregnant women. (5)The usual use of anti-nausea and vomiting drugs causes complications that require more drug interactions and prolong the duration of hospitalization in patients.Anxiety, dyspnea, drowsiness, tachycardia, hypotension, and fatigue are some of the most common complications of drug therapy for nausea and vomiting (6). Acupressure is an intervention that has no adverse effects on the mother and the fetus; several studies have confirmed the positive impact of this intervention of the reduction of nausea and vomiting in pregnant women. The results of Salehian et al study confirmed the effect of acupressure on decreasing the incidence and severity of nausea and vomiting in pregnant women (19). A study conducted in 2011 confirmed the effect of applying pressure on Neigun's point in decreasing nausea and vomiting in pregnant women. (2)Various studies have confirmed the effect of applying pressure on P6 point in decreasing the incidence and frequency of nausea and vomiting in pregnant women. (7, 21)Based on the results of a study conducted to determine the effect of acupressure and ginger consumption on nausea and vomiting during pregnancy, there turned out to be a significant relationship between acupressure and ginger consumption and reduced nausea and vomiting. (22)Acupressure at P6 point is effective in reducing nausea and vomiting in various patients. Various studies have introduced this spot as the most important

point for reducing nausea and vomiting in patients; ancient medicine specialists and traditional Chinese medical science confirm the high significance of this spot in acupressure. The results of a study confirmed the effect of the use of an acupressure bracelet at P6 spot in decreasing chemo-induced nausea (23); another study confirmed the use of an acupressure bracelet in the nausea and vomiting of patients after strabismus surgery (24). PC6 spot acupressure is, also, highly effective in mitigating the intensity of chemo-induced nausea in children with acute lymphoblastic leukemia.

Discussion

Based on the results of a study, the intensity of pregnancy nausea and vomiting was between 16% and 21.7% in Iran. Intense nausea and vomiting can lead to depression, disability, loss of work, increased hospitalization, and the termination of pregnancy. (22) Many studies have been done on the effect of acupressure on the reduction of nausea and vomiting in pregnant women and other patients. Some of these studies confirm the positive effect of acupressure on the reduction of nausea and vomiting in patients, and some other also reject this hypothesis; this study focuses on those researches which reject the effect of acupressure on the reduction of vomiting and nausea. Surgery and anesthetic drugs are some of the main causes of nausea and vomiting in patients. Many studies have considered the effect of acupressure on reducing nausea and vomiting in patients after surgery.Acupressure has turned out to be effective in reducing postoperative nausea and vomiting after adenoid tonsillectomy (26). Another study confirmed the positive impact of applying pressure on PC6 point in reducing nausea and vomiting in adults after orthopedic surgery (27). The effect of acupressure through the use of a pressure bracelet on P6 point after strabismus surgery has been shown to reduce nausea in patients (6). The results of Norouzinia et al study indicated that acupressure applied onniguan pointreduced the severity of nausea from 35.5% to 13.2% in postoperative patients; it, also, decreases the severity and frequency of vomiting significantly in these patients (28). Several other studies have also conformed the positive impact of acupressure on decreasing nausea and vomiting after surgery. (29,30,31)

There are also studies that reject the effect of acupressure on reducing nausea and vomiting after a variety of surgical procedures in patients.

Based on the results of Haj Bagheri et al study, the impact of applying acupressure at PC6 points to reduce nausea and vomiting in patients after appendectomy turned out to be quite insignificant, some of the main causes of which might be using a bracelet with a push-button bracelet to apply pressure and the limited sample size of the study; i.e. 88 subjects (32). Another study conducted in 2016 indicated that acupressure did not turn out to be effective in decreasing the severity of nausea in post-operative patients who underwent appendectomy, some of the main causes of which, again, might be not applying acupressure in the correct way and limited sample size (72subjects) (25). Acupressure efficacy in reducing postoperative nausea and vomiting after laparoscopy was not confirmed in the study; the main causes of such findings might be the use of acupressure bracelets and the application of pressure in the inappropriate place (33). Based on the results of another study, although acupressure at PC6 point did not decrease post-appendectomy vomiting, it reduced vomiting in these patients. The effect of acupressure on PPP (palm pressure point) point located in the palm of the hand at the intersection of the thumb and the third finger during nausea reaction after dental examinations has been confirmed in a research in 2015. (5) In 2011, a study was conducted to compare the effect of acupressure at P6 with K-K9 in reducing nausea and vomiting during pregnancy. The results of this study showed that pressure at K-K9 point was more effective in decreasing nausea in women, but the effect of both areas on the reduction of vomiting and irradiation was the same and pressure at both points resulted in significant decrease in vomiting and incidence of nausea in pregnant women. K-K9, which is much easier to find than P6 point, is a point located in the second clause of the ring finger. It is possible to apply pressure with the fingers of the same hand on K-K9 point, which makes it relatively preferable to P6 point in this regard. (36) KID21 point is one of the acupressure points used to reduce nausea and vomiting during pregnancy. This point is located in the kidney and stimulates above the navel, and on the sides of the midline line symmetrically to exert pressure. A research conducted in 2012 confirmed the positive impact of applying pressure on this point in reducing pregnancy nausea and vomiting. (37)

Conclusion

Based on the results of various studies, P6, KID21, and K-K9 points are shown to have positive impact in the reduction of nausea and vomiting in pregnancy and in other diseases. Given the high prevalence of nausea

and vomiting in pregnant women and possible complications for the mother, the embryo and even the newborns with mothers suffering from nausea and vomiting of pregnancy on one hand and the ease of application and the availability of interventional acupressure for nurses and caregivers on the other hand, it is highly recommended to prepare required training programs in order to instruct acupressure to pregnant women. Also, given the fact that there are some studies that reject the effect of acupressure on nausea and vomiting in patients, it is advisable to conduct interventional and comparative studies to find the best acupressure points for reducing nausea and vomiting in certain patients.

References

1. Hosseinzadeh M., Khosravi A., Borgi Z, Safaei H, Delpisheh A. Anti-Helicobacter pylori Antibody Analysis in Pregnant Women with Nausea and Vomiting during Pregnancy. Health system research.2011;7(1):81-88.
2. Khavandizadehaghdam S, Mahfoozi B. The effect of acupressure (by C-bands) on the prevalence and vomiting of pregnancy. Ardebil University of Medical Sciences and Health Services.2010.
3. A. Soltani, M. DaneshKajuri, SH. Safavi, F. Hosseini. Frequency and Severity of Nausea and Vomiting in Pregnancy and the Related Factors among Pregnant Women. IJN. 2007; 19 (48) :95-102.
4. AbediAsl J, Nateghi F, Etaati Z, Sobhani A. Seroprevalence of Helicobacter Pylori in pregnant women with severe nausea and vomiting during pregnancy. (MEDICAL JOURNAL OF HORMOZGAN UNIVERSITY.2007;11(1):13-16.
5. Salarzaei M, Saravani S, Heydari M, Aali H, Malekzadegan A, Soofi D, Movaghar ER, Mir S, Parooei F. Prevalence of Urinary Tract Infection in Children with Nephrotic Syndrome. International Journal of Pharmaceutical Sciences and Research. 2017 Jul 1;8(7):1346-50.
6. Mahmoodi Z, Behzadmehr M, Salarzaei M, Havasian MR. Examining High-Risk Behaviors and Behavioral Disorders in Adolescents with Addicted and Non-Addicted Fathers in Public School of Zabol in the Academic Year 2016-2017. Indian Journal of Forensic Medicine & Toxicology. 2017 Jul 1;11(2).
7. Mahmoodi Z, rezaieKeikhaie K, Salarzaei M. The relationship between main cardiac risk factors and acute myocardial infraction in the patients referring to Zabol Amir Al-Momenin Hospital in 2016. Int. J. Adv. Res. Biol. Sci. 2017;4(8):36-9.

8. Behzadmehr R, Keikhaie KR, Pour NS. The Study of Pregnant Women's Attitude toward Using Ultrasound in Pregnancy and its Diagnostic Value based on the Demographic Features in Amir-al-Momenin Hospital of Zabol. *Int J Adv Res Biol Sci.* 2017;4(6):58-63.
9. Behzadmehr R, Keikhaie KR, Pour NS. Investigating the Attitude of Pregnant Women on the Efficacy of Ultrasound in Diagnosing Pregnancy based on Level of Education and Number of Pregnancies in Zabol Amiralmomenin Hospital during 2015-2016. *International Journal of Pharmacy & Life Sciences.* 2017 Jul 1;8.
10. Behzadmehr R, Keikhaie KR, Pour NS. INTERNATIONAL JOURNAL OF PHARMACY & LIFE SCIENCES.
11. Mahmoodi Z, Keikhaie KR, Salarzadeh M, Havasian MR. The Incidence of Different Kinds of Cardiac Arrhythmia after Myocardial Infarction in Smokers and Opium Abusers Hospitalized in Imam Ali Hospital, Zahedan, 2016.
12. Shirazi M, Hantoush-Zadeh S, Rezaie-Keikhaie K, Pirjani R. Spontaneous Uterine Rupture and Live Fetus in 21th Week of Pregnancy with Hemorrhagic Shock Due to Placenta Percreta: A Case Report. *Case Reports in Clinical Practice.* 2016 Jan 20;1(1):19-21.
13. Poureisa M, Behzadmehr R, Daghighi MH, Akhoondzadeh L, Fouladi DF. Orientation of the facet joints in degenerative rotatory lumbar scoliosis: an MR study on 52 patients. *Actaneurochirurgica.* 2016 Mar 1;158(3):473-9.
14. Daghighi MH, Poureisa M, Safarpour M, Behzadmehr R, Fouladi DF, Meshkini A, Varshochi M, KianiNazarlou A. Diffusion-weighted magnetic resonance imaging in differentiating acute infectious spondylitis from degenerative Modic type 1 change; the role of b-value, apparent diffusion coefficient, claw sign and amorphous increased signal. *The British journal of radiology.* 2016 Aug 11;89(1066):20150152.
15. Shakeri A, Shakeri M, Behrooz MO, Behzadmehr R, Ostadi Z, Fouladi DF. Infrarenal aortic diameter, aortoiliac bifurcation level and lumbar disc degenerative changes: a cross-sectional MR study. *European Spine Journal.* 2017 Nov 15;1-9.
16. Haghani H. Comparison of the effects of acupressure and touch on the headache caused by spinal anesthesia after cesarean section. *Journal of Obstetrics, Gynecology and Infertility.* 2015; 18 (184): 9-19
17. Mojalli MAA, Parivash A, Kianmehr, Mojtaba A, Zamani, Somayeh. Effect of Acupressure on Fecal Impaction in Hemodialysis Patients. *Journal of Mazandaran University of Medical Sciences.* 2016;26(136):18-25.
18. Moosavi S, Mirzaei M, Reza Soltani P. The Effects of Acupressure on Anxiety Nursing, Midwifery and Operating Room Students. *Journal of Guilan University of Medical Sciences.* 2009; 18 (71) :82-89.
19. Salehian T, Tadaion M, Dekaram M. The Effect of Acupressure by Using C-Bond on the Severity of Nausea and Vomiting in Pregnancy. *Hormozgan Medical Journal.* 2007;11(1):76-82.
20. Abedian Z, Abbas Zade N, Latif Negadrudaseri R, Shakeri M. The effect of telephone support on the severity of nausea and vomiting in the first half of pregnancy in the first half of pregnancy. *Journal of Midwifery and Infertility in Iran.* 2014;17(118):22-29.
21. Abtahi D, Ashari A, Lotfi M. Use of acupressure in the prevention of nausea and vomiting after surgery. *Zahedan Journal of Research in Medical Sciences.* 2005; 7 (3): 9-15.
22. Saberi F, Sadat Z, Abedzadeh-Kalahroudi M, Taebi M. Acupressure and Ginger to Relieve Nausea and Vomiting in Pregnancy: a Randomized Study. *Iranian Red Crescent Medical Journal.* 2013;15(9):854-861.
23. Roscoe JA, Bushnow P, Jean-Pierre P, et al. Acupressure Bands are Effective in Reducing Radiation Therapy-Related Nausea. *Journal of pain and symptom management.* 2009;38(3):381-389.
24. Ebrahim Soltani A, Mohammadinasab H, Goudarzi M. Comparing the Efficacy of Prophylactic P6 Acupressure, Ondansetron, Metoclopramide and Placebo in the Prevention of Vomiting and Nausea after Strabismus Surgery. *Acta Medica Iranica.* 2011;49(4):208-212.
25. Mohammadpour A, Basiri Moghadam M, Davari Nia Motlagh Ghoochan A, Mojtaba S. Effect of acupressure on anxiety and severity of nausea in patients with appendectomy: randomized clinical trial (clinical trial). *Journal of Qom University of Medical Sciences.* 2016;10(7):1-9.
26. Sadri B, Nematollahi M, Shahrami R. The Effect of Acupressure on the Reduction of PONV (Postoperative Nausea and Vomiting) after Adenotonsilectomy. *RJMS.* 2007; 13 (53) :119-125.
27. Naseri K, Shami SH, Ahsan B. The effect of acupressure on postoperative nausea and vomiting. *Hormozgan Medical Journal.* 2006;10(4):357-362.
28. Noroozinia H, Mahoori A, Hasani E, Gerami-Fahim M, Sepehrvand N. The effect of acupressure on nausea and vomiting after cesarean section under spinal anesthesia. *Acta Med Iran.* 2013; 6;51(3):163-7.

29. Doran K, Halm MA. Integrating acupressure to alleviate postoperative nausea and vomiting. *Am J Crit Care*. 2010;19(6):553-6.
30. EbrahimSoltani A, Mohammadinasab H, Goudarzi M, Arbabi S, Mohtaram R, Afkham K, Momenzadeh S. Acupressure using ondansetron versus metoclopramide on reduction of postoperative nausea and vomiting after strabismus surgery. *Arch Iran Med*. 2010 Jul;13(4):288-93.
31. Lee A, Fan LT. Stimulation of the wrist acupuncture point P6 for preventing postoperative nausea and vomiting. *Cochrane database of systematic reviews (Online)*. 2009;(2):CD003281.
32. Adib-Hajbaghery M, Etri M, Hosseini M. The effect of acupressure on the Pericardium 6 point on pain, nausea and vomiting after appendectomy .*cmja*. 2012; 2 (2) :171-182.
33. Sadri B, Madhad M, RahimzadehBajgiran P. Effectiveness of acupressure effect on incidence of nausea and vomiting after laparoscopic surgery under general anesthesia in women of reproductive age. *Razi Medical Sciences University (Journal of Iran University of Medical Sciences)*. 2005;12(48):113-118.
34. Adib-Hajbaghery M, Etri M, Hosseini M, Mousavi M-S. Pressure to the P6 Acupoint and Post-Appendectomy Pain, Nausea, and Vomiting: A Randomized Clinical Trial. *Journal of Caring Sciences*. 2013;2(2):115-122.
35. Rahshenas N, Nasermostofi S, Valaii N, Farajzad A. The effect of acupressure on the gag reflex. *J Res Dent Sci*. 2015; 12 (1) :7-10.
36. Nourani S, Aparnak F, Sadr Nabavi R, Ebrahimzadeh S. COMPARISON OF K-K9 AND P6 POINTS ACUPRESSURE ON NAUSEA AND VOMITING IN THE FIRST HALF OF PREGNANCY. *J Urmia Univ Med Sci*. 2011; 22 (4) :369-378.
37. Naeimi Rad M, Lamyian M, Heshmat R, Jaafarabadi MA, Yazdani S. A Randomized Clinical Trial of the Efficacy of KID21 Point (Youmen) Acupressure on Nausea and Vomiting of Pregnancy. *Iranian Red Crescent Medical Journal*. 2012;14(11):697-701

Access this Article in Online	
	Website: www.ijarbs.com
	Subject: Medical Sciences
Quick Response Code	
DOI: 10.22192/ijarbs.2017.04.12.021	

How to cite this article:

Sadegh Dehghanmehr ,Malihe Rahdar ,Sadegh Karimirad ,Elhamallahyari , Mohammad Sheikhi. (2017). Investigating the impact of acupressure on pregnancy nausea and vomiting (A systematic review). *Int. J. Adv. Res. Biol. Sci.* 4(12): 207-212.

DOI: <http://dx.doi.org/10.22192/ijarbs.2017.04.12.021>