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ORIGINAL ARTICLE

SOCIODEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF PARTURIENTS WITH PREECLAMPSIA
CARACTERIZAÇÃO SOCIODEMOGRÁFICA E CLINICA DA PARTURIENTE COM PRÉ-ECLÂMPSIA
CARACTERÍSTICAS SOCIODEMOGRÁFICAS Y CLÍNICAS DE LA PARTURIENTA CON PREECLAMPSIA

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ABSTRACT
Objective: to assess the sociodemographic and clinical profile of parturients with preeclampsia in a public maternity ward. *Method:* prospective, descriptive and cross-sectional study with a quantitative approach conducted with 372 parturients diagnosed with preeclampsia. The data were collected between August and September 2013, after the project being approved by the Research Ethics Committee, Protocol No. 458.688/13. *Results:* the average age of the parturients was 26.2 years, there was a predominance of: mixed race (70.2%); singles (43.01%); complete secondary education (31.2%); gestational age at which high blood pressure was discovered of 29.6 years (27.4 -31.8); patients referred to high-risk prenatal care (45.2%); blood pressure of 15 x 8 - 16 x 12 (51.3%); detection of high blood pressure in the prenatal consultation (54.6%); and severe preeclampsia (82%). *Conclusion:* the parturients were young adults, single, with complete secondary education, with hypertension detected during prenatal care, severe preeclampsia and reduced referral to high-risk prenatal care. *Descritores:* Preeclampsia; High-Risk Pregnancy; Health Profile; Pregnancy-Induced Hypertension.

RESUMO
Objetivo: analisar o perfil sociodemográfico e clinico da parturiente com pré-eclâmpsia de uma maternidade pública. *Método*: estudo prospectivo, descritivo, de delineamento transversal com abordagem quantitativa, constituído de 372 parturientes diagnosticadas com pré-eclâmpsia. Os dados foram coletados entre agosto e setembro de 2013, após aprovação do projeto pelo Comitê de Ética em Pesquisa, Protocolo n° 458.688/13. *Resultados:* a idade média das parturientes foi de 26,2 anos. Houve predominância de: raça/cor parda (70.2%); solteiras (43,01%); ensino médio completo (31,2%); idade gestacional em que descobriram pressão arterial elevada de 29,6 anos (27,4-31,8); encaminhadas ao pré-natal de alto risco (45,2%); pressão arterial de 15 x 8-16 x 12 (51,3%); detecção da pressão arterial elevada na consulta de pré-natal (54,6%); e pré-eclâmpsia grave (82%). *Conclusão:* as parturientes eram adultas jovens, solteiras, com ensino médio completo, ocupação "do lar"; hipertensão arterial detectada no pré-natal; pré-eclâmpsia grave; e encaminhamento reduzido ao pré-natal de alto risco. *Descritores*: Pré-Eclâmpsia; Gravidez de Alto Risco; Perfil de Saúde; Hipertensão Induzida por Gravidez.

RESUMEN
Objetivo: analizar el perfil sociodemográfico y clínico de la parturienta con preeclampsia en una maternidad pública. *Método:* estudio prospectivo, descriptivo, transversal con un enfoque cuantitativo, llevado a cabo con 372 parturientas diagnosticadas con preeclampsia. Los datos fueron recogidos entre agosto y septiembre de 2013, después de la aprobación del proyecto por la Comisión de Ética en Investigación, Protocolo N° 458.688/13. *Resultados:* la edad promedio de las parturientas fue de 26,2 años, hubo un predominio de: raza mestiza (70,2%); solteras (43,01%); enseñanza secundaria completa (31,2%); edad gestacional en que descubrieron hipertensión arterial elevada de 29,6 años (27,4-31,8); remisión al cuidado prenatal de alto riesgo (45,2%); presión de 15 x 8-16 x 12 (51,3%); detección de hipertensión arterial elevada en la consulta prenatal (54,6%); y preeclampsia grave (82%). *Conclusión:* las parturientas eran adultas jóvenes, solteras, con enseñanza secundaria completa, amas de casa, con hipertensión arterial detectada en el cuidado prenatal, preeclampsia grave y reducida remisión al cuidado prenatal de alto riesgo. *Descriptores:* Preeclampsia; Embarazo de Alto Riesgo; Perfil de Salud; Hipertensión Inducida por el Embarazo.

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INTRODUCTION

Statistics show a wide range of women with hypertensive syndromes of pregnancy (HSP), which are among the leading causes of maternal morbimortality worldwide. HSP constitutes a serious public health problem in Brazil, which warns health managers about the need of implementing more effective health policies geared toward this clientele.

Preeclampsia (PE) is a syndrome of many factors and complexity whose origin has not yet been elucidated. It occurs in about 5 to 7% of pregnancies in the world. It is characterized by a variable clinical manifestation with emergence of symptoms over the course of pregnancy and severity affecting both mother and child.[1]

The diagnosis of PE is performed around the 20th week of pregnancy or during the first days of the puerperium. It features the development of arterial hypertension, i.e., systolic blood pressure equal to or greater than 140 mmHg, diastolic blood pressure equal to or greater than 90 mmHg, and urinary excretion of 0.3 g protein or more in 24 hours. Most diagnoses are carried out in the last stage of pregnancy, establishing the severity of the disease with the precocity of the clinical manifestations.[2]

Studies conducted in Brazil reveal that about 10% of pregnancies progresses to HSP in which the incidence of PE stands out. This disorder, added to other hypertensive disorders, has been responsible for maternal and fetal deaths, mainly in the northeastern and central-western regions of the country.[3]

As a systemic disease, PE is characterized by intense inflammatory response, endothelial injury, platelet aggregation, activation of the coagulation system, and generalized vascular resistance increase. As a result, all organs are exposed to the effects of PE. It is common to find glomeruloendotheliosis in the kidneys, although other pregnant women may exhibit another type of lesions, such as focal segmental glomerulosclerosis. In the lungs, preeclamptic patients may exhibit pulmonary edema. Hepatic vascular damage related to overconsumption of platelets and systemic hemolysis characterizes the HELLP syndrome (hemolysis, elevated liver enzymes, and low platelets), which increases the high rates of maternal and perinatal morbimortality.[2]

PE has been regarded as a major public health problem and a leading cause of maternal mortality in developed countries. It is estimated that at least 50,000 women die due to this disease or its complications annually in the world.[3]

In Teresina, State of Piauí, a study conducted in 2012 in a public reference institution assessed a sample of 396 cesarean births obtained from a population of 38,715 women recorded in a database from 2007 to 2012. The authors observed that above 20% cesarean births had been characterized by hypertension in pregnancy.[4]

The incidence of HSP is characterized by wide variations in the literature. It is believed that such percentage changes are due in part to the lack of consensus with respect to diagnosis criteria. As main predisposing causes, the World Health Organization adds: risk factors; clinical factors; and epidemiological factors, at the same time that regards ethnic, environmental, and socioeconomic factors as strong issues related to the incidence of the disease.[5-6] Therefore, the goal of the present study is:

♦ To assess the sociodemographic and clinical profile of parturients with preeclampsia in a public maternity ward.

METHOD

The present article was extracted from the specialization monograph titled "Demographic and clinical characterization of parturients with preeclampsia in Teresina/PI" submitted to the Graduate Program in Sciences and Health of the State University of Piauí, Medical Sciences School Campus, Teresina, State of Piauí.

It is an observational, descriptive study with cross-sectional design based on a quantitative approach[8] conducted in a reference public maternity ward of the State of Piaui located in the southern region of Teresina. The sample was obtained from a population of 5,185 parturients with diagnosis of PE from 1st January 2011 to 31st December 2012, constituting a sample of 372 parturients, calculated with 5% precision and 95% confidence interval.

The inclusion criterion regarded parturients admitted for clinical treatment of PE, according to the classification into mild and severe PE. Exclusion criteria included women exhibiting clinical complications at the time of data collection (heart diseases, nephropathies, diabetes, and hypertensive peak, among others) or some cognitive and mental limitation (comprehension and verbal expression difficulty) which would impair the participation in the study.

The data were tabulated using the SPSS version 20.0 statistical software, presented in tables of frequency and percentage to represent qualitative variables, and measures

of central tendency (mean and median) for quantitative variables. A 95% confidence interval was used in estimates performed, as well as maximum and minimum values according to the characteristic of the variable.

The study complied with the confidentiality and anonymity of the subjects in accordance with Resolution No. 466/12, which requires the authorization of the institution through institutional authorization request. The research was submitted and recorded in the Brazilian platform of the Information National System of Research Ethics Involving Humans (SISNEP) and approved by the Ethics Committee of São Marcos Hospital, Piauí Association for Combating Cancer (HSM/APCC), in accordance with the Certificate of Presentation for Ethical Consideration – CAAE[9] No. 20042713500005209, receiving the assent with Protocol No. 458.688/13.

RESULTS

The study assessed 372 parturients diagnosed with preeclampsia.

Table 1. Sociodemographic distribution of parturients diagnosed with preeclampsia. Teresina, PI, 2014.

Variables	No.	%	Mean (95% CI)*	Median	Min-Max
Age	372	100.0	26.2 (23.9-28.5)	28	13-45
Race		-	-	-	-
Mixed	261	70.2	-	-	-
Black	70	18.8	-	-	-
White	41	11.0	-	-	-
Marital status		-	-	-	-
Single	160	43.01	-	-	-
Common-law marriage	106	28.49	-	-	-
Other	1	0.27	-	-	-
Origin			-	-	-
Piauí	329	88.4	-	-	-
Maranhão	43	11.6	-	-	-
Education			-	-	-
Illiterate	1	0.3	-	-	-
Incomplete primary education	66	17.7	-	-	-
Complete primary education	105	28.2	-	-	-
Incomplete secondary education	57	15.3	-	-	-
Complete secondary education	116	31.2	-	-	-
Incomplete higher education	11	2.96	-	-	-
Complete higher education	13	3.5	-	-	-
N/A	3	0.8	-	-	-
Family income			-	-	-
Up to 1 minimum wage	145	39.0	-	-	-
From 1 to 3 minimum wages	169	45.4	-	-	-
From 3 to 5 minimum wages	39	10.5	-	-	-
More than 5 minimum wages	2	0.5	-	-	-
N/A	17	4.6	-	-	-
Religion			-	-	-
Catholic	310	83.3	-	-	-
Spiritism	6	1.6	-	-	-
Evangelical	38	10.2	-	-	-
Protestant	1	0.3	-	-	-
Umbanda	1	0.3	-	-	-
None	16	4.3	-	-	-
Occupation			-	-	-
Housewife	186	50	-	-	-
Student	45	12.1	-	-	-
Rural worker	42	11.3	-	-	-
Teacher	11	3	-	-	-
Maid	8	2.2	-	-	-
Business woman	9	2.4	-	-	-
Hairdresser	6	1.6	-	-	-
Farmer	22	3	-	-	-

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Ribeiro JF, Rodrigues CO, Bezerra VOR **et al.**   Sociodemographic and clinical characteristics...

Nursing technician	4	1.1	-	-	-
Other	39	10.5	-	-	-

*95% confidence interval for true average.

Table 2. Clinical characterization of parturients with diagnosis of preeclampsia, Teresina, PI, 2014.

Variáveis	n	%	Média (95% CI)*	Mediana	Min-Max
Age at menarche	372	100	10.2 (8.9-11.5)	9.6	9-19
No. of pregnancies	372	100	2.5 (2.1-2.9)	2.2	1-10
No. of normal labors	372	100	1.1 (0.9-1.3)	0.6	0-8
No. of cesareans	372	100	0.8 (0.6-1)	0.6	0-5
No. of live births	372	100	1.4 (1.2-1.6)	0.8	0-7
No. of abortions	372	100	0.7 (0.5-0.9)	0.5	0-4
Gestational age	372	100	36.6 (32.8-40.4)	38	6-42
Nº of prenatal care consultations	372	100	6.1 (5-7.2)	5.3	0-11
Referred to high-risk prenatal care	-	-	-	-	-
Yes	168	45.2	-	-	-
No	204	54.8	-	-	-
Weight	372	100	77.4 (69.3-85.5)	77	40-110
Height	372	100	1.53 (1.49-1.57)	1,52	1-1,75
Body mass index (BMI)	372	100	32.4 (30.1-34.7)	31	16-62
Arterial pressure	-	-	-	-	-
From 11 x 7 to 14 x 12	135	36.3	-	-	-
From 15 x 8 to 16 x 12	191	51.3	-	-	-
From 17 x 10 to 18 x 13	37	10	-	-	-
Over 19 x 10	9	2.4	-	-	-
No. of weeks in which high blood pressure was detected	372	100	29.6 (27.4-31.8)	33	0-40
Place where high blood pressure was detected	-	-	-	-	-
Hospital	30	8.06	-	-	-
Maternity ward	133	35.8	-	-	-
Prenatal care consultation	203	54.6	-	-	-
Family Health Program consultation	4	1.1	-	-	-
Delivery room	2	0.5	-	-	-
Preeclampsia classification			-	-	
Mild	14	3.8	-	-	-
Low	38	10.2	-	-	-
Severe	305	82	-	-	-
Other	15	4	-	-	-

*95% confidence interval for true average.

DISCUSSION

The age of 15 years and/or over 35 years should be taken into consideration in high-risk pregnancies. According to the 2010 Brazilian census, 6% of the general population aged 10 years and over represent the fertility rate.[10] The variation of the age group found in the present study is similar to that of a study conducted in Taubaté, State of São Paulo, in a population composed of 115 pregnant women with PE from 2009 to 2010. That study found that the age group most affected by this disease was between a minimum value of 13 years and a maximum of 46 years of age. The group with greatest exposure had been from 21 to 35 years and the average equivalent to 27.64 years old, i.e., considerably proper for fertility.[11]

In a study conducted by the Medical School of the Federal University of Minas Gerais (UFMG) from 2000 to 2010, the researchers observed that 71.4% of the women with mild and severe preeclampsia were not white (mixed and black) and this result is in line with the findings of the present study.[1] In Piauí, mixed and black races represent 6 and

7% of the general population, respectively. These data are in line with the large contingent of inhabitants of this ethnicity.[13]

With respect to the level of education, results similar to those of the present study were found in the Brazilian northeast. It was observed that approximately 45.5% of women with PE had about 11 years of study, which corresponds to complete secondary education.[13] Currently, only 6% of the mixed race female population is over 10 years with complete primary education and incomplete secondary education.[10-4]

In a study conducted with 204 pregnant women assisted at the prenatal outpatient clinic of a public maternity ward from 2007 to 2008, in a capital of the northeastern region, researchers found that 50.9% of the sample did not have paid occupation (housewives), which is similar to the findings of the present study.[15] Studies conducted in Brazil have shown a growing number of women who have labor activities strictly in the home, as observed in the present study. In this case, it may be added that the low level of personal relationships is evident and this may be a

factor for maintaining or hindering the search for healthcare.[16]

With respect to family income, it can be affirmed that women who perform work activities outside the home have higher proportions of appropriate attitudes toward pregnancy care.[16] Another possibility is that women who work outside the home have more information coming from contacts with other pregnant women, which may sensitize them about preventive health practices.[4]

In 2006, a qualitative research conducted with twelve participants in the State of Piauí assessed the nursing care provided according to the opinion of women with PE. It was found that 58% of the interviewees were housewives and 9% maids, i.e., similar data to those currently observed.[15]

With respect to religious belief, 7% of the general population of the State of Piauí is Catholic, which corresponds to 8,063 persons.[14] Pain relief practices in humanized natural childbirth have long been discussed in obstetrics, regarding the Catholic religion as considerably representative through the figure of a lay midwife. It is believed that religions have very strong anthropological and cultural force in how to gestate and give birth.

According to the clinical data, it was possible to observe a very close relationship with a research in which the authors, through the secondary analysis of the epidemiological profile and clinical progression of pregnant women with severe PE, included in an observational cohort-type study conducted at Professor Fernando Figueira Maternal-Infant Institute (IMIP) in Recife, northeastern region of Brazil, obtained the following data: of 154 women included in the study, 64.9% were primiparous and, among these, seven had reported a prior history of abortion; the gestational age of 59.7% was less than 37 weeks; and vaginal delivery had occurred in 20.1%, whereas obstetric delivery had occurred in 79.9%.[13]

With respect to the number of prenatal consultations, a study conducted in the State of Paraná found that 57.1% of the pregnant women assessed had attended prenatal care with six or more consultations—data similar to those of the present study—and 8.9% had not been followed up by health professionals during pregnancy.[15] That study also found a large percentage of women that had not been referred to high-risk prenatal care, even though the city offered reference service for this type of healthcare.

For the assessment of nutritional status (overweight and obesity), the parturients were grouped according to the body mass index (BMI) obtained using the cut-off points recommended by the World Health Organization, which considers: underweight = BMI <18.4 kg/m^2; proper weight = BMI ranging from 18.5 to 24.9 kg/m^2; overweight = BMI from 25 to 29.9 kg/m^2; and obesity = values from 30 kg/m^2 on, which is in line with the IMC found in the present study.[13]

In a study conducted in Natal, State of Rio Grande do Norte, the researchers found data similar to those of that study, i.e., they observed that in a group of 311 women with PE the BMI had been equal to the average of 30.68 kg/m^2 (SD ± 10.85), i.e., a classification compatible with obesity.

Still, according to Table 2, a study conducted by Reis et al. (2010) found that the mean arterial pressure had been significant in the group of women who have had late PE (p = 0.004). Other studies conducted in Brazil assessing the profile of mortality due to PE found that most women had detected high blood pressure during prenatal consultations.[4] Currently, Teresina has 211 teams of the Family Health Strategy (*one of the Brazilian public health programs*) and only two reference maternity wards for high-risk pregnancy. This fact highlights the need of more maternity wards, considering that the maternity wards of Teresina are references for over 200 municipalities.

Regarding the classification of PE, a study, in which the authors included 129 pregnant women with a diagnosis of hypertension, showed that severe PE had been the most frequent diagnosis (n = 69; 53.5%), which is in line with the data found in the present study.[16] In a research conducted at a teaching hospital, the researchers found 82.8% of the pregnant women with severe PE. When PE is detected early, the treatment is considerably effective, favoring pregnancies to achieve proper maternal conditions.[17]

CONCLUSION

The age range of higher incidence of PE was between 23.9 and 28.5 years. The parturients were single, mixed race, from Piauí, with complete secondary education, family income of one to three minimum wages, Catholic, and housewives.

With respect to the clinical profile, it was found that most women had: menarche between 8.9 and 11.5 years of age; natural childbirth; gestational age with the largest number of severe PE diagnoses between 32.8 and 40.4 weeks; more than six prenatal consultations; high percentage classified with risk pregnancy without referral to high-risk prenatal care; and there was a predominance

of women that detected hypertension in pregnancy between 31.8 and 27.4 weeks of pregnancy during prenatal consultations.

It is necessary to assess the qualitative and quantitative association of prenatal care, focusing on the reference and counter-reference of pregnant women to obstetrical specialties, highlighting the itinerary of pregnant women in the Unified Health System (*Brazil's publicly funded healthcare system which assures that healthcare is a "right of all and an obligation of the State"*).

REFERENCES

1. Reis ZSN, Lage EM, Teixeira PG, Porto LB, Guedes LR, Oliveira ECL, et al. Pré-eclâmpsia precoce e tardia: uma classificação mais adequada para o prognóstico materno e perinatal? Rev. Bras Ginecol Obst [Internet]. 2010 Dec [cited 2015 Apr 14];32(12):584-90. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100-72032010001200004&lng=en. DOI: 10.1590/S0100-72032010001200004.

2. Oliveira LG, Karumanchi A, Sass N. Pré-eclâmpsia: estresse oxidativo, inflamação e disfunção endotelial. Rev. Bras. Ginecol. Obstet. [Internet]. 2010 Dec [cited 2015 Apr 02];32(12):609-16. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100-72032010001200008&lng=en. DOI: 10.1590/S0100-72032010001200008.

3. Khan KS, Wojdyla D, Say L, Gulmezoglu AM, Van Look PFA. WHO analysis of causes of maternal death: a systematic review. Lancet. 2006; 367(9516): 1066-745

4. Ribeiro JF, Costa FS, Silva KR, Carvalho TES. Caracterização sociodemográfica e epidemiológica de cesarianas em uma maternidade pública de referência em Teresina. Rev. eletrônica gestão & saúde [Internet]. 2014 Mar [cited 2015 Apr 10];3(5):997-91. Available from: http://gestaoesaude.bce.unb.br/index.php/gestaoesaude/article/view/877.

5. World Health Organization. Physical status: the use and interpretation of anthropometry. Report of a WHO Expert Committee. World Health Organ Tech Rep Ser. 1995; 854:1-452.

6. Ministério da Saúde (BR). Secretaria de Atenção a Saúde. Departamento de Ações Programáticas Estratégicas. Área Técnica de Saúde da Mulher. Pré-natal e Puerpério: atenção qualificada e humanizada - manual técnico/Ministério da Saúde. Brasília: Ministério da Saúde; 2006.

7. Gil AC. Como Elaborar Projetos de pesquisa 5ed. São Paulo: Atlas; 2010.

8. Rothman KJ, Greenland S, Lash TL. Epidemiologia Moderna. 3rd ed. Porto Alegre: Artmed, 2011. 887 p.

9. Brasil. Resolução n. 466/12, de 12 de Dezembro de 2012. Dispõe sobre pesquisas envolvendo seres humanos. Diário Oficial da União, Brasília (2013 Dec 13); Sec 1: 21082-5. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/cns/2013/res0466_12_12_2012.html.

10. Instituto Brasileiro de Geografia e Estatística (Brasil). Síntese de Indicadores Sociais de 2009. Departamento de populações e indicadores sociais, 2009. Rio de Janeiro: IBGE [cited 2011 Apr 10];2009. Available from: http://www.ibge.gov.br.

11. Faria A, Santos T, Feitosa M, Poppe S, Espindola A. Perfil sociodemografico e patológico de gestantes com pré-eclâmpsia. J Nurs UFPE on line [Internet]. 2013 Apr [cited 2015 Mar 24];7(6):4430-6. Available from: http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/4491. DOI: 10.5205/reuol.4164-33013-1-SM.0706201315

12. Melo BCP, Amorim MMR, Katz L, Coutinho I, Veríssimo G. Perfil epidemiológico e evolução clínica pós-parto na Pré-eclâmpsia grave. Rev Assoc Med Bras [Internet]. 2009 [cited 2011 Apr 10];55(2):175-80. Available from: http://www.scielo.br/pdf/ramb/v55n2/22.pdf

13. Ministério da Saúde (BR). Secretaria executiva: Departamento de Informática do SUS - Datasus. Informações de saúde: informações demográficas e socioeconômicas: População residente [Internet]. 2010 [cited 2014 June 01]. Available from: http://www.datasus.gov.br/

14. Santos EMF, Amorim LP, Costa OLN, Oliveira N, Guimaraes AC. Perfil de risco gestacional e metabólico no serviço de pré-natal de maternidade pública do Nordeste do Brasil. Rev Bras Ginecol Obstet [Internet] 2012 [cited 2015 Apr 02];34(3):102-6. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100-72032012000300002&lng=en. DOI: 10. 1590/S0100-72032012000300002.

15. Cunha KJB, Oliveira JO, Nery IS. Assistência de enfermagem na opinião das mulheres com pré-eclâmpsia. Esc Anna Nery Rev Enferm [Internet]. 2007 [cited 2011 Mar 15];11(2):254-60. Available from: http://www.scielo.br/pdf/ean/v11n2/v11n2a11.pdf.

16. Souza AS, Amorim MM, Vasconcelos-Neto MJ, Oliveira-Filho JR, Sousa-Junior FA. Fatores associados com centralização fetal em pacientes com hipertensão arterial na

gestação. Rev Bras Ginecol Obstet [Internet]. 2013 [cited 2015 Apr 15};35(7):309-316. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100-72032013000700005&lng=en. DOI: 10.1590/S0100-72032013000700005.

17. Ministério da Saúde (BR). Secretaria de Atenção a Saúde. Departamento de Ações Programáticas Estratégicas. Gestação de alto risco: manual técnico. Ministério da Saúde. 5th ed. Brasília: Ministério da Saúde; 2012.

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