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KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT HYPERTENSIVE GESTATIONAL SYNDROME AMONG PREGNANT WOMEN: A RANDOMIZED CLINICAL TRIAL

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ABSTRACT

Objective: to evaluate knowledge, attitude and practice about Gestational Hypertensive Syndrome among pregnant women, after an educational intervention.
Method: a controlled, randomized and longitudinal clinical trial, related to the Knowledge, Attitude and Practice survey on Gestational Hypertensive Syndrome complications, carried out with 120 pregnant women at a public maternity hospital in Fortaleza-CE, Brazil. Data collection was performed at three moments and the pregnant women were separated into two groups with 60 participants each. For quantitative comparisons, the Student's t test or the Mann-Whitney's test were applied. To study qualitative associations, the Chi-square or Fisher's exact tests were employed.
Results: adequate assessment of knowledge, attitude and practice was identified in the intervention group, on the seventh and thirtieth days after the intervention ($p<0.05$), with an increased chance of adequate knowledge on the seventh (Odds Ratio=6.63 - Confidence Interval: 3.5-12.55) and on the thirtieth (Odds Ratio=6.25 - Confidence Interval: 3.13-12.50) days. In this group, the attitude was adequate on the seventh (Odds Ratio=6.11 - Confidence Interval: 3.28-11.39) and on the thirtieth (Odds Ratio=6.44 - Confidence Interval: 3.49-11.89) days. The practice was also adequate on the seventh (Odds Ratio=3.73 - Confidence Interval: 2.21-6.28) and on the thirtieth (Odds Ratio=4.91 - Confidence Interval: 2.90-8.32) days.
Conclusion: the pregnant women who participated in the educational intervention presented more adequacy in relation to knowledge, attitude and practice, when compared to those in the control group. Brazilian Registry of Clinical Trials (*Registro Brasileiro de Ensaios Clínicos*, REBEC) RBR-8wyp8j

DESCRIPTORS: Knowledge. attitudes and practices in health. Pregnancy-induced hypertension. Clinical trial. Education in health. Educational technology. Nursing.

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CONHECIMENTO, ATITUDE E PRÁTICA SOBRE SÍNDROME HIPERTENSIVA GESTACIONAL ENTRE GESTANTES: ENSAIO CLÍNICO RANDOMIZADO

RESUMO

Objetivo: avaliar conhecimento, atitude e prática sobre Síndrome Hipertensiva Gestacional entre gestantes, após intervenção educativa.
Método: ensaio clínico controlado, randomizado e longitudinal, relacionado ao inquérito Conhecimento, Atitude e Prática sobre complicações da Síndrome Hipertensiva Gestacional, realizado em maternidade pública de Fortaleza-CE, Brasil, com 120 gestantes. A coleta de dados foi realizada em três momentos e as gestantes separadas em dois grupos com 60 participantes cada. Para comparações quantitativas, aplicou-se o teste t de Student ou Mann-Whitney. Para estudar associações qualitativas, empregou-se o teste Qui-quadrado ou exato de Fisher.
Resultados: identificou-se avaliação adequada do conhecimento, da atitude e prática no grupo intervenção, no sétimo e trigésimo dia pós-intervenção (p<0,05), com aumento de chance para o conhecimento adequado no sétimo (Odds Ratio=6,63 - Intervalo de Confiança:3,5-12,55) e no trigésimo dia (Odds Ratio=6,25 - Intervalo de Confiança:3,13 - 12,50). Neste grupo, a atitude foi adequada no sétimo (Odds Ratio= 6,11 - Intervalo de Confiança:3,28-11,39) e no trigésimo dia (Odds Ratio=6,44 - Intervalo de Confiança:3,49-11,89). Prática também adequada no sétimo (Odds Ratio=3,73 - Intervalo de Confiança:2,21-6,28) e trigésimo dia (Odds Ratio=4,91 - Intervalo de Confiança:2,90-8,32).
Conclusão: as gestantes que participaram da intervenção educativa apresentaram mais adequabilidade em relação ao conhecimento, à atitude e prática, quando comparadas às participantes do grupo controle. Registro Brasileiro de Ensaios Clínicos (REBEC) RBR-8wyp8j

DESCRITORES: Conhecimentos. Atitudes e prática em saúde. Hipertensão induzida pela Gravidez. Ensaio clínico. Educação em saúde. Tecnologia educacional. Enfermagem.

CONOCIMIENTO, ACTITUD Y PRÁCTICA SOBRE EL SÍNDROME HIPERTENSIVO GESTACIONAL ENTRE MUJERES EMBARAZADAS: ENSAYO CLÍNICO ALEATORIZADO

RESUMEN

Objetivo: evaluar el conocimiento, la actitud y la práctica sobre el Síndrome Hipertensivo Gestacional entre mujeres embarazadas, después de una intervención educativa.
Método: ensayo clínico controlado, aleatorizado y longitudinal, relacionado con la encuesta de Conocimiento, Actitud y Práctica sobre complicaciones del Síndrome Hipertensivo Gestacional, realizado con 120 mujeres embarazadas en una maternidad pública de Fortaleza-CE, Brasil. La recolección de datos tuvo lugar en tres momentos y se separó a las mujeres embarazadas en dos grupos de 60 participantes cada uno. Para las comparaciones cuantitativas, se aplicó la prueba t de Student o la de Mann-Whitney. Para estudiar las asociaciones cualitativas, se empleó la prueba de Chi-cuadrado o la prueba exacta de Fisher.
Resultados: se identificó una evaluación adecuada del conocimiento, la actitud y la práctica en el grupo intervención, a los siete y treinta días posteriores a las intervenciones (p<0,05), con un incremento en la probabilidad de conocimiento adecuado al día siete (Odds Ratio=6,63 - Intervalo de Confianza:3,5-12,55) y al día treinta (Odds Ratio=6,25 - Intervalo de Confianza:3,13 - 12,50). En este grupo, la actitud fue adecuada al día siete (Odds Ratio=6,11 - Intervalo de Confianza:3,28 -11,39) y al día treinta (Odds Ratio=6,44 - Intervalo de Confianza:3,49-11,89). La práctica también resultó adecuada al día siete (Odds Ratio=3,73 - Intervalo de Confianza:2,21-6,28) y al día treinta (Odds Ratio=4,91 - Intervalo de Confianza:2,90-8,32).
Conclusión: las mujeres embarazadas que participaron en la intervención educativa presentaron más adecuación en relación con el conocimiento, la actitud y la práctica, en comparación las participantes del grupo control. Registro Brasileño de Ensayos Clínicos (REBEC) RBR-8wyp8j

DESCRIPTORES: Conocimientos. Actitudes y prácticas en salud. Hipertensión inducida por el embarazo. Ensayo clínico. Educación en salud. Tecnología educativa. Enfermería.

INTRODUCTION

Gestational hypertension is defined as the occurrence of systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg, on two occasions at least four hours apart after 20 gestational weeks, in women with previously normal values[1].

It is estimated that Gestational Hypertensive Syndrome (GHS) affects nearly 5% to 8% of all the pregnant women worldwide. In Brazil, GHS is the leading cause of maternal mortality, being the main responsible for the high number of perinatal deaths, in addition to the significant increase in the number of neonates with sequelae[2–3].

When considering the high incidence of GHS, as well as its magnitude and impact on the perinatal outcome and the current care policy for high-risk pregnant women, it is urgent to evidence the need for specialized care measures for pregnant women, through specialized and good quality prenatal care[4]. However, some pregnant women "lack" information regarding hypertensive syndromes, requiring more effective actions by the professionals, with regard to their prevention and to health promotion, in order to focus on possible complications and on the appropriate treatment[5].

A study carried out in Brazil pointed out that the majority of the pregnant women who participated stated weaknesses in relation to the precise guidelines about GHS during the prenatal consultations. Despite this, it was observed that the nurses were valued for their work[6].

During pregnancy, it is important that the health professionals perceive risks or complications early in time, so that they can promote actions targeted at the risk factors, with the possibility of recovering maternal and neonatal well-being. In the comprehensive health care of pregnant women in prenatal care, whether at usual or high risk, protection of the women's lives must be a target; however, it is the duty of the State and the obligation of the professionals who assist women in the pregnancy period[7].

It is necessary to promote health, through education in the prenatal consultations and in-hospital care, in order to improve knowledge and humanize the care offered[8].

Therefore, nurses working in high-risk prenatal assistance should focus on the preventive care measures and on the educational actions, so that they can improve the assistance provided and recognize themselves as transforming subjects, with effective actions in care, making it possible to create a bond of trust with the pregnant women[9].

It is noteworthy that Nursing care must early identify the signs of GHS complications, with systematic care measures, based on instruments that direct essential actions focused on respecting the individuality of each pregnant woman, in order to extrapolate the biological context of the disease and consider the singularities and particularities[10].

In this context, the objective was to evaluate knowledge, attitude and practice about GHS among pregnant women, after an educational intervention.

METHOD

This is a controlled clinical trial[11], randomized and longitudinal, related to the Knowledge, Attitude and Practice (KAP) survey on the GHS complications, carried out from November 2017 to April 2018 with pregnant women attending a maternal-fetal outpatient clinic of a public tertiary-level maternity hospital.

This study design is characterized by providing research in human beings, with the objective of discovering or verifying the effects of pharmacological or non-pharmacological measures, in order to verify safety and/or efficacy[12].

The population consisted of the women who underwent high-risk prenatal care in the maternity hospital under study. The participants included in the sample were pregnant women of any age,

diagnosed with GHS, gestational age of up to 33 weeks and literate, and with sound conditions of verbal communication in the Portuguese language. Pregnant women with any psycho-emotional alteration that made it impossible for them to follow the interview were excluded from the study. The criteria for discontinuity or loss were as follows: interruption of pregnancy, withdrawal from participating in the research or impossibility of establishing telephone contact after five attempts, at different times and consecutive days.

The sample size was obtained using the sample calculation methodology, with the objective of estimating a proportion. The proportion of p=0.50 was considered, whose value represents the maximum variability of the binomial distribution, thus generating an estimate with the largest sample size possible.

The sample size (n) for a proportion, when weighing a finite population, can be estimated using the following formula:

$$n = \frac{Np(1-p)}{p(1-p) + (N-1)D^2},$$

In this formula, N represents the population of hypertensive pregnant women seen at the unit. D corresponds to the precision of the estimate to be measured, which can be described as B/Z, where B is the sampling error and Z is a percentile of the standard normal distribution.

The population considered for calculation of the sample size consisted of approximately 170 hypertensive pregnant women (estimated number based on data from one month of care). In addition to that, a 5% sampling error and a 5% significance level were assumed. Thus, the sample size obtained was 120 pregnant women. The pregnant women who made up the sample were divided between the two groups (control and intervention) using the randomization scheme by blocks of random size (Figure 1).

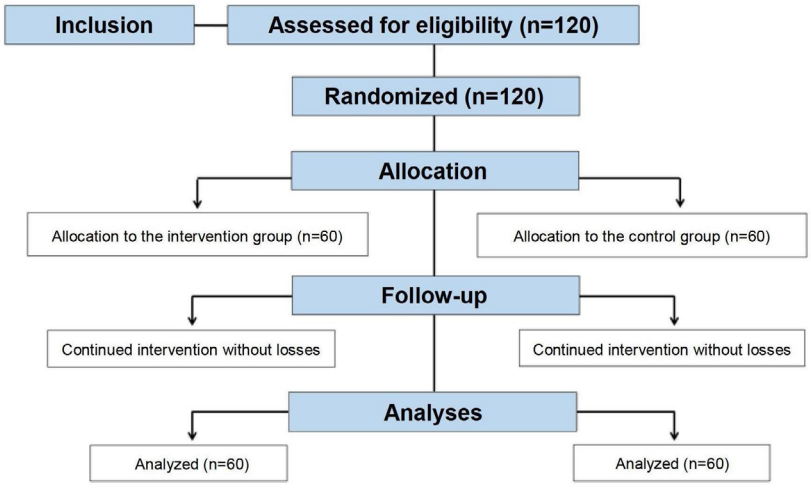

Figure 1 – Flowchart representing the participants' phases and follow-up. Fortaleza, CE, Brazil, 2018.

The pregnant women were distributed by the randomization process into two equally distributed groups with an allocation rate of 1:1 in parallel, Intervention Group (IG) and Control Group (CG). The intervention was carried out individually, with the educational booklet entitled Gestational Hypertensive Syndrome[13], having the motivational interview as a strategy. For data collection, the instrument was developed and validated.

Data collection was performed at three moments: before the intervention and regular consultation (pre-test) at the maternity hospital, after seven and 30 days of the usual prenatal consultation (CG), and the same period for the group to which the intervention was applied (IG), through telephone contact. Two research assistants were trained to apply the KAP survey (post test - 7th and 30th days)[14]. They were not aware of the study hypotheses or of the pregnant women allocated to the IG and CG.

The KAP survey, constructed and validated for conducting the research, was applied with the objective of measuring the primary outcome: analysis of the adequate and inadequate level of knowledge, attitude and practice about GHS.

Such concepts were grounded, knowledge being the understanding about a certain subject matter;[15] the attitude was defined as feelings about the subject matter under study, as well as prejudices that can permeate the topic;[15] and the practice was conceptualized as the way in which knowledge is demonstrated through actions[15].

For KAP analysis, the following definitions were used:

Adequate knowledge - when the pregnant woman had already heard about hypertension in pregnancy; if she considered that hypertension in pregnancy was a complication; if hypertension in pregnancy was related to Blood Pressure (BP); if at least two complications that hypertension in pregnancy could cause were known; why hypertension is acquired during pregnancy; when she responded to at least two symptoms related to GHS; if there is treatment; which the risk factors and types of GHS are (at least two of each)[15].

Adequate attitude - when the pregnant woman stated if it was useful/necessary to receive information in relation to GHS, early in pregnancy; when she asserted that the diet would have to be different from non-hypertensive pregnant women and when they responded, subjectively, to the main concern of the pregnant woman with GHS[15].

Adequate practice - when the pregnant woman checked her BP on a daily basis (routine); if she knew what treatment she was undergoing in relation to GHS; if she was following any specific diet to prevent complications in pregnancy; if she drank at least two liters of water during the day; if she had some physical rest during the day and if she performed some daily physical activity[15].

Inadequate practice for each axis - when the pregnant woman had negative responses for each circumstance explained.

Upon arrival for a routine appointment, the pregnant women were invited to participate in the study, and its objective was explained during the interview. All agreed to participate, after reading and signing the Informed Consent Form (ICF). There were no pregnant women under 18 years in the sample.

For comparisons between the groups in relation to the quantitative variables, the unpaired Student's t test or the non-parametric Mann-Whitney's test were used[16], according to data distribution, which was evaluated by means of the Shapiro-Wilk test.

To study the associations between the groups and the qualitative variables, the Chi-square test was used[17]. For cases whose assumptions of the Chi-square test were not met, Fisher's exact test was adopted[17].

The comparisons between the groups and periods in relation to the knowledge, attitude and practice variables were performed using Generalized Estimating Equations (GEE) models[18]. In the results, the estimates of relative risk obtained are presented, as well as the respective confidence intervals and p-values. To perform all the analyses, a 5% significance level and the Analytics Software & Solutions (SAS), version 9.4, and Statistical Package for Social Sciences (SPSS), version 24, statistical software programs were considered.

This research followed the ethical precepts referring to research studies with human beings, having obtained a favorable opinion for its development; it was also submitted to clinical registration

in the Brazilian Registry of Clinical Trials (*Registro Brasileiro de Ensaios Clínicos*, REBEC) database, with the following primary identifier: RBR-8wyp8j.

RESULTS

A total of 120 pregnant women with GHS who agreed to participate in this study were included at three moments: T0 - before the intervention and consultation in the maternity hospital, T1 - seven days after T0, T2 - thirty days after T0. They were separated into two groups (IG and CG), each group with 60 pregnant women. The two groups were compared according to the sociodemographic and gestational variables. Among the variables analyzed, a significant difference was identified when the groups were compared in relation to the gestational age median values (p=0.02) (Table 1).

Table 1 – Distribution of the pregnant women according to sociodemographic and gestational data and groups. Fortaleza, CE, Brazil, 2018. (n=120).

	Groups	n	Me*	SD†	R‡	Med§	IQD‖	p-value
Systolic Blood Pressure	IG¶	60	132.8	17.2	90.0	130.0	20.0	0.07††
	CG**	60	126.9	15.3	75.0	120.0	20.0	
Diastolic Blood Pressure	IG¶	60	81.3	13.3	80.0	80.0	10.0	0.42‡‡
	CG**	60	80.8	13.3	70.0	80.0	20.0	
Age	IG¶	60	30.5	7.0	29.0	31.0	9.5	0.47††
	CG**	60	31.4	6.9	28.0	32.0	11.5	
Schooling	IG¶	60	10.2	2.3	9.0	11.0	1.0	0.43‡‡
	CG**	60	9.9	2.6	9.0	11.0	3.0	
Income	IG¶	58	1,176.5	605.1	2,660.0	1,000.0	550.0	0.23‡‡
	CG**	60	1,114.7	794.6	4,315.0	954.0	975.0	
Number of appointments	IG¶	60	4.9	2.7	13.0	5.0	4.0	0.12‡‡
	CG**	60	5.7	2.7	14.0	6.0	3.0	
Gestational Age	IG¶	**60**	**24.4**	**8.1**	**27.0**	**25.6**	**15.1**	**0.02**‡‡
	CG**	**60**	**27.8**	**6.4**	**25.0**	**30.9**	**10.0**	
Pregnancy	IG¶	60	2.6	1.5	6.0	2.0	2.0	0.59‡‡
	CG**	60	2.9	1.9	7.0	3.0	3.0	
Deliveries	IG¶	60	1.0	1.0	4.0	1.0	2.0	0.25‡‡
	CG**	60	1.4	1.7	7.0	1.0	2.0	
Miscarriages	IG¶	60	0.6	1.0	4.0	0.0	1.0	0.92‡‡
	CG**	60	0.5	1.0	6.0	0.0	1.0	
Body Mass Index	IG¶	60	35.2	6.6	31.3	34.6	7.1	0.75‡‡
	CG**	60	35.3	7.7	43.0	34.3	10.6	

*Me =Mean; †SD =Standard Deviation; ‡R =Range; §Med =Median; ||IQD =Interquartile Deviation; ¶IG =Intervention Group; **CG =Control Group; ††Obtained by means of the unpaired Student's t test; ‡‡Obtained by means of the Mann-Whitney's test.

For the qualitative sociodemographic variables (religion, skin color and marital status), there was a significant association between the groups and the religion variable (p=0.04). The different religions presented the following percentages: Catholic, 52.6% in the IG and 73.2% in the CG; Evangelical, 36.8% in the IG and 25% in the CG; and Spiritist/others, 10.5% in the IG and 1.8% in the CG. Table 2 presents the descriptive statistics of the KAP survey by group, at the three moments (T0, T1, T2). In the data, a growing evolution is observed in the adequate construct throughout the periods, in both groups (IG and CG).

Table 2 – Descriptive analysis of the Knowledge, Attitude and Practice survey between the intervention and control groups, by collection moment. Fortaleza, CE, Brazil, 2018. (n=120).

Variable	Groups					
	Intervention			Control		
	T0	T1	T2	T0	T1	T2
Knowledge						
Inadequate (%)	52 (87)	7 (12)	10 (17)	47 (78)	36 (60)	35 (58)
Adequate (%)	8 (13)	53 (88)	50 (83)	13 (22)	24 (40)	25 (42)
Attitude						
Inadequate (%)	51 (85)	5 (8)	2 (3)	36 (60)	22 (37)	24 (40)
Adequate (%)	9 (15)	55 (92)	58 (97)	24 (40)	38 (63)	36 (60)
Practice						
Inadequate (%)	49 (82)	19 (32)	6 (10)	47 (78)	43 (72)	41 (68)
Adequate (%)	11 (18)	41 (68)	54 (90)	13 (22)	17 (28)	19 (32)

Table 3 shows the results of the comparisons between the groups and moments in relation to the KAP survey. In these analyses, the relative risk of presenting the “adequate” result was estimated. The results of these analyses indicated a significant increase in the probability of occurrence of the adequate construct, throughout the moments evaluated, in both groups. However, a higher risk was verified in the intervention group when compared to the control group.

Table 3 – Generalized Estimating Equations analysis of the Knowledge, Attitude and Practice survey between the intervention and control groups, by collection moment. Fortaleza, CE, Brazil, 2018. (n=120).

	Comparison	Relative Risk (RR)	95% C.I.		p-value
			L. L.	U. L.	
Knowledge	Intervention - Control (T0)	0.62	0.28	1.38	0.2370
	Intervention - Control (T1)	**2.21**	**1.60**	**3.05**	**< 0.0001**
	Intervention - Control (T2)	**2.00**	**1.45**	**2.75**	**< 0.0001**
	T1 - T0 (Intervention)	**6.63**	**3.50**	**12.55**	**< 0.0001**
	T2 - T0 (Intervention)	**6.25**	**3.13**	**12.50**	**< 0.0001**
	T2 - T1 (Intervention)	0.94	0.81	1.09	0.4386
	T1 - T0 (Control)	**1.85**	**1.24**	**2.75**	**0.0027**
	T2 - T0 (Control)	**1.92**	**1.21**	**3.05**	**0.0055**
	T2 - T1 (Control)	1.04	0.76	1.42	0.7963
Attitude	Intervention - Control (T0)	**0.38**	**0.19**	**0.74**	**0.0045**
	Intervention - Control (T1)	**1.45**	**1.18**	**1.78**	**0.0005**
	Intervention - Control (T2)	**1.61**	**1.30**	**1.99**	**< 0.0001**
	T1 - T0 (Intervention)	**6.11**	**3.28**	**11.39**	**< 0.0001**
	T2 - T0 (Intervention)	**6.44**	**3.49**	**11.89**	**< 0.0001**
	T2 - T1 (Intervention)	1.05	0.99	1.12	0.0833
	T1 - T0 (Control)	**1.58**	**1.18**	**2.12**	**0.0019**
	T2 - T0 (Control)	**1.50**	**1.10**	**2.05**	**0.0111**
	T2 - T1 (Control)	0.95	0.88	1.02	0.1573

Table 3 – Cont.

	Comparison	Relative Risk (RR)	95% C.I.		p-value
			L. L.	U. L.	
Practice	Intervention - Control (T0)	0.85	0.41	1.74	0.6487
	Intervention - Control (T1)	**2.41**	**1.56**	**3.74**	**< 0.0001**
	Intervention - Control (T2)	**2.84**	**1.94**	**4.16**	**< 0.0001**
	T1 - T0 (Intervention)	**3.73**	**2.21**	**6.28**	**< 0.0001**
	T2 - T0 (Intervention)	**4.91**	**2.90**	**8.32**	**< 0.0001**
	T2 - T1 (Intervention)	**1.32**	**1.13**	**1.53**	**0.0003**
	T1 - T0 (Control)	1.31	0.90	1.90	0.1585
	T2 - T0 (Control)	1.46	0.99	2.17	0.0593
	T2 - T1 (Control)	1.12	0.96	1.30	0.1575

95% C. I.: 95% Confidence Interval; L. L. Lower Limit; U. L.: Upper Limit

When comparing knowledge (T1-T0, RR 6.63, p<0.0001; and T2-T0, RR 6.25, p<0.0001) and attitudes (T1-T0, RR 6.11, p<0.0001; and T2-T0, RR 6.44, p<0.0001), it was observed that the pregnant women in the IG had six times more risk of presenting the adequate construct, when comparing the moments in relation to T0, this not being noticed in relation to moments T1-T2 in the same way in the CG, but in a lower proportion.

The practices were significant only in the IG, regardless of the moment (T1-T0, RR 3.73, p<0.0001; T2-T0, RR 4.91, p<0.0001; and T2-T1, RR 1.32, p=0.0003). Thus, the effect of the intervention using the educational booklet pointed to an adequate assessment of the KAP, in the IG, on the seventh and thirtieth days after the intervention, when compared to the CG (p<0.0005), with an increased chance of adequate knowledge on the seventh day for the IG (OR=6.63 – CI: 3.5-12.55) and the thirtieth day (OR=6.25 – CI: 3.13-12.50). In relation to the adequate attitude, on the seventh day for the IG (OR=6.11 – CI: 3.28-11.39) and on the thirtieth day (OR=6.44 – CI: 3.49-11.89). The practice was adequate for the IG on the seventh (OR=3.73 – CI: 2.21-6.28) and thirtieth (OR=4.91 – CI: 2.90-8.32) days (Table 3).

DISCUSSION

When comparing the participants' socioeconomic and obstetric data between the IG and the CG, gestational age was considered the most evident variable in relation to the difference in the mean values. Even though gestational hypertension is characterized by the occurrence of hypertension after the 20th week without presence of proteinuria[1], the perception of early risk factors is very important in this scenario. A study carried out in 2018 concluded that identification of the pregnant women at risk for the development of GHS must provide actions to prevent or delay clinical exposure in the most severe forms. It is considered that these observations are still the main predictive factors of hypertensive disorders in pregnancy[19].

Knowledge in relation to GHS was compared between the groups at the three moments (TO, T1 and T2). It was considered adequate with a higher proportion in the intervention group, in periods T1 and T2, considerably. Thus, the importance of education in health to improve the educational outcomes of the studied population is observed.

It is necessary for the professionals working in prenatal care to be concerned with the pregnant women's level of knowledge in relation to the complications that occur in the pregnancy-puerperal cycle, as prevention and treatment actions must be planned in view of the cultural and social aspects of these women.

A research study carried out in South Africa points to a deficit in the pregnant women's knowledge about symptoms, prevention of complications and impact of GHS on the fetus[20]. A Brazilian study corroborates the aforementioned research, as it points out that in prenatal consultations, technical assistance prevails, such as physical examination, request for laboratory tests and nutritional reports, potential characteristics of the biomedical model[21].

Thus, a study carried out in Nigeria emphasizes that, to prevent pregnant women from dying during pregnancy and delivery, they must receive basic preventive care and primary reproductive health services, including preconception and interconception care, in addition to the puerperal period, with an emphasis on education for pregnant women and sociocultural perceptions[22].

The data related to the pregnant women's attitude about GHS were inadequate at T0 (85%), T1 (8%) and T2 (2%), and at T0 (60%), T1 (37%), and T2 (40%) in the IG and CG, respectively. A more adequate attitude is indicated in the IG, during the T1 (92%) and T2 (97%) periods. A directly proportional relationship between knowledge and attitude was noticed since, in both constructs, the IG proved to be more adequate at moments T1 and T2. In relation to this, a study, also carried out with pregnant women and an educational intervention, presented a satisfactory relationship between knowledge and practice in the IG[23].

In this sense, pregnant women who have adequate knowledge and attitudes during pregnancy can direct prenatal care, delivery and puerperium with fewer risks and, consequently, without complications.

In relation to the comparative analysis of the women's practice in the two groups (IG and CG), periods T1 (68%) and T2 (90%) also remained more adequate in the IG, establishing a positive relationship with knowledge and attitude. The practice about GHS directly involves the treatment adhered to by the pregnant woman during high-risk prenatal care. Treatment of the syndrome depends on the blood pressure levels, on the gestational age and on the presence of symptoms and risk factors[23]. If treatment is not adequate, the pregnant woman can develop complications.

Therefore, control of maternal blood pressure presents satisfactory results for the maternal-fetal binomial; therefore, it reduces the risk of pre-eclampsia (PE) and eclampsia. The definitive course of action for PE and eclampsia is labor induction, and therapeutic measures are employed for control, since there is no cure to the present day[24].

The educational intervention contributed for the pregnant women in the IG to present adequacy, after seven and 30 days, when compared to the CG. Other studies that used the KAP survey point to educational practices performed by nurses as viable strategies to be included in the health services, aiming at quality assistance in the promotion of care[25–26].

In a randomized study, also carried out with women about knowledge and attitudes, it was evidenced that the educational action played a behavior-modifying role, being an important tool for success in the prevention of diseases[27].

CONCLUSION

In this research, the pregnant women who participated in the educational intervention presented more adequacy in relation to the knowledge, attitude and practice about GHS, when compared to those in the control group. Therefore, practice of this intervention with the use of educational technology (educational booklet), during high-risk prenatal care, is viable in the targeting and therapeutic adherence of hypertensive pregnant women, aiming to prevent complications throughout the pregnancy-puerperal cycle.

The participation of nurses is very important in planning and carrying out the educational activities during prenatal care, as these professionals work directly in the primary health care unit and in specialized prenatal care. However, it is proposed that educational actions during high-risk

prenatal care be worked on from an expanded perspective, as pregnant women go through multi-professional care.

Regarding the limitation of this research, the unfavorable physical structure of the researched outpatient clinic for carrying out the intervention is pointed out. Through the results of this research, it is suggested that the maternity hospital under study strengthens educational actions aimed at hypertensive pregnant women, as well as for all women vulnerable to complications in pregnancy, delivery and puerperium, as the incidence of this population is significant in the high-risk prenatal care provided in public maternity hospitals.

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NOTES

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CONTRIBUTION OF AUTHORITY

Study design: Jacob LMS, Shimo AKK.
Data collection: Jacob LMS.
Data analysis and interpretation: Jacob LMS, Mafetoni RR.
Discussion of the results: Jacob LMS, Mafetoni RR.
Writing and/or critical review of the content: Jacob LMS, Mafetoni RR, Lopes MHBM, Shimo AKK.
Review and final approval of the final version: Jacob LMS, Lopes MHBM, Shimo AKK.

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There are no conflicts of interest.

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