Programs Effectiveness in Educating Pregnant Women Techniques for Sustaining A Healthy During Covid 19 in Kirkuk City

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Abstract

Background and objective: Pregnancy is a condition of partial immune suppression which makes pregnant women riskier to viral infections, and the morbidity is increased even with seasonal influenza. Therefore, the COVID-19 epidemic may have dangers consequences for pregnant women. Although the high incidence of cases of COVID-19 is currently in China, the risk of outward transmission appears to be significantly high global concern. The objective is to assess pregnant women's practices about maintaining healthy dietduring covid 19 before and after implementation of instruction program and to determine the effectiveness of instruction program on pregnant women practices about healthydiet with corona virus,covid 19 in PHCC in Kirkuk city.

Methods: A quasi-experimental design was conducted during the period from (6th may 2021 through 20th August 2021) on non-probability sample (purposive) consists of (100) pregnant women) who visited the primary health care center. The sample practices were exposed to pretest, educational program, posttest. The study was conducted in Kirkuk city, Kirkuk health Director, three primary health care centers from the Kirkuk 1st sector which include (Al- Mansur center for primary health care, Al- Wassity center for primary health care, and Bader center for primary health care), than select three primary health care centers from Kirkuk 2nd sector which include (AL-Rasheed center for Primary health care, Azady center for Primary health care, AL-Nassir center for Primary health care, and Al- Mansur center for primary health care) Questionnaire was used as a tool of data collection. A pilot study was conducted at Al- Wassity center for primary health care in order to determine the reliability of the study and the testing the pregnant women practices about healthy diet with corona virus diseases 19. Data were analyzed through the application of descriptive and inferential statistical data analysis approach through the use of (SPSS) version 22.0.

Results: The results of the study have revealed that significant correlation between pretest and posttest periods after the implementation of education program for pregnant women Practices regarding healthy diet during corona virus and reducing infected by it. There were high significant correlations between pre and post periods at (p. value: 0.101) in evaluation of the effectiveness of the instruction program in the practices of pregnant women on healthy diet that's enhanced the immunity system to reduce the incidence of infection between Pre and post evaluation.

Conclusions: The study concluded that the educational program can be considered as an effective mean for the improvement of the pregnant women's practices about the importance healthy diet that's enhanced the immunity system during corona virus.

Keywords: Practices, Pregnant Women, Healthy Diet, Immunity System and Covid 19.

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Introduction

Emerging infections have been shown to have deferent effect on pregnant women and their neonate as shown by recent pandemic caused by 2009 pandemic H1N1 influenza virus and the more fetal effects of Sika virus[1].In 2020, a new global pandemic has emerged, caused by a new type of CoV called SARS-CoV-2, This pandemic is spread primary in Wuhan, China in December 2019, and involved almost every country in the world which lead to mostly mild upper respiratory tract infection and in a minority of cases lower respiratory tract symptoms called coronavirus disease-19[2] .On May 25th, 2020, more than 5,305,000 cases were reported with corona virus infection and more than 342,000 deaths with a case highly rate of 6.4%. The corona virus is different from its previous predecessors in that it is highly contagious and easily spread from human to human through respiratory droplets and direct contact which led to this large number of infected persons, the day-today numbers are still on the increase especially in Europe[3]. Pregnancy is a condition of partial immune suppression which makes pregnant women riskier to viral infections, and the morbidity is increased even with seasonal influenza. Therefore, the COVID-19 epidemic may have danger consequences for pregnant women. Although the high incidence of cases of COVID-19 is currently in China, the risk of outward transmission appears to be significantly high global concern. Human to human transmission of the virus is proven to occur,1,2 perhaps even from asymptomatic patients, and the mortality is substantial, especially among weakly, elderly patients with comorbidities.[4] Aims of the study was to assess pregnant women's practices about maintaining healthy diet during corona virus covid-19pandemic in primary health care center in Kirkuk city.

Methods

Descriptive study wasconduct to assess pregnant women's knowledge about transmission methods of corona virus covid-19 in primary health care center in Kirkuk city. and then the current study began after officialpermission was obtained from the Ministry of Health, Department of Primary Health Care. Thedata for the original study were collected from pregnant women in (Al-Mansur center for primary health care, Al-Wassity center for primary health care, and Bader center for primary health care) these was selected from Kirkuk 1st sector, then (AL-Rasheed center for Primary health care, and Azady center for Primary health care), selects from Kirkuk 2nd sector. The study started from the 1st of December 2020 until 15th September 2021.The period of the data collection extends from 1st march to 15th July of 2021, apurposivesample for this study selected (100) pregnant women (50 control sample, 50 study groub) who are visited the maternity unit in the PHCC.The tool was constructed using a review of literature from published research studies. it is composed of the first part represents the demographic variables of women participatingin the current study, which include: age, educational level, Occupation, Place of residence, family income, Relevancy to husband, smoking). The second part are medical history which consists of some variable (diseases) if the study sample was suffering from it include (Hypertension,

diabetes, asthma, allergy, renal diseases, heart diseases, other problems, do you take any medication, and history of previous surgery).Third Part Pregnant Woman practices about healthy diet during Corona Virus Disease. (14 items) and Practices about when pregnant woman should be wash her hands (9 items),all items scored by using three levels scale including; always, sometime, never, from zero (never), one to (sometime) and two to (always). The level of overall practices was estimated by calculating the mean of score and the cutoff point for the total mean score of practices as follow:

poor practices (0 – 23), fair practices (24 – 47), and good practices (48 – 70). The validity of the questionnaire was established through a panel of (8) experts chosen to examine the questionnaire. In order to give their opinions about the suitability of the items included in the tool. Some corrections were done to the arrangements of the items. The internal consistency of the questionnaire was (r = 0.75). Statistical Package for the Social Science (SPSS, Version 22) was by using descriptive statistics, and inferential statistical methods. The data significant at P. value ≤ 0.05.

Results

The descriptive analysis of socio-demographic variables (table 1) shows that pregnant women are with age (29.42 ± 6.25) year among the study group and (29.84 ± 7.85) year among the control group; the highest percentage age group refer to 20-25 year (28%) and 26-30 year (24%) among the study group, and 36-40 year (26%) and 20-25 year (24%) among the control group. Regarding level of education, the women in the study group show that (26%) of them graduated from primary school and (22%) graduated from institute / college while those in the control group show that (24%) are graduated from the primary school and the same from secondary school.

The occupational status refers that more of the pregnant women are housewives among both groups; the study and control group (74% and 76%) respectively, and only (16%) in the study group and (8%) in the control group are working as governmental employees.

More than half of pregnant women are reporting they are resident at urban as seen among (62%) of women in the study group and (52%) in the control group. Regarding family monthly income, (56%) in the study group and (42%) in the control group perceive sufficient monthly income, while (32%) in the study group, and (40%) in the control group perceive barely sufficient monthly income. The relevancy to husband indicates that only (36%) of women in the study group, and (34%) in the control group have relation with their husbands. The smoking status refers that only (4%) in the study group and (8%) in the control group are smokers, while (60%) of husbands in the study group and (68%) in the control group are smokers. The contingency coefficients among the variables in the study and control groups show that there are no significant differences among all variables of the study.

Table (1): Distribution of the Sample According to their Socio-demographic Characteristics

List	Characteristics	Study Group		Control Group		C.C
		f	%	f	%	
1	Age					
	< 20 year	3	6	6	12	p = 0.892
	20 – 25 year	14	28	12	24	Sig: NS
	26 – 30 year	12	24	7	14	
	31 – 35 year	11	22	9	18	
	36 – 40 year	9	18	13	26	
	41 ≤ year	1	2	3	6	
	Total	*50*	*100*	*50*	*100*	
	Mean ± Standard deviation	*29.42 ± 6.25*		*29.84 ± 7.85*		
2	Level of education					
	Doesn't read & write	4	8	3	6	p = 0.490
	Read & write	7	14	7	14	Sig: NS
	Primary school	13	26	12	24	
	Intermediate school	7	14	5	10	
	Secondary school	8	16	12	24	
	Institute/ college	11	22	9	18	
	Postgraduate	0	0	1	2	
	Total	*50*	*100*	*50*	*100*	
3	Occupation					
	Housewife	37	74	38	76	p = 0.444
	Governmental employee	8	16	4	8	Sig: NS
	Private work	3	6	2	4	
	Retired	1	2	1	2	
	Student	1	2	5	10	
	Total	*50*	*100*	*50*	*100*	
4	Residency					
	Rural	10	20	14	28	p = 0.098
	Urban	31	62	26	52	Sig: NS
	Sub-urban	9	18	10	20	
	Total	*50*	*100*	*50*	*100*	
5	Perceived family monthly income					
	Highly sufficient	1	2	4	8	p = 0.738
	Sufficient	28	56	21	42	Sig: NS
	Barely sufficient	16	32	20	40	
	Insufficient	5	10	5	10	
	Total	*50*	*100*	*50*	*100*	
6	Relevancy to husband					
	Relative	18	36	17	34	p = 0.096
	Not relative	32	64	33	66	Sig: NS
	Total	*50*	*100*	*50*	*100*	
7	Smoking					
	No	48	96	46	92	p = 0.670
	Yes	2	4	4	8	Sig: NS
	Total	*50*	*100*	*50*	*100*	
8	Husband smoking					
	No	30	60	34	68	p = 0.108
	Yes	20	40	16	32	Sig: NS
	Total	*50*	*100*	*50*	*100*	

f: Frequency, %: Percentage, C.C: Contingency coefficient, p: Probability, Sig: Significance,

S: Significant, N.S: Not significant

Table 2 displays the history of prenatal visits; the findings show that (84%) of pregnant women in the study group, and (78%) of them in the control group are reporting regular prenatal visits that are (1–3) visits as seen among (62%) in the study group, and (56%) in the control group.

Regarding types of health care visits that refer to one visit, the primary health care was attended by (50%) of women in the study group, and (30%) of women in the control group, hospital was attended by (20%) of women in the study group, and (18%) of women in the control group, and private clinic was attended by (70%) of women in the study group, and (60%) of women in the control group.

The contingency coefficients among the variables in the study and control groups show that there are no significant differences among all variables of the study.

Table (2): Distribution of the Sample According to their Prenatal Health Care Visits

List	History	Study Group		Control Group		C.C
		f	**%**	**f**	**%**	
1	Prenatal visits					
	No	8	16	11	22	p = 0.547
	Yes	42	84	39	78	Sig: N.S
	Total	*50*	*100*	*50*	*100*	
2	Number of prenatal visits					
	None	8	16	11	22	p = 0.094
	1 – 3	31	62	28	56	Sig: N.S
	4 – 6	11	22	11	22	
	Total	*50*	*100*	*50*	*100*	
3	Primary health care					
	No	25	50	35	70	p = 0.165
	1	25	50	15	30	Sig: N.S
	Total	*50*	*100*	*50*	*100*	
4	Hospital					
	No	40	80	41	82	p = 0.203
	1	10	20	9	18	Sig: N.S
	Total	*50*	*100*	*50*	*100*	
5	Private clinics					
	No	15	30	20	40	p = 0.349
	1	35	70	30	60	Sig: N.S
	Total	*50*	*100*	*50*	*100*	

f: Frequency, %: Percentage, C.C: Contingency coefficient, p:Probability, Sig: Significant, N.S: Not significant

Table (3) presents the mean score for items related to practices of maintaining healthy diet during pregnancy with COVID-19; the finding in the study group indicates that women during the pre-test time show poor to fair level of practices in which they show poor level in items 2, 3, 4, 7, and 14; and show fair level in items 1, 6, 8, 9, 10, 11, 12, and 13, while show good in item 5 only. During the post-test 1 and post-test 2, the women are showing good level of practices among all items.

The finding in the control group show the same level of practices over the three time (pre-test, post-test 1, and post-test 2) in which they show fair level in all items except items 7, 8, and 12 that show poor and item 5 that show good.

Table (5) indicates that there is high significant relationship (strong reverse) between women' practices and their occupation at p-value= 0.00, and there is also significant relationship between women' practices and their family monthly income at

Table (4) displays that analysis of RM-ANOVA test indicate that instructional program was highly effective on pregnant women' practices in the study group evidenced by high significance associated with "Greenhouse-Geisser" correction at p-value=0.001. It is clear out of descriptive the noticeable increasing of mean score for practices during pre-test time through post-test 1 and 2 that indicate the effectiveness of instructional program.

Figure (1) reveals the noticeable increasing in practices among study group women during post-test 1 and 2, on the contrary among women in the control group that show not significant increasing in practices during post-test 1 and 2.

p-value = 0.033 among women in the study group, while there is no significant relationship has been seen among women' practices with regard to their socio-demographic variables.
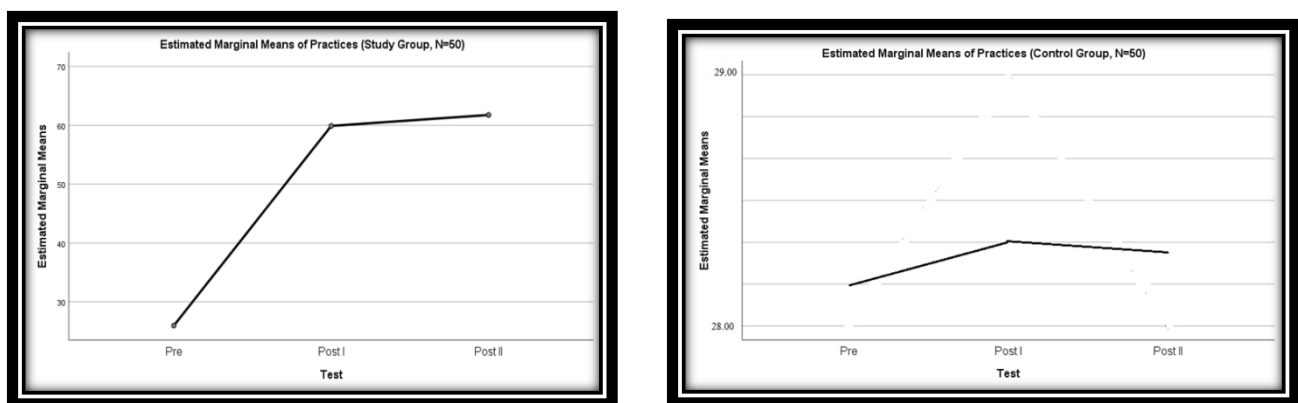

Figure (1): Estimated Marginal Mean for Mothers' Practices among Study and Control Groups

Table (3): Evaluation of Women' Practices about maintaining Healthy Diet during COVID-19 during Pregnancy among Study and Control Group

List	Practices about maintaining healthy diet	Stud Group (N=50) Pre-test M.S	Post-test I Eval.	Post-test II M.S	Eval.	Control Group (N=50) Pre-test M.S	Eval.	Post-test I M.S	Eval.	Post-test II M.S	Eval.
1	Are you eating a variety of food include fruits vegetables?	1.20	Fair	1.84	Good	1.88	Good	1.22	Fair	1.22	Fair	1.22	Fair
2	Did you Cut back on your salt intake?	0.54	Poor	1.60	Good	1.76	Good	0.80	Fair	0.80	Fair	0.80	Fair
3	Do you Eat moderate amount of fats and oils?	0.60	Poor	1.50	Good	1.74	Good	0.80	Fair	0.80	Fair	0.80	Fair
4	Have you Limited your sugar intake?	0.38	Poor	1.60	Good	1.76	Good	0.88	Fair	0.88	Fair	0.88	Fair
5	Did you Avoid hazardous and harmful alcohol narcotic drug using?	1.56	Good	1.92	Good	1.92	Good	1.80	Good	1.80	Good	1.80	Good
6	Are you Breast feeds for your baby or young children?	0.76	Fair	1.68	Good	1.66	Good	0.78	Fair	0.78	Fair	0.78	Fair
7	Do you Eat ginger with your food?	0.52	Poor	1.58	Good	1.50	Good	0.64	Poor	0.64	Poor	0.64	Poor
8	Do you Eat garlic with your food	0.70	Fair	1.74	Good	1.76	Good	0.46	Poor	0.46	Poor	0.46	Poor
9	Do you Drink enough amounts of water and fluid replacement?	0.92	Fair	1.92	Good	1.82	Good	0.70	Fair	0.70	Fair	0.70	Fair
10	Do you eat fruits and vegetables rich in vitamin C like orange, lemon, Pepper, potato, and broccoli?	0.74	Fair	1.82	Good	1.88	Good	0.94	Fair	0.94	Fair	0.94	Fair
11	Do you eat food rich in zinc such as red meat, yoghurt, chicken, and cashews?	0.82	Fair	1.70	Good	1.86	Good	0.84	Fair	0.84	Fair	0.84	Fair
12	Do you take vitamin D supplement or milk products, egg, and fish?	0.78	Fair	1.66	Good	1.80	Good	0.56	Poor	0.56	Poor	0.56	Poor
13	Is your exposure to sunlight at least one-hour to tow time a day?	0.72	Fair	1.82	Good	1.90	Good	0.86	Fair	0.86	Fair	0.86	Fair
14	**Did your food contain adequate amount of legumes (e.g. lentils, beans)**	**0.64**	Poor	**1.70**	Good	**1.90**	Good	**0.74**	Fair	**0.74**	Fair	**0.74**	Fair

M.S: Mean of score, Eval: Evaluation, Poor= 0 – 0.66, Fair= 0.67– 1.33, Good= 1.34 – 2

Table (4): Repeated Measure Analysis of Variance (RM-ANOVA) Test for Effectiveness of Instructional Program on Mothers' Practices regarding COVID-19 among the Study Group (N=50)

Descriptive			Within-Subjects Effect							
Practices	Mean (S.D)		Source	Type III Sum of Squares	df	Mean Square	F	P-value	Sig.	Partial Eta Squared
Pre-test	25.94 (4.938)	Time	Sphericity Assumed	40663.560	2	20331.780	1250.710	.001	H.S	.962
			Greenhouse-Geisser	40663.560	1.777	22886.704	1250.710	.001	H.S	.962
			Huynh-Feldt	40663.560	1.839	22113.546	1250.710	.001	H.S	.962
Post-test I	59.90 (3.770)		Lower-bound	40663.560	1.000	40663.560	1250.710	.001	H.S	.962
		Error (Time)	Sphericity Assumed	1593.107	98	16.256				
Post-test II	61.76 (3.526)		Greenhouse-Geisser	1593.107	87.060	18.299				
			Huynh-Feldt	1593.107	90.104	17.681				
			Lower-bound	1593.107	49.000	32.512				

S.D: Standard Deviation, df: Degree of Freedom, f: F-statistics, P-value: probability value, Sig: Significance, H.S: High Significant

Table (5): Correlation among Mothers' Practices and their Socio-demographic Variables in the Study and control Groups.

Practices Variables	Study Group (N=50)			Control Group (N=50)		
	Pearson correlation	p-value	Sig	Pearson correlation	p-value	Sig
Age	0.122	0.400	N.S	-0.159	0.270	N.S
Level of education	-0.072	0.624	N.S	-0.165	0.251	N.S
Occupation	- 0.397	0.004	**H.S**	-0.071	0.625	N.S
Residency	0.039	0.787	N.S	0.112	0.437	N.S
Monthly income	0.302	0.033	**S**	-0.067	0.643	N.S
Relevancy to husband	-0.205	0.153	N.S	0.094	0.514	N.S

P: probability, Sig: Significance, N.S: Not Significant, S: Significant, H.S: High significant

Discussion

The present study found there are no significant differences (P>0.05) between the study and control group, which is consistent and supported by[5] who showed that there were no significant differences between the demographic characteristics of the women in both groups. More than half (73%) were housewives, (56%) from intercity, (37%) primary school graduated.[6] emphasized that there were no significant differences between the study and control group in age, social status, educational level, and job. revealed that the mean age and SD (28.46 ± 5.23) years in the study group, and (29.11 ± 5.95) in the control group. the majority of both group were primary school graduated (Sarri et.al., 2021). The highest percentage of them (74%) and (76%) were house wife. Although, the present study is inconsistent with [7] who mentioned that the mean age and SD (23.41 ± 2.27) years in the study group, the majority of them (79.2%) were university

graduates and more than two-thirds (73%) employed. The mean age and SD (25.7 ± 3.5) years in the control group, the highest percentage of them (79.8%) were university graduates and more than two-thirds (83.2%) employed. Regarding monthly income (56%) of the study group had sufficient monthly income while (48%) had the same monthly income from control group, (64%) and (66%) respectively from study sample and control sample were not relatively to their husbands. the majority of both study sample and control group were not smoker.[8] emphasized that there were no significant differences between the study and control group in family monthly income, relationship between partner and smoking with alcoholism status for both parent. Finally, this result in disagreement with[9] in their study which conducting on 120 pregnant women (60 study sample and 60 control sample) to compare their awareness about protection

methods of infectious diseases during pregnancy in Saudi Arabia who found only (29.4%) had sufficient monthly income for their family's, while (79.3%) had highly sufficient. majority of the study sample (86%) relative to their husband. And (33.7%) of the control group smoker women started before pregnancy at 3 years ago. The differences in the above studies could be due to this study conducted among the different sample, different setting, and different inclusion criteria, especially the present study sample were had previously infected with covid 19 pandemic.Table 3 and 4 The result of a study conducting in African by Kurdoglu and Khaki in2020 [10].

According to pregnant women' practices about washing hands during covid 19 pandemic (table 4) results show that there are highly significant differences between study sample and control group, that women show poor to fair level of practices during the pre-test time. But in the post-test 1 and post-test 2, the women are showing good practices among all items in study sample. While the finding in the control group show fair and poor practices overall three times (time one, time two and time three). According to woman practices regarding healthy diet during COVID-19 during Pregnancy (table 4.11) results show that there are highly significant differences

between study sample and control group, that women show poor to fair level of practices during the pre-test time. But in the post-test 1 and post-test 2, the women are showing good practices among all items in study sample. While the finding in the control group show fair and poor practices overall three times (time two, time two and time three).[11] consisted with my study result which found (78%) of sampleon their study had no level of practices toward benefits of some food to enhance the immunity system during infection disease, like (fruits vegetables, ginger, fluid replacement, vitamin C and vitamin D supplement) So, (37%) of women in a study conducted in Pakistan by [12]exposure to sun light during infected with covid 19 to maintain good sours of vitamin D, which is important to improved good immunity, but this incidence increased to (89%) after implementing education intervention. The result of a study conducting in African by [13] disagree with my study result because they found (68%) of study sample, and (71%) of control group had good practice level about protective measurers from corona virus, and nutritional therapy to improve high degree of immunity during some pandemic diseases, before an educational intervention.

Conclusion

There is a significant correlation between pretest and posttest periods after the implementation of instruction program for pregnant women practices regarding maintenance healthy diet during covid 19 virus. The finding in the control group show poor to fair level of practices which related to covid 19 over the three time (pre-test, post-test 1, and post-test 2).

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