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Effectiveness of Instructional Program on Women Knowledge about Infant Protection during Breast Feeding by Infected Woman with COVID-19 in Kirkuk City

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Abstract---Background: In women affected by other coronavirus infections such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV), the mortality rate appeared higher in women affected in pregnancy compared with non-pregnant women. COVID-19 prompted implementation of public health protocols to control the transmission of the virus, many of them required social distancing, hand washing, and lockdown procedures, but has also resulted in creating public anguish and massive fear, especially among the unaffected persons. Objectives: To assess pregnant women's knowledge about who can protect the baby during Breast feeding when mother infected by corona virus before and after implementation of instruction program and to determine the effectiveness of instruction program on pregnant women knowledge about protection methods of neonate during pandemic. Methods: A quasi-experimental design was conducted during the period from (6th June 2021 through 20th August 2021) on non-probability sample (purposive) consists of (100 pregnant women) who visited the primary health care center. The sample knowledge was 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)

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 Knowledge about protection baby during breast feeding from mother infected by corona virus diseases 19. Data were collected through the questionnaire. Data were analyzed through the application of descriptive and inferential statistical data analysis approach through the use of (SPSS) version 22.0 and Excel system. Results: The results of the study have revealed that significant correlation between pretest and posttest periods after the implementation of instructional program for pregnant women regarding protection methods of baby during breast feeding .There were high significant correlations between pre and post periods at (p. value: 0.100) in evaluation of the effectiveness of the instruction program in the knowledge of pregnant women on infant protection methods to reduce the incidence of baby 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 knowledge about the importance protection methods of infants from infected mother with corona virus. Recommendations: All patients including pregnant women should be evaluated for fever and signs and symptoms of a respiratory infection. Ideally, screening procedures begin before arrival on a labor and delivery unit or prenatal care clinic. Social support programs should be designed to women in the antenatal period.

Keywords---knowledge, lactation women, protection methods methods, neonate and COVID-19.

Introduction

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, (Pena et.al, 2020). 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. Previous studies indicated that corona virus infection during pregnancy is linked with an increased risk of spontaneous miscarriage, premature labor and intrauterine growth retardation. in the current time, studies in pregnant women with COVID-19 have indicated more maternal and neonatal complications. Importantly, respiratory viral infection such as influenza, its easily develop during pregnancy, that means pregnant women may be more vulnerable to COVID-19 and require prioritized medical care. (Bekele et.al,2020) In women affected by other coronavirus infections such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome

(SARS-CoV), the mortality rate appeared higher in women affected in pregnancy compared with non-pregnant women. COVID-19 prompted implementation of public health protocols to control the transmission of the virus, many of them required social distancing, hand washing, and lockdown procedures, but has also resulted in creating public anguish and massive fear, especially among the unaffected persons (Abdulla et. al, 2020).

Aims of the study

The aim of this study was to assess pregnant women's knowledge about protection of infant during breast feeding from infected mother with corona virus covid-19 in primary health care center in Kirkuk city.

Methodology

The aim of this study was to assess pregnant women's knowledge about transmission methods of corona virus covid-19 in primary health care center in Kirkuk city. To carry out the study, a choice was made descriptive design, and then the current study began after official permission was obtained from the Ministry of Health, Department of Primary Health Care. The data 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, a purposive sample for this study selected (100) pregnant women who are visited the maternity unit in the PHCC. The tool was constructed using a review of literature from published research studies (11,12) it is composed of the first part represents the demographic variables of women participating in 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 Knowledge about protection of baby during breast feeding by infected mother, this part consists of (10 items), all items scored by using two levels scale including (I'm don't know, and I'm know;) from zero (don't know) and one (for now). The level of overall knowledge was estimated by calculating the mean score and the cutoff point for the total score of knowledge as follow: poor knowledge (0 – 13), fair knowledge (14 – 26), and good knowledge (27 – 40). 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 24) was by using descriptive statistics, and inferential statistical methods. The data significant at P value ≤ 0.05 .

Results

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

List	Characteristics	Study Group		Control Group		C.C
		f	%	f	%	
1	Age					p = 0.892 Sig: NS
	< 20 year	3	6	6	12	
	20 – 25 year	14	28	12	24	
	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					p = 0.490 Sig: NS
	Doesn't read & write	4	8	3	6	
	Read & write	7	14	7	14	
	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					p = 0.444 Sig: NS
	Housewife	37	74	38	76	
	Governmental employee	8	16	4	8	
	Private work	3	6	2	4	
	Retired	1	2	1	2	
	Student	1	2	5	10	
	Total	50	100	50	100	
4	Residency					p = 0.098 Sig: NS
	Rural	10	20	14	28	
	Urban	31	62	26	52	
	Sub-urban	9	18	10	20	
	Total	50	100	50	100	
5	Perceived family monthly income					p = 0.738 Sig: NS
	Highly sufficient	1	2	4	8	
	Sufficient	28	56	21	42	
	Barely sufficient	16	32	20	40	
	Insufficient	5	10	5	10	
	Total	50	100	50	100	
6	Relevancy to husband					p = 0.096 Sig: NS
	Relative	18	36	17	34	
	Not relative	32	64	33	66	
	Total	50	100	50	100	
7	Smoking					

	No	48	96	46	92	p = 0.670 Sig: NS
	Yes	2	4	4	8	
	Total	50	100	50	100	
8	Husband smoking					p = 0.108 Sig: NS
	No	30	60	34	68	
	Yes	20	40	16	32	
	Total	50	100	50	100	

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

The descriptive analysis of socio-demographic variables 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.

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					p = 0.547 Sig: N.S
	No	8	16	11	22	
	Yes	42	84	39	78	
	Total	50	100	50	100	
2	Number of prenatal visits					p = 0.094 Sig: N.S
	None	8	16	11	22	
	1 – 3	31	62	27	54	
	4 – 6	11	22	12	24	
	Total	50	100	50	100	
3	Primary health care					p = 0.165 Sig: N.S
	No	25	50	35	70	
	1	25	50	15	30	
	Total	50	100	50	100	
4	Hospital					p = 0.203 Sig: N.S
	No	40	80	41	82	
	1	10	20	9	18	
	Total	50	100	50	100	
5	Private clinics					p = 0.349 Sig: N.S
	No	15	30	20	40	
	1	35	70	30	60	
	Total	50	100	50	100	

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

This table 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 (54%) 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

Table (3): Evaluation of Women' Knowledge about Infant Protection during Breast Feeding by Infected Mother among Study and Control Group

List	Knowledge about infant protection	Study Group (N=50)						Control Group (N=50)					
		Pre-test		Post-test I		Post-test II		Pre-test		Post-test I		Post-test II	
		M. S	Eval .	M. S	Eval .	M. S	Eval .	M. S	Eval .	M. S	Eval .	M. S	Eval .
1	Mother should wash her hands before and after touching her baby.	0.58	Fair	0.88	Good	1.00	Good	0.66	Fair	0.66	Fair	0.66	Fair
2	Mother should practice respiratory hygiene by wearing a mask and not sneezing in front of a baby during breast feeding	0.56	Fair	0.92	Good	0.94	Good	0.66	Fair	0.66	Fair	0.66	Fair
3	All surfaces should be kept clean and disinfect she has touched	0.40	Fair	0.82	Good	0.94	Good	0.58	Fair	0.58	Fair	0.58	Fair
4	The mother should follow recommendations for proper pump cleaning after each use	0.30	Poor	0.88	Good	0.86	Good	0.38	Fair	0.38	Fair	0.38	Fair
5	The woman should use private transport or an ambulance when possible to reach the maternity unit	0.34	Fair	0.88	Good	0.90	Good	0.32	Poor	0.32	Poor	0.32	Poor
6	Keep the room free from any unnecessary items (decorations, and extra chairs)	0.22	Poor	0.88	Good	0.92	Good	0.38	Fair	0.38	Fair	0.38	Fair
7	Breastfeeding is encouraged and is a potentially important source of antibody protection for the infant	0.46	Fair	0.82	Good	0.84	Good	0.50	Fair	0.50	Fair	0.50	Fair
8	A dedicated breast pump you can be used.	0.32	Poor	0.86	Good	0.94	Good	0.38	Fair	0.38	Fair	0.38	Fair
9	After pumping, all parts of the pump that's contact with breast milk should be thoroughly washed, and the entire pump should be appropriately disinfected	0.34	Fair	0.94	Good	0.88	Good	0.32	Poor	0.32	Poor	0.32	Poor
10	Expressed breast milk should be feed to the newborn by a healthy caregiver	0.24	Poor	0.92	Good	0.92	Good	0.46	Fair	0.46	Fair	0.46	Fair

M.S: Mean of score, Eval: Evaluation, Poor= 0 – 0.33, Fair= 0.34– 0.67, Good= 0.68 – 1

This table presents the mean score for items related to knowledge about infant protection during breast feeding if mothers infected with COVID-19; the finding in the study group indicates that women during the pre-test time show poor level of knowledge in items 4, 6, 8, and 10 and fair level in items 1, 2, 3, 5, 7, and 9. During the post-test 1 and post-test 2, the women are showing good level of knowledge among all items.

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

Descriptive		Within-Subjects Effect								
Knowledge	Mean (S.D)	Source		Type III Sum of Squares	df	Mean Square	F	P-value	Sig.	Partial Eta Squared
Pre-test Post-test I Post-test II	15.20 (3.090) 35.60 (2.611) 36.82 (2.505)	Time	Sphericity Assumed	14751.213	2	7375.607	962.736	.001	H.S	.952
			Greenhouse-Geisser	14751.213	1.973	7475.313	962.736	.001	H.S	.952
			Huynh-Feldt	14751.213	2.000	7375.607	962.736	.001	H.S	.952
			Lower-bound	14751.213	1.000	14751.213	962.736	.001	H.S	.952
		Error(Time)	Sphericity Assumed	750.787	98	7.661				
			Greenhouse-Geisser	750.787	96.693	7.765				
			Huynh-Feldt	750.787	98.000	7.661				
			Lower-bound	750.787	49.000	15.322				

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

This table displays that analysis of RM-ANOVA test indicate that instructional program was highly effective on pregnant women' knowledge 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 knowledge during pre-test time through post-test 1 and 2 that indicate the effectiveness of instructional program.

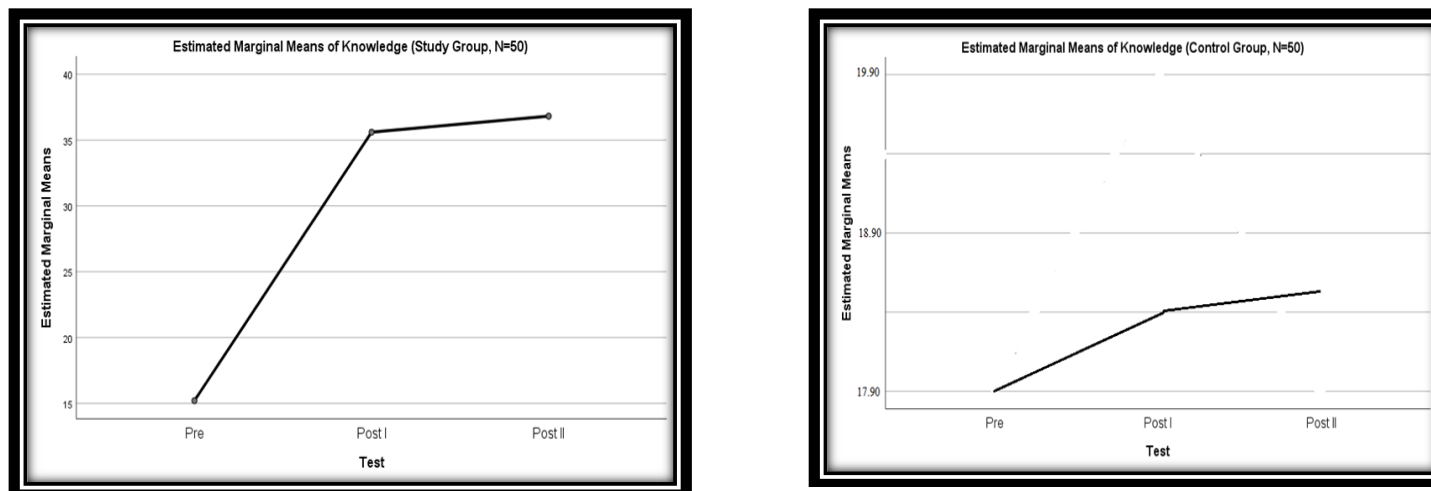


Figure (1): Estimated Marginal Mean for Mothers' Knowledge among Study and Control Groups

This figure reveals the noticeable increasing in knowledge 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 knowledge during post-test 1 and 2.

Table (5): Correlation among Women' Knowledge and their Socio-demographic Variables in the Study and control Groups

Variables \ Knowledge	Study Group (N=50)			Control Group (N=50)		
	Pearson correlation	p-value	Sig	Pearson correlation	p-value	Sig
Age	0.144	0.317	N.S	0.064	0.661	N.S
Level of education	-0.139	0.337	N.S	-0.001	0.997	N.S
Occupation	0.186	0.197	N.S	-0.131	0.363	N.S
Residency	0.058	0.690	N.S	0.094	0.516	N.S
Monthly income	0.166	0.250	N.S	0.230	0.108	N.S
Relevancy to husband	0.213	0.138	N.S	-0.179	0.214	N.S

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

This table reveals that there is no significant relationship among women' knowledge with regard to their socio-demographic variables of: age, education, occupation, residency, monthly income, and relevancy in both group; the study and control group.

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 (Bellizzi et.al, 2020) 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. (Williams et.al, 2019) emphasized that there were no significant differences between the study and control group in age, social status, educational level, and job. (Mehrunisha., 2021) 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. The highest percentage of them (74%) and (76%) were housewife. According to prevention measures and protecting neonate during covid 19, there is no significant differences between study sample and control group before implementing instructional program, but there are highly significant differences in study sample knowledge between pre- instructional program and post- program at different time. that means the pregnant women knowledge increased after educational intervention. This result in agreement with study carried in Nigeria, by (Nawafor et. al., 2021) revealed that (82.9 %) of the pregnant women were presented with adequate knowledge about covid 19, (how can spread, clinical features, complication, prevention and protection methods) after receiving an instruction intervention about pandemic disease. According to how can protected the neonate during breast feeding from infected women, the present result found that the study sample had no adequate information before implementation of an instructional intervention, while the control group had poor to fair level of knowledge at three deferent times, this result in disagreement with a study conducted in a population based survey in Iran by (Lee et. al.,2010) to evaluate their Knowledge, practice, and attitude toward the Novel Coronavirus (COVID-19), He stated that the majority of participants (82.9%) had high level information's about this pandemic before receiving an educational intervention , which obtained from their high level education rather than social media and internet. (Francisco et.al., 2021), revealed that there was no significant correlation between pregnant level of knowledge with some demographic and reproductive variables like age, education, family income, gestational age, residences, abortion, and gestational age. (Robertson et. al., 2021), showed that there was no association between women's knowledge and their age, educational level, job, ethnicity while it was associated with residency, women who lives in urban area had good information about coved 19 protections than women who lives in rural areas. These results are inconsistent with (Dina et. al., 2021) who found that there were significant differences between Ethiopian pregnant women knowledge about corona virus and their sociodemographic with reproductive variable; (age, education, residency, socioeconomic status, history of abortion, pregnancy, and delivery complications) also there was significant differences between these women practice towered corona virus with age, education, type of family, gravidity, parity, history of abortion, and pregnancy complications.

Conclusion

1. There is a significant correlation between pretest and posttest periods after the implementation of instruction program for pregnant women regarding covid 19 virus knowledge.
2. significant relationship among women' knowledge with regard to their socio-demographic variables of: age, education, occupation, residency, monthly income, and relevancy in both group; the study and control group.

Recommendations

1. All patients including pregnant women should be evaluated for fever and signs and symptoms of a respiratory infection. Ideally, screening procedures begin before arrival on a labor and delivery unit or prenatal care clinic.
2. Health education programs to improve COVID-19 knowledge are helpful for encouraging an optimistic attitudes and maintaining safe practices.

References

1. Pena, J. A., Bianco, A. T., Simpson, L. L., Bernstein, P. S., Roman, A. S., Goffman, D., ... & Stone, J. L. (2020). A survey of labor and delivery practices in New York City during the COVID-19 pandemic. *American journal of perinatology*, 37(10), 975-981.
2. Bekele, D., Tolossa, T., Tsegaye, R., & Teshome, W. (2021). The knowledge and practice towards COVID-19 pandemic prevention among residents of Ethiopia. An online cross-sectional study. *Plos one*, 16(1), e0234585.
3. Abdulla, T. N., Akram, W., & MardanAbullah, T. (2021). Knowledge and Practice of Pregnant Iraqi Women about COVID-19 Preventive Measures. *Medico Legal Update*, 21(1), 1217-1223.
4. Bellizzi, S., Farina, G., Fiamma, M., Pichierri, G., Salaris, P., & Napodano, C. M. P. (2021). The multi-agency partnership roadmap for newborns in humanitarian settings: Timely and crucial during the COVID-19 pandemic. *Journal of Global Health*, 11.
5. Williams, M. A., Schmidt, H., Weintraub, R., Miller, K., Buttenheim, A., Sadecki, E., ... & Shen, A. (2021). Equitable Allocation of COVID-19 Vaccines: An Analysis of Allocation Plans of CDC's Jurisdictions with Implications for Disparate Impact Monitoring. *Available at SSRN 3803582*.
6. Nwafor, J. I., Aniukwu, J. K., Anozie, B. O., & Ikeotuonye, A. C. (2020). Knowledge and practice of preventive measures against COVID-19 infection among pregnant women in a low-resource African setting. *MedRxiv*.
7. Lee, T. Y., Zhong, Y., Zhou, J., He, X., Kong, R., & Ji, J. (2021). The outbreak of coronavirus disease in China: Risk perceptions, knowledge, and information sources among prenatal and postnatal women. *Women and Birth*, 34(3), 212-218.
8. Francisco, M., Ngirbabul, M., Akeju, O., Escudero, D., Hernandez-Diaz, S., Wyszynski, D. F., & Wu, J. W. (2021). COVID-19 vaccine acceptance among pregnant women and mothers of young children: results of a survey in 16 countries. *European journal of epidemiology*, 36(2), 197-211.

9. Roberton, T., Carter, E. D., Chou, V. B., Stegmuller, A. R., Jackson, B. D., Tam, Y., ... & Walker, N. (2020). Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study. *The Lancet Global Health*, 8(7), e901-e908.
19. Dina, D. S., Lopes, G., Loretto, L., Farina, G., Napodano, C. M. P., Amadori, A., ... & Alzoubi, Y. (2021). Mental health and COVID-19 pandemics: The worrisome humanitarian perspective from the Middle East. *Journal*