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Review Article

The effectiveness of self-instructional module on knowledge and attitude regarding COVID-19 vaccination of 12 to 18 year children among mothers

Deepak Singh Rajput[1,*], Berlin Sara Thangy[1], Jitendra Chicholkar[1]

[1] *Dept. of Paediatrics and Nursing Sciences, Index Nursing College, Indore, Madhya Pradesh, India*

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ABSTRACT

Introduction: Safe and effective vaccines are available that provide strong immunity to our body to produce specific protection against some of the dangerous disease. Protection of the child from COVID 19 disease Billions of people have been vaccinated against COVID-19. Getting vaccinated is one of the most important things you can do to protect yourself against COVID-19, help end the pandemic and stop new variants emerging. COVID 19 viral disease and affect the lungs.

Materials and Methods: Research Approach:- The quantitative approach was used to determine the effectiveness of self-instructional module on knowledge and attitude regarding covid-19 vaccination on among mothers of 12 to 18 year children. Research Design:- The research design used in this study was quasi experimental one group pre test post test design is used to determine the effectiveness of self-instructional module on knowledge and attitude regarding covid-19 vaccination before and after the self-instructional module among mothers of 12 to 18 year children. Setting: The study was conducted selected rural area Bavliya Khurd. It is situated 3 km away from Index Nursing College, Indore. Sample Size: Sample size of this study consists of 100 mothers of 12 to 18 year children living in selected community area at bavliya khurd. Sampling Technique: Purposive sampling technique was used to select the sample. Sample were collected, who fulfill the sampling criteria are included in this study.

Result: The frequency and percentage distribution of samples according to the pre test knowledge score of mothers regarding covid-19 vaccination. It revealed that 40(40%) mothers had Poor knowledge, and 59(59%) mothers had Average knowledge and 01(01%) mother had Good knowledge about covid-19 vaccination. The frequency and percentage distribution of samples according to the post test knowledge scores of mothers regarding covid-19 vaccination. It revealed that 00 (00%) mothers had Poor knowledge, 80(80.%) mothers had Average knowledge,20(20%) mothers had Good knowledge about covid-19 vaccination. the frequency and percentage distribution of samples according to the pre test attitude score of mothers regarding covid-19 vaccination. It revealed that 21(21%) mothers had Very poor attitude, and 55(55%) mothers had Poor attitude about covid-19 vaccination, 21(21%) mothers had Faire attitude and 03(03%) mothers had Good attitude about covid-19 vaccination, 00(00%) mothers had Excellent attitude. The table-III shows that the frequency and percentage distribution of samples according to the pre test attitude score of mothers regarding covid-19 vaccination. It revealed that 02 (02%) mothers had Very poor attitude, and 44 (44%) mothers had Poor attitude about covid-19 vaccination, 40 (40%) mothers had Faire attitude and 13 (13%) mothers had Good attitude about covid-19 vaccination, 01 (01%) mothers had excellent attitude.

Conclusion: The self-instructional module through booklet found to be very effective in improving the knowledge and attitude among mothers who have 12 to 18 yrs children on covid-19 vaccination. The knowledge and attitude regarding covid-19 vaccination was improved by health teaching through booklet. Being as a nurses, our main responsibility is try to make our India, free from communicable disease by providing covid-19 vaccination for all 12 to 18 year children.

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1. Background

Corona virus is a larger family of viruses that cause illnesses such as the common cold, severe acute respiratory syndrome (SARS), and the Middle East respiratory syndrome (MERS). A new outbreak of the corona virus erupted in 2019 in China.[1] Take all COVID-19 vaccine doses recommended to you by your health authority as soon as it is your turn, including a booster dose if recommended.[2] It is still possible to get COVID-19 and spread it to others after being vaccinated, so continue to do everything you can to keep yourself and others healthy. Continue keeping a safe distance from others and avoiding crowds, wearing a well-fitting mask covering your mouth and nose, keeping indoor spaces well ventilated, cleaning hands regularly and covering coughs and sneezes,[3] If you do get COVID-19 after vaccine, you are more likely to have mild or no symptoms than if you hadn't been vaccinated. COVID-19 vaccines were initially released under Emergency Use Authorization (EUA), they were still approved by the Food and Drug Administration (FDA).[4]

1. Reducing the risk of COVID-19 infection, health complications, hospitalization, and death for children. While COVID-19 is less likely to cause severe illness in children than in adults, many children HAVE gotten very sick after being infected:[5] 2. Reducing the spread of COVID-19. Children CAN be infected and spread COVID-19 to others, including people they come in contact within their school, their community, and their household. As we all know too well, there have been outbreaks in schools and summer camps that have led to severe cases as well as closures.[6] Children with certain health conditions or who live in an environment with higher exposure to COVID-19 are at higher risk of COVID-19Severe COVID-19 illness is also occurring at higher rates in Black, American Indian/Alaska Native, and Hispanic children than in non-Hispanic White children because of systemic racial inequities. Making the vaccine widely available for this age group helps to ensure that those who need it most do not face additional hurdles in getting vaccinated.COVID-19 vaccines protect against the SARS-CoV-2 virus only, so it's still important to keep yourself healthy and well. 3. Getting vaccinated could save your life.[7] COVID-19 vaccines provide strong protection against serious illness, hospitalization and death. There is also some evidence that being vaccinated will make it less likely that you will pass the virus on to others, which means your decision to get the vaccine also protects those around you. 4. Precautions to protect Even after getting vaccinated, keep taking precautions to protect yourself, family, friends and anyone else you may come into contact with. COVID-19 vaccines are highly effective, but some people will still get ill from COVID-19 after vaccination.[8] There is also still a chance that you could also pass the virus on to others who are not vaccinated. Stay at least 1 metre away from other people, wear a properly fitted mask over your nose and mouth when you can't keep this distance, avoid poorly ventilated places and settings, clean your hands frequently, stay home if unwell and get tested, and stay informed about how much virus is circulating in the areas where you travel, live and work.[9]

2. Need for the Study

There are proportionally fewer symptomatic infections, and cases with severe disease and deaths from COVID-19 in children and adolescents, compared with older age groups.WHO, reported deaths 6,243,038 rate of COVID 19 and vaccine doses have been administered of 11,561,829,818. Mothers are the first care providers of their children, is needed to reduce the 12 to 18 year mortality rate. One of the ways to achieve reduction of 12 to 18 year mortality is to educate the mothers on matters pertaining to child care.

International level report India began administration of COVID-19 vaccinations on 2021. As of 2022, India has administered over 1.8 billion doses overall, including first, second and precautionary booster doses of the currently approved vaccinations. In India, 95% of the eligible population 12 has received at least one shot, and 80% of the eligible population 12 is fully vaccinated.[10]

State-level reports are the best publicly available and timely data on child COVID-19 cases in the United States. The American Academy of Pediatrics and the Children's Hospital Association are collaborating to collect and share all publicly available data from states on child COVID-19 Almost 13 million children have tested positive for COVID-19 since the onset of the pandemic according to available state reports; over 149,000 of these cases have been added in the past 4 weeks. Over 5 million reported cases have been added in 2022.[11]

A vaccination programme for 15- to 18-year-olds also began in January - more than 75% have received the first dose. Corbevax, which is a protein-based vaccine manufactured by Biological E, got emergency use authorisation from India's drug regulator on 2022 for the age group of 12-18 years. Overall, Age-disaggregated cases reported to WHO from 2019 to 2021 show that Older children and younger adolescents (5 to 14 years) account for 7% (7 058 748) of reported global cases and 0.1% (1 328) of reported global deaths while older adolescents and young adults (15 to 24 years) represent 15% (14 819 320) of reported global cases and 0.4% (7 023) of reported global deaths.[12]

* *Corresponding author*.
E-mail address: deepakrajputdeepak40527@gmail.com (D. S. Rajput).

2.1. Statement of the problem

A Study to assess the effectiveness of self-instructional module on knowledge and attitude regarding covid-19 vaccination of 12 to 18 year children among mothers in selected community areas of Indore (M.P.)

3. Objectives of the Study

1. To assess the Pre test level of knowledge and attitude regarding the covid-19 vaccination among mothers of 12 to 18 year children as measured by structured knowledge questionnaire and attitude scale.
2. To assess the post test level knowledge and of attitude regarding covid-19 vaccination among mothers of 12 to 18 year children as measured by structured knowledge questionnaire attitude scale.
3. To evaluate the effectiveness of structured teaching program on knowledge and attitude regarding covid-19 vaccination among mothers of 12 to 18 year children in term of gain in post test knowledge and attitude score.
4. To find the co relation between the knowledge and attitude regarding covid-19 vaccination among the mother of 12 to 18 year children.
5. To find out the association between post test level of knowledge with their selected demographic variables.
6. To find out the association between post test level of attitude with their selected demographic variables.

3.1. Hypotheses

1. **RH** $_1$ – There will be significant difference between pre-test and post-test knowledge scores regarding COVID-19 vaccination12 to 18 year children among mothers at the level of $P \leq 0.05$
2. **RH** $_2$ – There will be significant difference between pre-test and post-test attitude scores regarding COVID-19 vaccination12 to 18 year children among mothers at the level of $p \leq 0.05$
3. **RH** $_3$ – There will be a significant association of pre-test knowledge regarding COVID-19 vaccination score with selected socio-demographical variables at the level of $p \leq 0.05$.
4. **RH** $_4$ – There will be a significant association of pre-test attitude regarding COVID-19 vaccination score with selected socio-demographical variables at the level of $p \leq 0.05$.

3.2. Assumption

1. The post test score will be higher than the pre test score.
2. 12 to 18 year children's mother will not have adequate knowledge and attitude regarding covid-19 vaccination.
3. Demographic variable of the sample may have an influence over knowledge and attitude regardingcovid-19 vaccination.

4. Limitation

1. Who are willing to participate in the study.
2. Duration of the data collection only six weeks.
3. The study will be limited to mothers of 12 to 18 year children those who are present at the time of data collection.
4. The sample size is 100 mothers of 12 to 18 year children.

5. Materials and Methods

5.1. Research approach

The quantitative approach was used to determine the effectiveness of self-instructional module on knowledge and attitude regarding covid-19 vaccination on among mothers of 12 to 18 year children.

5.2. Research design

The research design used in this study was quasi experimental one group pre test post test design is used to determine the effectiveness of self-instructional module on knowledge and attitude regarding covid-19 vaccination before and after the self-instructional module among mothers of 12 to 18 year children.

Diagrammatic representation of research design is as follows,

O1 —— X —— O2

1. (a) O1- Pre-test assessment on knowledge and attitude regarding covid-19 vaccination.
   (b) X - Intervention.
   (c) O2- Post-test assessment on knowledge and attitude regardingcovid-19 vaccination.

5.3. Setting of the study

The study was conducted selected rural area Bavliya Khurd. It is situated 3 km away from Index Nursing College, Indore.

5.4. Population

The target population of this study included the mothers of 12 to 18 year children living in village bavliya khurd selected community area.

5.5. Sample size

Sample size of this study consists of 100 mothers of 12 to 18 year children living in selected community area at bavliya khurd.

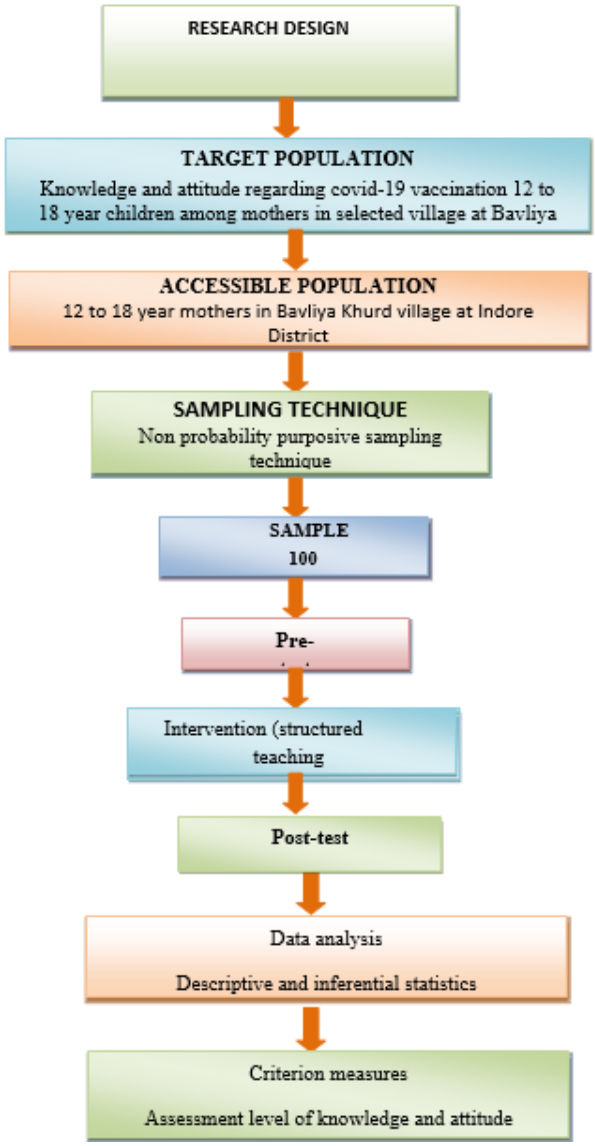

Fig. 1: Schematic representation of the Research methodology

5.6. *Sampling technique*

Purposive sampling technique was used to select the sample. Sample were collected, who fulfill the sampling criteria are included in this study.

5.7. *Criteria for sample selection*

5.7.1. *Inclusion criteria*

1. Mothers of 12 to 18 year children living in Indore community area.
2. Mothers those who are have first child in family

5.7.2. *Exclusion criteria*

1. Children who are not willing to participate in the study.
2. Those who don't understand Tamil and English

5.8. *Reliability*

The test retest was used to establish a reliability of structure questionnaire and attitude scale. Reliability value r =0.82 was satisfactory.

5.9. *Pilot study*

The pilot study was conducted in Morodhat community area. Ten mothers were selected who have 12 to 18 year children. The knowledge of covid-19 vaccination was assessed by using structured knowledge questionnaire. The attitude was assessed by attitude scale It was carried out the same way as a final study in order to test feasibility and practicability. Ten mothers who met the inclusion criteria were selected by purposive sampling method. Pre test was conducted by using structured knowledge questionnaires and attitude scale on covid-19 vaccination. The self-instructional module was conducted on the study group by the same day followed by the pre test. Then after one week of pre test, the post test was conducted for the same group by using the same structured knowledge questionnaire and attitude scale. The result was analysed based on the score obtained by the mothers, by using descriptive and inferential statistics. The tool and the self-instructional module were found to be effective. The study conformed to be feasible.

The data presented in the above table shows, the number of sample was 26 (26%) in the age group of below 20 years, 23 (23%) mothers were in the age group of 21-23 years and 27 (27%) mothers were in the age group of 30-40 years and 24 (24%)in the age group more than 40 year mothers.

Regarding religion 89 (89%) mothers were Hindu, 02 (02%) mothers were Christians, and 06 (06%) mothers were Muslims and 03 (03%) mothers were other.

Regarding occupation, 72 (72%) mothers were house wife, 04 (04%) mothers were teacher, 14 (14%) mothers were Business, and 10 (10%) mothers were teacher.

Regarding family income the majority of them were 19 (19%)earning between < 5000 (In Rupees), 27 (27%) were earning 5001-10000 (In Rupees), 20 (20%) earn in 10001-15000,and in >15001 were belonging to 37 (37%).

Regarding marital status the majority of them are married 90 (90%) followed by unmarried 04 (04%) and are widow 06 (06%).

Regarding education 32 (32%) mothers were illiterate, 51(51%) mothers were completed primary education, 10(10%) mothers were completed secondary education, 05(05%) mothers were undergraduate and 02(02%) were post graduate.

Regarding the source of information 49(49%) mothers got information through television, 14(14%) mothers got information through radio, 11(14%) mothers got information through news paper, 11 (11%) mothers got

Table 1: Frequency and percentage distribution of samples on selected demographic variables n = 100

S.No	Demographic Variables	Frequency	Percentage (%)
1.	**Age of the Mother**		
	a. ≤ 20 year	26	26
	b. 21-30 year	23	23
	c. 30-40 year	27	27
	d. ≥ 40 year	24	24
2.	**Religion**		
	a. Hindu	89	89
	b. Christian	02	02
	c. Muslim	06	06
	d. Others	03	03
3.	**Occupation**		
	a. House wife	72	72
	b. Teacher	04	04
	c. Business	14	14
	d. Other	10	10
4.	**Family income (In Rupees)**		
	a. ≤ 5000	19	19
	b. 5001-10000	24	24
	c. 10001-15000	20	20
	d. ≥ 15001	37	37
5.	**Marital status**		
	a. Married	90	90
	b. Divorced	04	04
	c. Widowed	06	06
6.	**Education**		
	a. Illiterate	32	32
	b. Primary education	51	51
	c. Secondary education	10	10
	d. Under graduate	05	05
	e. Post graduate	02	02
7.	**Source of information about covid -19 vaccination**		
	a. Television	49	49
	b. Radio	14	14
	c. News paper	11	11
	d. Health center	11	11
	e. Health card	15	15
8.	**Previous knowledge about covid -19 vaccination**		
	a. Yes	21	21
	b. No	79	79

information through health center, and 15 (15%) mothers got information through health cards.

Regarding previous knowledge about covid -19 vaccination 21(21%) yes and (79%)no.

Table 2: Distribution of samples according to the pre test knowledge scores of mothers regarding COVID-19 vaccination (n=100)

Level of knowledge	Pretest		Post test	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Poor	40	40%	00	00%
Average	59	59%	80	80%
Good	1	01%	20	20%
Total	100	100%	100	100%

The Table 2 shows that the frequency and percentage distribution of samples according to the pre test knowledge score of mothers regarding covid-19 vaccination. It revealed that 40(40%) mothers had Poor knowledge, and 59(59%) mothers had Average knowledge and 01(01%) mother had Good knowledge about covid-19 vaccination.

The frequency and percentage distribution of samples according to the post test knowledge scores of mothers regarding covid-19 vaccination. It revealed that 00 (00%) mothers had Poor knowledge, 80(80%). mothers had Average knowledge,20(20%) mothers had Good knowledge about covid-19 vaccination.

Table 3: Distribution of samples according to the pre test attitude scores of mothers regarding COVID-19 vaccination (n=100)

Level of Attitude	Pretest		Post test	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Very poor	21	21%	02	02%
Poor	55	55%	44	44%
Faire	21	21%	40	40%
Good	03	3%	13	13%
Excellent	0	0	01	01%
Total	100	100%	100%	100%

The Table 3 shows that the frequency and percentage distribution of samples according to the pre test attitude score of mothers regarding covid-19 vaccination. It revealed that 21(21%) mothers had Very poor attitude, and 55(55%) mothers had Poor attitude about covid-19 vaccination, 21(21%) mothers had Faire attitude and 03(03%) mothers had Good attitude about covid-19 vaccination, 00(00%) mothers had Excellent attitude.

The Table 3 shows that the frequency and percentage distribution of samples according to the pre test attitude score of mothers regarding covid-19 vaccination. It revealed that 02 (02%) mothers had Very poor attitude, and 44 (44%) mothers had Poor attitude about covid-19 vaccination, 40 (40%) mothers had Faire attitude and 13 (13%) mothers

had Good attitude about covid-19 vaccination, 01 (01%) mothers had Excellent attitude

Comparison of the pretest and post test knowledge score on mothers regarding COVID-19 vaccination

To test the statistical significant difference between the mean pretest and posttest knowledge scores of the mothers regarding covid-19 vaccination, the following null hypothesis was stated.

5.10. Hypothesis-0

The mean post test knowledge score is higher than the mean pre test knowledge score regarding covid-19 vaccination among the mothers of 12 to 18 year children.

Table 4:

Knowledge score	Mean	SD	't'Test Value
Pre test	8.88	2.89	7.65*
Post test	13.00	3.09	

* Significant

Table 5: The meanpost test attitude score is higher than the mean pre test attitude score regarding covid-19 vaccination among the mothers of 12 to 18 year children.

Knowledge score	Mean	SD	't'Test Value
Pre test	18.400	8.138	-17.30*
Post test	24.470	8.758	P-Value = 0.000

* Significant

Table 6: Relationship betweenpost test level of knowledge and attitude among 12 to 18 year mothers.

S. No	Calculated 'r' value	Table "r" value
1.	-0.22	0.381

NS- Not significant

The Table 4 shows that, mean post test knowledge score of the mothers regarding covid-19 vaccination are significantly higher than their mean pre test knowledge scores.

In order to find out the significant difference between the mean score of pre and post test knowledge score of the mothers regarding covid-19 vaccination paired 't' test was computed. The calculated value is higher than the table value, the null hypothesis was rejected and the research hypothesis was accepted. Hence the researcher concluded that gain in knowledge is not by chance but by STP on covid-19 vaccination.

Comparison of the pretest and post test attitude score on mothers regarding COVID-19 vaccination.

To test the statistical significant difference between the mean pretest and post test attitude scores of the mothers regarding covid-19 vaccination, the following null hypothesis was stated.

5.11. Hypothesis-0Table 5

The Table 5 shows that, mean post test attitude score of the mothers regarding covid-19 vaccination are significantly higher than their mean pre test attitude scores.

In order to find out the significant difference between the mean score of pre and post test attitude score of the mothers regarding covid-19 vaccination paired 't' test was computed. The calculated value is higher than the table value, the null hypothesis was rejected and the research hypothesis was accepted. Hence the researcher concluded that change of attitude e is not by chance but by STP on covid-19 vaccination.

The 'r' value of post test level of knowledge and attitude was -0.22, there was a negative correlation between knowledge and attitude which was not significant

Association between the Post Test Knowledge Scores on Mothers Regarding COVID-19 Vaccination and Demographic Variables Table 7

5.12. Hypothesis ITable 8

Association Between the Post Test Attitude Scores on Mothers Regarding COVID-19 Vaccination and Demographic Variables

To identify the association between the post test attitude scores on covid-19 vaccination of mothers and the selected demographic variables. The following null hypothesis was stated.

5.13. Hypothesis I

There will be no significant association between the post test attitude scores of mothers regarding covid-19 vaccination and selected demographic variables.

6. Discussion

The subjects were assessed by the demographic data and knowledge questionnaire and attitude scale. The investigator has to identify the effectiveness of covid-19 vaccination among mothers who have 12 to 18 years children has taken effort to improve the knowledge and attitude of the mothers. Covid-19 vaccination teaching was given by means of flash cards on covid-19 vaccination. After post test was conducted to find the effectiveness of teaching.

Table 7: To identify the association between the post test knowledge scores on covid-19 vaccination of mothers and the selected demographic variables. The following null hypothesis was stated.

Demographic Variable	Frequency Numbers	Knowledge level			Chi- Square x2	P Value
		Poor	Average	Good		
Age of the mother						
1. ≤ 20 year		11	15	2		
2. 21-30 year	100	15	10	2	3.46#	0.748
3. 30-40 year		12	10	3		
4. ≥ 40 year		12	6	2		
Religion						
1. Hindu		30	25	10		
2. Christian	100	10	10	02	2.105#	0.909
3. Muslim		02	01	01		
4. Others		03	05	01		
Occupation						
1. House wife		35	25	05		
2. Teacher	100	05	02	03	6.459#	0.37
3. Business		10	05	03		
4. Other		05	01	01		
Family income (In Rupees)						
1. ≤ 5000		25	10	05		
2. 5001-10000 3. 10001-15000	100	09	09	02	7.141*	0.307
4. ≥ 15001		16	08	01		
5.		05	07	03		
Marital status						
Married		38	15	10		
Divorced	100	10	06	02	1.708	0.789
Widowed		10	07	02		
Education						
Illiterate		26	04	02		
Primary education		14	10	02		
Secondary education	100				7.582*	0.270
Under graduate		12	07	03		
Post graduate		11	07	02		
Source of information about covid -19 vaccination						
Television		30	10	04		
Radio		10	02	02		
News paper	100	15	06	03	11.310*	0.184
Health center		06	01	03		
Health card		02	03	03		
Previous knowledge about covid -19 vaccination						
Yes	100	50	25	10	0.560#	0.755
No		10	03	02		

Table 8: There will be no significant association between the post test knowledge scores of mothers regarding covid-19 vaccination and selected demographic variables

Demographic Variable	Frequency Numbers	Attitude level					Chi-Square 2	P Value
		Very poor	Poor	Faire	Good	Excellent		
Age of the mother								
≤ 20 year		14	10	05	01	01		
21-30 year	100	12	05	02	02	01		
30-40 year		14	07	03	01	00	4.786#	0.964
≥ 40 year		11	08	02	01	00		
Religion								
Hindu		20	10	05	02	01		
Christian		05	08	02	01	01	4.814#	0.963
Muslim	100	14	06	03	02	01		
Others		08	07	02	01	01		
Occupation								
House wife		33	19	05	03	02		
Teacher		05	02	03	01	01	7.590*	0.816
Business	100	10	04	03	01	00		
Other		05	01	01	01	00		
Family income (In Rupees)								
≤ 5000		20	09	03	02	01		
5001-10000	100	09	09	02	03	01		
10001-15000		16	08	01	01	00	9.160*	0.689
≥ 15001		05	05	03	01	01		
Marital status								
Married		30	15	10	02	01		
Divorced	100	10	06	02	02	01	3.319#	0.912
Widowed		10	07	02	01	01		
Education								
Illiterate		20	04	02	02	02		
Primary education		14	10	02	01	01		
Secondary education	100	12	06	02	01	01	5.651#	0.932
Under graduate								
Post graduate		11	06	02	01	00		
Source of information about covid -19 vaccination								
Television		25	05	04	01	01		
Radio		10	02	02	01	01		
News paper	100	15	06	03	02	00	12.87*	0.681
Health center		06	01	03	01	01		
Health card		02	03	03	01	01		
Previous knowledge about covid -19 vaccination								
Yes		45	20	10	03	02	7.142*	0.128
No	100	10	03	02	02	03		

* Significant at 0.05 level

7. Summary

A study was conducted to assess the effectiveness of self-instructional module on covid-19 vaccination among mothers of children in selected area of Bavliya khurd. The research design of the study is quasi experimental research design with one group pretest and posttest. Total 30 mothers were taken who have under 5 children, purposive sampling technique was used to select the mothers. The conceptual model of the study was general system model.

8. Source of Funding

None.

9. Conflict of Interest

None.

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Author biography

Deepak Singh Rajput, Assistant Professor

Berlin Sara Thangy, Professor

Jitendra Chicholkar, Associate Professor

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