STRADA Jurnal Ilmiah Kesehatan
DOI: 10.30994/sjik.v10i1.702
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 826-836

The Influence Of Long-Term Contraception Method Mobile Application On The Behavior Of Prospective Family Planning Acceptors

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ABSTRACT

Contraceptive Prevalence Rate (CPR) in Indonesia reaches 63.6%. Short-term contraceptive use still dominates. Behavior related to Long-Term Contraceptive Methods is lower than hormonal methods. The government supports the use of Long-Term Contraceptive Methods with promotion as well as Communication, Information and Education. The government has developed a Family Planning Balanced Counseling Strategy to facilitate counseling, but this program is not yet accessible to everyone. An educational media that is mobile and easily accessible is needed. This study aims to see the effect of theapplication Mobile Long-Term Contraception Methodon the knowledge, attitudes, and actions of prospective acceptors. This research used quasi experimental (pre and post-test with control group design). The research subjects were couples of reproductive age in the Gunungsari Health Center, West Lombok Regency. A total of 36 people were given education with applications and 36 people were given education with leaflets. Knowledge, attitude and action variables were measured before and after 21 days of treatment. Pairedt test and independent t test was performed to assess the differences in behavior before and after treatment. The results showed that the application mobile long-term contraceptive method had an influence on the knowledge, attitudes, and actions of prospective acceptors. This application was better than the leaflet on increasing knowledge (p= 0.001), attitudes (p= 0.001), and actions (p= 0.006) of prospective acceptors. This application provides complete information about the Long-Term Contraception Method and is easily accessible to users via andevice Android. Continuous exposure to information can increase knowledge about Long-Term Contraception Methods so that it can change the attitudes and actions of prospective acceptors.

Keywords: Contraception, Education, Family Planning, Implants, Intrauterine Devices, Long-Term Contraceptive Methods

Received March 17, 2021; Revised April 7, 2021; Accepted April 28, 2021

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BACKGROUND

The family planning program is a government program to regulate spacing and limit the number of births in order to prevent increased maternal mortality caused by too close a distance births and too many children. The use of contraceptive methods in Indonesia is quite high. Contraceptive Prevalence Rate (CPR) in 2017 reached 63.6%. The use of short-term contraceptive methods still dominates (IDHS, 2017). Nationally, there are only 723,456 participants in family planning. As many as 79.71% of new participants used the short-term contraceptive method. Only 20.29% used the Long-Term Contraception Method (BKKBN, 2015).

Active Family Planning Participants in West Lombok Regency in 2018 were 819,425 people or 92.13% of the total fertile age couples. Participants with injection types were 59.9%, followed by implants 14.6%, pills 12.9%, Intra Uterine Device 9.7%, condoms 1.3%, 1.2% Female Operative Method and Male Operative Method 0, 3%. There were 10,572 active family planning participants in Gunungsari District with 4,108 (38.8%) participants being users of the Long-Term Contraception Method. This figure is still lower than users of hormonal contraceptives (injections and pills), namely 6,434 (60.8%) (Dinas-Kesehatan-NTB, 2017).

The National Population and Family Planning Agency developed a Balanced Family Planning Counseling Strategy, which is currently available in the form of an application program that can be installed on a PC / Tablet, making it easier for service providers to provide family planning counseling. However, the media being developed still has limitations, namely its storage capacity which is quite heavy and must be run on a PC / Tablet so that prospective acceptors cannot easily access it. Based on these problems, it is necessary to develop new health education media in order to facilitate access to prospective acceptors to get information about family planning (Majid, 2017). Utilization of smartphones is a new innovation in health services (World Health Organization, 2011). Health promotion by utilizing an Android smartphone is considered more effective and cost effective and energy efficient compared to conventional methods and can be accessed anywhere (World Health Organization & UNICEF, 2009).

Research conducted by Gilliam et al (2014) regarding the use of the application "iOS waiting room" as a media for family planning counseling shows an increase in the knowledge and interest of prospective acceptors to use implants after being given counseling with the application during waiting time at the clinic (Gilliam et al., 2014)). Based on the above problems, the researcher is interested in examining the effect of the application model education mobile long-term contraceptive method on the behavior of prospective acceptors of the Long-Term Contraceptive Method.

METHODS

This study is quasy experiment with the design of pre- and post-test with control group. This research was conducted in March - April 2020 in the working area of the Gunungsari Health Center, West Lombok Regency. The independent variable in this study is the application Mobile Long-Term Contraception Method and the dependent variable is the behavior of prospective family planning acceptors consisting of knowledge, attitudes, and behavior. In addition, there are confonding variables which are controlled so that they do not affect the dependent variables, including age, education, occupation, husband's support, and number of children.

The population in this study were couples of reproductive age who were recorded in the working area of the Gunungsari Health Center in January 2020. The sample size was

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calculated using the Lemeshow formula, namely 36 people in each group (treatment and control groups). The sampling technique used purposive sampling technique, ie the sample was adjusted to the research objectives and based on predetermined inclusion and exclusion criteria. The inclusion criteria in this study are women who have not used the long-term contraceptive method, couples who already have children, are willing to be respondents, have a smartphone with an Android operating system for the treatment group and can read. Meanwhile, the exclusion criteria were pregnant women and were unable to participate in the study until the end.

The instruments used in the study were the application mobile long-term contraceptive method and a questionnaire on knowledge, attitudes, and behavior of prospective family planning acceptors. Data analysis included univariate and bivariate analyzes. Univariate analysis in the form of a frequency distribution table of respondent characteristics as well as the level of knowledge, attitudes and behavior of respondents. Bivariate analysis used paired t test and independent t test to determine differences in behavior before and after treatment in each group and differences in behavior before and after treatment between the two groups. This research has passed the ethics test at the ethics commission of the medical faculty of Mataram University.

RESULTS

The reproductive age couples who were respondents in this study were grouped based on their respective characteristics which will be described in the frequency distribution table and the presentation of the characteristics of the respondents based on age, education, occupation, number of children, and husband's support.

Table 1. Frequency Distribution of Respondent Characteristics based on Age, Education, Occupation,
Number of Children and Husband's Support

No	Variable	Intervention		Control		p-value
		n	%	n	%	
1	**Age of wife**					
	20-35 years	34	94.4	29	80.6	0.077**
	> 35 years	2	5.6	7	19.4	
	Total	36	100	36	100	
	Age of husband					
	20-35 years	32	88.9	29	80.6	0.329**
	> 35 years	4	11.1	7	19.4	
	Total	36	100	36	100	
2	**Education of wife**					
	Elementary school	3	8.3	7	19 , 4	0.158*
	Junior high school	12	33.3	6	16.7	
	Senior High School	21	58.3	23	63.9	
	Total	36	100	36	100	
	Education of Husband					
	Elementary school	3	8.3	3	8.3	0.490*
	Junior high school	7	19.4	11	30.6	
	Senior high school	26	72.2	21	58.3	
	Diploma	0	0	1	2.8	
	Total	36	100	36	100	

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3	**Occupation of Wife**					
	House wife	27	75	28	77,8	0,501*
	Trader	6	16,7	2	5,6	
	Farmer	1	2,8	1	2,8	
	Laborer	1	2,8	2	5,6	
	Private	1	2,8	3	8,3	
	Total	36	100	36	100	
	Occupation of Husband of					
	Farmer	15	41,7	7	19,4	0,138*
	Laborer	7	19,4	10	27,8	
	Trader	1	2,8	7	19,4	
	Entrepreneur	4	11,1	5	13,9	
	Private	6	16,7	5	13,9	
	Others	3	8,3	2	5,6	
	Total	36	100	36	100	
	Number of Children					
	1 person	13	36.1	10	27.8	0.813**
	2 Person	11	30.6	15	41.7	
	3 person	9	25	9	25	
	4 person	3	8.3	2	5.6	
	Total	36	100	36	100	
5	**Support Husband**					
	Support	15	41.7	17	47.2	0.635*
	Not support	21	58.3	19	52.8	
	Total	36	100	36	100	

* Chi square ** Mann Whitney

Based on the table above , it can be seen that most of the respondents who are wife and husband are in the age group of 20-35 years, namely 94.4% (34 people) in the intervention group and 80.6% (29 people) in the control group while the husbands were 88 , 9% (32 people) in the intervention group and 80.6% (29 people) in the control group. The p-value for the wife's age was 0.077 (p> 0.05) and at the husband's age was 0.329 (p> 0.05) so that there was no difference in the age of the wife and husband in the intervention and control groups.

Most of the wives' education was high school, namely 58.3% (21 people) in the intervention group and 63.9% (23 people) in the control group. Most of their husbands have high school education, namely 72.2% (26 people) in the intervention group and 58.3% (21 people) in the control group. The p-value is 0.158 for the wife's education and 0.490 for the husband's education. This shows that there is no difference in the education of wives and husbands in the intervention and control groups.

Most of the wives' jobs were housewives, as many as 75% (27 people) in the intervention group and 77.8% (28 people) in the control group. Most husband occupations in the intervention group were farmers, namely 41.7% (15 people), while in the control group, they were laborers, namely 27.8% (10 people). The p-value for the wife's job is 0.501 and for the husband's job is 0.138, so there is no difference between the work of the wife and the husband in the intervention and control groups.

The highest number of children of respondents in the intervention group was 1 child, namely 36.1% (13 people) and 2 children in the control group, namely 41.7% (15 people).

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The p-value is 0.813 which indicates that there is no difference in the number of children in the intervention and control groups.

Most husbands did not support the use of the long-term contraceptive method in the intervention group, namely 58.3% (21 people), while in the control group it was 52.8% (19 people). The p-value is 0.635 which indicates that there is no difference in husband's support in the intervention and control groups.

Table 2. Knowledge, attitudes, and actions before and aftereducation mobile methods in the Long-term contraceptivetreatment group

Variable	Before	After	p-value *
Knowledge			
Mean ± SD	8.44 ± 1.71	13.94 ± 0 , 89	0.001
Min-max	5 – 13	12 - 15	
Attitude			
Mean ± SD	45.25 ± 6.21	65.00 ± 4.99	0.001
Min-max	31 - 55	52 - 74	
Measures			
Mean ± SD	8.36 ± 2.72	17.39 ± 4.72	0.001
Min-max	5 – 15	7 - 25	

*Paired t test

Based on the table above, the average level of knowledge in the intervention group before treatment was 8.44 and after treatment was 13.94. The mean attitude in the intervention group before treatment was 45.25 and after treatment was 65.00. The mean of action before treatment in the intervention group was 8.36 and after treatment was 17.39. The p-value on the knowledge, attitude, and action variables was 0.001 ($p<0.05$) which indicated that there was an increase in the score of knowledge, attitudes, and actions before and after being given education on the mobile Long-Term Contraception Method.

Table 3. Knowledge, Attitudes, and Actions Before and After Giving Leaflet On Control Group

Variable	Before	After	p-value *
Knowledge			
Mean ± SD	11.64 ± 1.86	13.97 ± 0.97	0.001
Min-mak	8-15	12 - 15	
Attitude			
Mean ± SD	47.69 ± 6.04	62.14 ± 6.83	0.001
Min-max	36 - 63	47 - 72	
Measures			
Mean ± SD	8.19 ± 2.52	14.06 ± 4.15	0.001
Min-max	5 - 15	7 - 25	

*Paired t test

Based on the table above, the average level of knowledge in the control group before treatment was 11.64 and after treatment was 13.97. The average attitude before treatment was 47.69 and after treatment was 62.14. Whereas in the control group, the action before treatment was 8.19 and after treatment was 14.06. The p-value on the knowledge, attitude, and action variables was 0.001 ($p<0.05$) which indicated that there was an increase in knowledge, attitudes and actions before and after being given education with leaflets.

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The data normality test before and after treatment in the intervention and control groups showed that all data were normally distributed, so a different test to determine differences in knowledge, attitudes, and actions in the two groups used the independent t test.

Table 4. Knowledge, Attitudes, and Action After Treatment in the Intervention and Group Control

Variable	Mean ± SD		p-value *
	Intervention	Control	
Knowledge			
Before	8.44 ± 1.71	11.64 ± 1.86	0.001
After	13.94 ± 0.89	13.97 ± 0.97	0.900
Difference	5.5 ± 0, 82	2.33 ± 0.89	0.001
Attitude			
Before	45.25 ± 6.21	47.69 ± 6.04	0.095
After	65.00 ± 4.99	62.14 ± 6.83	0.047
Difference	19.75 ± 1.22	14.45 ± 0.79	0.001
Measures			
Before	8.36 ± 2.72	8.19 ± 2.52	0.789
After	17.39 ± 1.72	14.06 ± 4.15	0.002
Difference	9.03 ± 2	5.87 ± 1.63	0.006

*Independent t testtest

The unpaired dataresults showed that the p-value of the knowledge variable before treatment in the intervention and control group was 0.001 ($p<0.05$) so there is a difference in knowledge before treatment in the intervention and control groups. The mean of knowledge in the intervention group before treatment was lower than that in the control group. While the unpaired test on knowledge after being given treatment has a p-value of 0.900 ($p> 0.05$) which indicates that there is no difference in knowledge in the intervention and control groups after treatment. The mean difference between the two groups shows a p-value of 0.001 ($p>0.05$) which means that there is a difference in increasing knowledge in the intervention and control groups. The increase in knowledge in the intervention group was higher than the increase in knowledge in the control group, namely 5.5 (36.67%) in the intervention group and 2.33 (15.54%) in the control group.

In the attitude variable, the p-value before treatment was 0.095 ($p> 0.05$) so that there was no difference in attitudes in the intervention and control groups before treatment. After being given treatment, the p-value is 0.047 ($p <0.05$), which means that there are differences in attitudes in the intervention and control groups after treatment. The average attitude in the intervention group after treatment was higher than the control group. The mean difference between the two groups shows a p-value of 0.001 ($p>0.05$), which means that there is a difference in increasing attitudes in the intervention and control groups. The increase in attitudes in the intervention group was higher than the increase in attitudes in the control group, namely 19.75 (26.34%) in the intervention group and 14.45 (19.27%) in the control group.

The unpaired test on the action variable showed the p-value before treatment was 0.789 ($p> 0.05$) so that there was no difference in action in the intervention and control groups before treatment. After being given treatment, the p-value is 0.002 ($p <0.05$), which means that there are differences in action in the intervention and control groups after

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treatment. The mean action in the intervention group after treatment is higher than the control group. The mean difference between the two groups shows a p-value of 0.006 (p>0.05), which means that there is a difference in the increase in action in the intervention and control groups. The increase in action in the intervention group was higher than the increase in action in the control group, namely 9.03 (36.12%) in the intervention group and 5.87 (23.48%) in the control group.

DISCUSSION

Based on these results, more than 80% spouses of fertile age between 20-35 years old, both the intervention and control groups. At this stage, the Fertile Age Couples' desire to have more children is still quite high, so they prefer a short-term method that is easier to stop using. Based on research by Bhandari (2019), the age of women of childbearing age affects the choice of long-term contraceptive methods. Younger women are less likely to use Long-Term Methods of Contraception than older women. This research is in line with the opinion of Notoatmodjo (2012) which states that age is one of the factors that influence a person's behavior, including in the choice of contraceptives (Notoatmodjo, 2012). However, this is contrary to research conducted by Biza (2017) which states that age does not have a significant relationship with the use of long-term contraceptive methods (Biza et al., 2016).

In this study, most of the fertile age couples had the latest high school education (> 58%). However, there are still those who have the latest elementary school education and only 1 husband has a bachelor's degree. Education is related to a person's ability to process information and their ability to analyze that information. Education is also related to knowledge. The results of research conducted by Ontiri (2019) show that tertiary education has an effect on the choice of long-term contraceptive methods. Increased education leads to increased use of long-term contraceptive methods. Highly educated women can process information better so they can know the benefits of using long-term contraceptive methods (Ontiri et al., 2019).

Research conducted by Bhandari (2019) states that the husband's education also affects the use of the long-term contraceptive method. Women who have husbands with basic education and non-formal education use less of the long-term contraceptive method than those with higher education. This is because husbands with higher education have better knowledge about the Long-Term Contraceptive Method and can be partner a goodfor the wife in making the decision to use the Long-Term Contraceptive Method (Id et al., 2019).

More than 75% of wives are housewives. While the husband's occupation in the intervention group was mostly farmers, namely 15 people (41.7%) and in the control group were 10 workers (27.8%). Work is related to income and economic status. The use of contraceptives also requires funding which will be an additional expense in a family. So that Fertile Age Couples will choose contraceptives according to their respective economic status. Mazza (2017) reveals that the financing factor is an obstacle to the use of the Long-Term Contraception Method, especially for women with low socioeconomic backgrounds (Mazza et al., 2017). Research conducted by Wulandari (2016) states that there is an effect of work on the use of long-term contraceptive methods in fertile aged couples (Wulandari et al., 2016). This study is in line with Bhandari's (2019) study which states that there is a work relationship with the use of the Long-Term Contraception Method. More women who have husbands as professional workers use the Long-Term Contraception Method than women whose husbands work in agriculture. This is because the husband's job who is in a government environment is more easily exposed to information and government policies

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related to health. A fertile age couple who works will also have a good economic status. The use of long-term contraceptive methods is also higher in women with good economic status compared to those with middle and lower economic status (Id et al., 2019).

In the intervention group, the frequency of fertile age couples who had 1 child was higher than those who had 2 or more children, namely as many as 13 people (36.1%). Whereas in the control group, the Fertile Age Couples who had 2 children had the highest frequency, namely 15 people (41.7%). None of the Fertile Age Couples had more than 4. The number of children affected the actions of the Fertile Age Couples in choosing the Long-Term Contraception Method by 0.169 (16.9%). Fertile aged couples who have a large number of children are 16.9% more likely to use the long-term contraceptive method than couples of fertile age who have few children. Research conducted by Yalew (2015) shows that there is a relationship between parity and the use of the long-term contraceptive method. Couples who have 1 or 2 children are more likely to not use the Long-Term Contraceptive Method than those with 3 or more children. Couples who have less than 2 will usually use non-long term contraceptive methods to spacing their pregnancies so that they can have more children in the future (Yalew et al., 2015). This study is not in line with Biza's (2017) study which states that there is no significant relationship between parity and the use of long-term contraceptive methods (Biza et al., 2016).

More than 50% of husbands do not support the use of long-term contraceptive methods in both the intervention and control groups. The reasons why the husband did not support it, among others, were because of the belief factor, fear of feeling the discomfort from the contraception used, and the installation cost which was considered quite expensive. The use of contraception is a decision that must be taken with husband and wife, so that its use will be more comfortable. Mahmudah (2015) states that there is a relationship between the use of the Long-Term Contraception Method and the support of her husband. Women who receive support from their husbands are 1.54 times more likely to use the Long-Term Contraception Method than those who do not receive support (Mahmudah, 2015). This research is in line with Saragih's research (2018) which states that there is an effect of husband's support on the use of the long-term contraceptive method (Saragih, 2017). Contraceptive use gets better if it gets support from certain parties, especially close relatives. Husbands or wives really need support from their partners in making decisions. In Indonesian society, especially those living in rural areas, the husband plays an important role in making family decisions, the wife only provides input and advice (Affandi, 2013).

The results of the pairwise difference test show that there are differences in knowledge before and after providingeducation for the mobile Long-Term Contraception Method. There is an increase in the average knowledge of 5.5. Whereas in the control group by providing education using leaflets, the knowledge of prospective acceptors also increased between before and after treatment, namely by a difference of 2.33. Based on the results of the unpaired data test, it shows that the increase in knowledge in the intervention group is greater than that in the control group. Research conducted by Vayngortin (2020) shows that there is an increase in interest and knowledge of Long-Term Contraceptive Methods after being given video education in an emergency room. Education with videos facilitates the contraceptive counseling process because information becomes easier to receive and minimizes counseling time (Vayngortin, 2020).

Other research conducted by Mahmudah (2015) shows that the provision of good communication, information and education (IEC) is related to the use of long-term contraceptive methods. Prospective acceptors who are not well educated are 1.39 times more likely to use non-Long-term contraceptive methods than those who are well educated

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(Mahampang, 2015). education can increase knowledge and accelerate behavior change in society (Dewi & Notobroto, 2014). Rosmadewi (2015) revealed that the knowledge of fertile age couples about the long-term contraceptive method affects their behavior in using it. Low knowledge indicates a lack of information about Long-Term Contraception Methods, which is a factor in the low use of long-term contraceptive methods (Rosmadewi, 2015). Other supporting research reveals that the level of knowledge affects acceptance of a contraceptive device so that correct knowledge of the Long-Term Contraceptive Method can increase participation in its use (Saragih, 2017). This study is in line with Gilliam's (2014) study which states that the use of the application iOSwaiting room as a contraceptive counseling medium can increase knowledge of potential acceptors and increase interest in implant use (Gilliam et al., 2014). Based on the description above, it can be concluded that knowledge can influence a person's behavior in using the long-term contraceptive method.

The paired different test of attitude variables showed that there were differences in attitudes before and aftereducation for the mobile Long-Term Contraception Method with a difference of 19.75. In the unpaired difference test between the intervention and control groups showed a difference in increasing attitudes between the two groups before and after treatment. In the control group withmedia leaflet, the increase in attitude was 14.47, so it was still lower than the intervention group with the mobile long-term contraceptive method. Research conducted by Kartikawati (2020) shows an increase in attitudes in fertile aged couples after being given education about Long-term Contraceptive Methods. However, the change in attitude was not in line with their interest in using this method. Interest in long-term contraceptive methods is still low (Kartikawati, 2020).

Another study conducted by Febriani (2016) stated that attitude is one of the supporting factors for the use of the male operative method in men in fertile age couples. There is a relationship between men's attitudes and behavior in participating in using contraception (Febriani, 2016). Wulandari (2016) states that there is an increase in the average attitude of respondents after being given contraceptive counseling. There is an influence of attitude on behavior in choosing the Long-Term Contraception Method. A positive attitude towards long-term contraceptive methods will increase their use (Wulandari et al., 2016).

The results of the pairwise data difference test for the intervention group also showed a p-value of 0.001 ($p<0.05$) on the action variable. The difference in the average action of the prospective acceptors before and after providingeducation for the mobile Long-Term Contraceptive Method was 9.03. Whereas in the control group there was a mean difference of 5.87 before and after giving education with leaflets. The unpaired data test showed that there was a difference in the increase in action in the two groups. The increase in action in the intervention group was better than in the control group. Research conducted by Halsall (2017) suggests that the development ofapplications mobile for contraceptive counseling affects action, satisfaction, and the level of use of the application as a counseling medium (Halsall et al., 2017).

The results of this study are in line with research by Lewis et al (2010) which states that intervention with cell phones can encourage someone to take disease prevention measures. The use of cellular technology in health makes it easier for health workers to provide more effective intervention and prevention of disease (Lewis, 2010). Research conducted by Iswatun (2013) also states that midwife counseling about the Intra Uterine Device affects its use in the community. Counseling can be done using print or electronic media and can take advantage of developing technology (Iswatun, 2013).

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Sridhar et al (2015) revealed that there was an increase in knowledge in the group that was given counseling with theapplication Plan a birth control (Sridhar et al., 2015). Gilliam (2014) also mentioned in his research that the use of theapplication iOS waiting room can increase patient knowledge and interest in using implants. In addition, this application can make services more effective and efficient because it saves counseling time so that health interventions can be carried out more quickly (Gilliam et al., 2014).

CONCLUSION

Based on the research results, it can be concluded that theeducation mobile long-term contraceptive methodhas an effect on increasing the knowledge, attitudes, and actions of prospective family planning acceptors. This research can be useful for fertile aged couples to access information related to theapplication mobile long-term contraceptive methodin an effort to increase knowledge and can be used as a reference in making decisions to choose the long-term contraceptive method. Health workers can also apply this application as a medium for health counseling and promotion so that it can streamline the service process

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