

Contraceptive-use Behavior Among Women of Reproductive Age in Rural Indonesia: Rethinking Contraceptive-use Promotion

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ABSTRACT

The use of contraception not only contributes to the reduction of maternal and child mortality rates but also serves as a strategic effort to control population growth. Long-term contraceptive methods (LCMs) are recognized as more effective and efficient when compared to non-LCMs. Nevertheless, data from the 2020 Indonesian Health Profile indicate that the majority of contraceptive acceptors continue to favor non-LCMs. Peniwen Village, characterized by a high population density of 462 individuals per square kilometer, represents a pertinent setting for examining contraceptive behavior. This study aimed to analyze the contraceptive behavior of women of reproductive age in Peniwen Village, along with their sociodemographic characteristics, and to determine the association between contraceptive method and variables such as age, education level, occupation, parity, knowledge of family planning, and family life cycle. This research employed an analytical observational design with a cross-sectional approach. The study involved 37 women of reproductive age who were family planning acceptors selected through total sampling. Data were collected using structured questionnaires encompassing demographic information, family planning knowledge, family stage, and contraceptive use. Descriptive statistics were applied to summarize the data, while the Chi-square test was used to assess associations between independent variables and contraceptive method. The findings revealed that 48.65% of respondents utilized LCMs, while 51.35% used non-LCMs. Bivariate analysis showed no statistically significant association between contraceptive method and age ($p=0.249$), education ($p=0.695$), occupation ($p=0.392$), parity ($p=0.340$), family planning knowledge ($p=0.122$), or family stage ($p=0.500$). These results underscore the necessity of adopting a more holistic approach that incorporates socio-cultural and religious dimensions to enhance family planning education among women of reproductive age in Peniwen village.

Introduction

One of the population control policies implemented by the Indonesian government is the Family Planning (FP) program. The purpose of the FP program is to control the rate of population growth and form quality families (BPS, 2023). The FP program provides knowledge to Reproductive-Age Couples (RAC) about the use

of contraception as a way to regulate births through delay, limitation, and spacing so as to avoid unwanted pregnancies and births. This aims to create a happy and prosperous family life by having an ideal number of children (Fatimatuzahroh et al., 2023). The use of contraception also aims to reduce maternal and child mortality due to unplanned births. The percentage of ever-married women aged 15-49

years who used contraception in 2022 increased to 52.39% compared to 2021 which was 51.91% (BPS, 2023). There are two general methods of contraception, namely traditional contraceptive methods and modern contraceptive methods. There are two traditional contraceptive methods, namely natural contraception without tools (consisting of the calendar method, basal temperature method, periodic abstinence, cervical mucus method, coitus interruptus method, and symptothermal method) and natural contraception with tools (consisting of condoms, spermicide, and intravenous barriers). Modern contraceptive methods are also divided into two, namely hormonal contraception (injections, pills, IUDs (intrauterine contraceptive devices), and subcutaneous contraceptive devices) and non-hormonal contraception (tubectomy and vasectomy operations). In addition, contraceptive methods can also be distinguished based on the duration of effectiveness and their use, namely LCM (Long-term Contraceptive Method) using IUDs (intrauterine devices) and implants; permanent contraception such as tubal ligation and vasectomy; non-LCM (short-acting contraceptive methods) using condoms, injections, pills and other methods not included in LCM (Nurullah, 2021). LCM are the most effective and efficient contraceptive methods when compared to non-LCM because they can be used for a long time, safer, and accelerate the decline in TFR (Total Fertility Rate) (Sumarsih & Nur Rohmah, 2023). However, data from the 2020 Indonesian health profile shows that most acceptors prefer to use the injection method 72.9% and pills 19.4%, then IUD 8.5%, implants 8.5%, tubectomy 2.6%, condoms 1.1%, and vasectomy 0.6%. This pattern occurs every year, where more family planning participants choose non-LMC (Sumarsih & Nur Rohmah, 2023).

The use of contraception is influenced by several factors, namely age, education, knowledge, number of living children, availability of contraception, support from health workers, agreement between husband and wife and side effects (Jayanti & Pujiati, 2023). Another factor that influences the participation of FAC in the family planning program and the choice of contraceptive type is family support. Family support is defined as the willingness, attitude, willingness and participation of the

family to provide assistance to other family members in need. The family can provide family planning information that they know based on their experience or participate in seeking information from other sources and support in solving the problems faced. Family support makes FAC feel loved and cared for, thus providing a sense of security and increasing self-esteem (Ariesthi et al., 2020). Families have stages of development or family continuity. There are eight stages of family life cycle with different levels of responsibility and behavioral patterns that can be used to determine the role of each family member which were proposed by Duvall: (a) the beginner's family (also towards the married couple or the marriage stage), (b) the family with the oldest child is a baby until age 30 months, (c) family with preschool-aged children (oldest children aged 30 months to 6 years), (d) families with school-age children (oldest children aged 6 to 13 years), (e) Family with teenagers (eldest children aged 13 to 25 years), (f) families who release young adults (including the first child to the last child) who leave home, (g) middle-aged parents (without position, retirees), (h) family in retirement and elderly. Each family has a different adaptation process to family development, some adapt quickly and some are slow. Each family must adapt to create good harmony between individuals and reality through unconditional acceptance, active listening, loving each other and helping to deal with existing problems (Handayani et al., 2019).

Peniwen Village is located in Kromengan District, Malang Regency, East Java Province. The population of Peniwen Village in 2022 was 3,312 people. Peniwen Village is classified as a very dense area with a population density of 462/km² (BPS Kabupaten Malang, 2023). This study aims to explore the family planning behavior among women of reproductive age who were FP acceptors in Peniwen village and determine the association between age, education level, occupation, parity, knowledge of family planning and family stages with contraceptive method in Peniwen Village.

Methodology

This study was an observational analytic study to find the distribution of contraceptive-use behavior and to determine the relationship between age, education level, occupation, parity, knowledge of family planning and family stage level as independent variables with contraceptive method as variable dependent on woman of reproductive age who were FP acceptor in Peniwen Village. Sampling using the total sampling method and obtained a sample size of 37 respondents. Data collection using a questionnaire that includes descriptive data of the sample, level of knowledge about family planning and family stages. Data processing was done descriptively using frequency distribution and average, then the correlation relationship test was analyzed using the Chi-square test (Mujahadatuljannah et al., 2023). This research has obtained ethical clearance from the Health Research Ethics Committee (KEPK) of Universitas Ciputra Surabaya with approval No.095/EC/KEPK-FKUC/I/2024.

Results and Discussion

Result

A. Univariate Analysis

This analysis is used to provide an overview of the research data based on statements from respondents in Peniwen Village regarding age, education level, occupation, parity, FP knowledge and family stages and contraceptive-use behavior (Table 1).

Table 1. Sociodemographic factors (age, level of education, occupation), parity, level of knowledge, family stage and contraceptive-use behavior of Respondents in Peniwen Village

Variables	f	%
Age		
<20 Years	1	2.70
21-30 Years	14	37.84
31-40 Years	14	37.84
>40 Years	8	21.62
Level of education		
Elementary	3	8.11
Junior High	17	45.95
Senior High	13	35.14
College	4	10.81

Occupation		
Housewife	26	70.27
Farmer	7	18.92
Employee	4	10.81
Parity		
1	12	32.43
2	23	62.16
3	1	2.70
>3	1	2.70
FP Knowledge Level		
Good	15	40.54
Enough	14	37.84
Not enough	8	21.62
Family Stages		
Stage 1	1	2.70
Stage 2	6	16.22
Stage 3	8	21.62
Stage 4	5	13.51
Stage 5	16	43.24
Stage 6	1	2.70
Stage 7	0	0.00
Stage 8	0	0.00
Contraceptive-use behavior		
LCM	18	48.65
Non-LCM	19	51.35
Total	37	100

The age distribution of respondents shows that the age of 21-30 years and the age of 31-40 years have the largest number of 14 people each (37.84%) and the smallest number is under 20 years of age as many as 1 person (2%). The number of respondents aged over from 40 year as many as 8 people (22%). The data obtained showed that the youngest age was 19 years and the oldest age was 49 years. Characteristics of respondents based on level of education grouped into four levels of education. The distribution of education levels of respondents shows that junior high school education is the highest, namely 17 people (45.95) and the least is elementary school education of 3 people (8.11%). The number of respondents with high school education is 13 people (35.14%) and college education is 4 people (10.81%).

Characteristics of respondents based on their type of occupation are grouped into three types. The distribution of the occupation of respondents shows that the largest number of housewives is 26 people (70.27%), followed by farmers as much as 7 people (18.92%) and followed by 4 employees people (10.81%). Distribution of respondents based on amount children show the majority (62.16%) have two

children. The number of respondents who have one child is 12 people (32.43%), and those who have three children and more than three children have the same number, namely 1 person each (2.7%). Characteristics of respondents based on FP knowledge level grouped into three groups. Most women have a good level of knowledge (40.54%), while 37.84% have sufficient knowledge. Only 21.62% of respondents have poor knowledge. Distribution of respondents based on Family stage level shows that the majority of families are at stage five (43.24%), followed by stage three (21.62%), stage two (16.22%), stage four (13.51), then stage one and stage six each 2.70%. There are no families at stages seven and eight. For contraceptive-use behavior, there were 18 respondents (48.65%) are LCM users and 19 respondents (51.35%) are non-LCM users.

B. Bivariate Analysis

Bivariate analysis was conducted to determine the relationship between age, education level, occupation, parity, knowledge of family planning and family stages with the use of long-term (LCM) and short-term (non-LCM) contraceptive methods in Peniwen Village.

Table 2. Relationship between Age of Respondents in Peniwen Village and Contraceptive Methods

Age	Contraceptive Methods				p-Value
	LCM		Non-LCM		
	F	%	F	%	
<20 Years	0	0.00	1	2.70	0.249
21-30 Years	5	13.51	9	24.32	
31-40 Years	7	18.92	7	18.92	
>40 Years	6	16.22	2	5.41	
Total	18	48.65	19	51.35	

The results of the analysis of the relationship between the age of respondents and the use of contraceptive methods showed that those under 20 years of age did not use LCM and there was one person who used non-LCM (2%), those aged 21-30 years had 5 people who used LCM (13.51%) and 9 people who used non-LCM (24.32%), those aged 31-40 years had the same number of LCM and non-LCM users, each with 7 people (18.92%), and those over 40 years of age

had 6 people who used LCM (16.22%) and 2 people who used non-LCM (5.41%) (Table 2). The results of the *Chi Square test* of the relationship between the age of respondents and the contraceptive method showed a significance value of 0.249 so it was concluded that there was no relationship between the age of respondents in Peniwen Village and the contraceptive method used.

Table 3. Relationship between Education Level of Respondents in Peniwen Village and Contraceptive Methods

Level of education	Contraceptive Methods				<i>p-Value</i>
	LCM		Non-LCM		
	F	%	F	%	
Elementary School	2	5.41	1	2.70	0.695
Junior High School	9	24.32	8	21.62	
Senior High School	6	16.22	7	18.92	
College	1	2.70	3	8.11	
Total	18	48.65	19	51.35	

The results of the analysis of the relationship between the education level of respondents and the use of contraceptive methods showed that at the elementary school level, more people used LCM (5.41%) compared to non-LCM (2.7%), and at the junior high school level, it was the same, more people used LCM (24.32%) compared to non-LCM (21.62%). At the high school level, there were more non-LCM users (18.92%) compared to LCM (16.22%), as well as at the college level, there were more non-LCM users (8.11%) compared to LCM (2.7%) (Table 3). The results of the *Chi Square test* of the relationship between the education level of respondents and the contraceptive method showed a significance value of 0.695, so it was concluded that there was no relationship between the education level of respondents in Peniwen Village and the contraceptive method used.

Table 4. Relationship between the Occupation of Respondents in Peniwen Village and Contraceptive Methods

Occupation	Contraceptive Methods				p-Value
	LCM		Non-LCM		
	F	%	F	%	
Housewife	11	29.73	15	40.54	0.392
Farmer	5	13.51	2	5.41	
Employee	2	5.41	2	5.41	
Total	18	48.65	19	51.35	

The results of the analysis of the relationship between the employment of respondents and the use of contraceptive methods showed that housewives used more non-LCM (40.54%) than LCM (29.73%), conversely respondents with occupation as farmers, used more LCM (13.51%) than non-LCM (5.41%). Respondents with occupation as employees, had the same number of LCM and non-LCM users, namely 5.41% (Table 4). The results of the *Chi Square test* of the relationship between the employment of respondents and the contraceptive method showed a significance value of 0.392, so it was concluded that there was no relationship between the employment of respondents in Peniwen Village and the contraceptive method used.

Table 5. Relationship between Parity of Respondents in Peniwen Village and Contraceptive Methods

Parity	Contraceptive Methods				p-Value
	LCM		Non-LCM		
	F	%	F	%	
1	4	10.81	8	21.62	0.340
2	12	32.44	11	29.73	
3	1	2.70	0	0.00	
4	1	2.70	0	0.00	
Total	18	48.65	19	51.35	

The results of the analysis of the relationship between parity of respondents and the use of FP methods showed that respondents with one parity used more non-LCM (21.62%) than LCM (10.81%), conversely, two parities used more LCM (32.43%) than non-LCM (29.73), as well as parities of three and four where LCM users were the same, each 2.7% and none used non-LCM (Table 5). The results of the *Chi Square test* of the relationship between parity of respondents and contraceptive methods showed a significance value of 0.340, so it was concluded that there was no relationship between parity of respondents in Peniwen Village and the contraceptive methods used.

Table 6. Relationship between the Level of Family Planning Knowledge of respondents in Peniwen Village and Contraceptive Methods

FP Knowledge Level	Contraceptive Methods				p-Value
	LCM		Non-LCM		
	F	%	F	%	
Good	10	27.03	5	13.51	0.122
Enough	4	10.81	10	27.03	
Not enough	4	10.81	4	10.81	
Total	18	48.65	19	51.35	

The results of the analysis of the relationship between the level of knowledge of family planning of respondents and the use of family planning methods show that respondents with a good level of knowledge use more LCM (27.03%), respondents with a sufficient level of knowledge use more non-LCM and respondents with a poor level of knowledge have the same number of LCM (10.81) and non-LCM (10.81%) users (Table 6). The *Chi Square test* on the relationship between the level of knowledge of family planning of respondents and the contraceptive method showed a significance value of 0.122, so it was concluded that there was no relationship between the level of knowledge of family planning of respondents in Peniwen Village and the contraceptive method used.

Table 7. Relationship between Family Stage Levels of Respondents in Peniwen Village and Contraceptive Methods

Family Stages	Contraceptive Methods				p-Value
	LCM		Non--LCM		
	F	%	F	%	
Stage 1	1	2.70	0	0.00	0.501
Stage 2	2	5.41	4	10.81	
Stage 3	3	8.11	5	13.51	
Stage 4	2	5.41	3	8.11	
Stage 5	10	27.02	6	16.22	
Stage 6	0	0.00	1	2.70	
Stage 7	0	0.00	0	0.00	
Stage 8	0	0.00	0	0.00	
Total	18	48.65	19	51.35	

The results of the analysis of the relationship between the family stage level of respondents and the use of family planning methods showed that stages one and five used more LCM while stages two, three, four and six used more non-LCM. In stage one, the number of LCM was 2.7% and there were no non-LCM, and in stage five, the number of LCM was 27.03% and non-LCM was 16.22%. In stage two, the number of LCM was 5.41% and non-LCM was 10.81, in stage three, the number of LCM was 8.11% and non-LCM was 13.51%, in stage four, the number of LCM was 5.41% and non-LCM

was 8.11%, and in stage six, none used LCM and non-LCM was 2.70%. There were no respondents in stages seven and eight (Table 7). The results of the *Chi Square* test of the relationship between the family stage level of respondents and the contraceptive method showed a significance value of 0.501, so it was concluded that there was no relationship between the family stage level of respondents in Peniwen Village and the contraceptive method used.

DISCUSSION

A. Relationship between Age and Contraceptive Methods

This study shows that there is no relationship between age and the choice of contraceptive methods for women of childbearing age in Peniwen Village. These results are in line with several studies including Dewiyantri (2020), Nurrasyidah et al. (2023) and Kusmiati et al. (2024), which noted that although age varies, there is no significant impact on the choice of contraceptive methods¹³⁻¹⁵. Putri et al. (2019) and Pratiwi et al. (2021) showed that age is not a determining factor in the choice of contraceptive methods^{16,17}. Rubianti et al. (2024) noted that age does not affect the decision to choose contraception¹⁸. This may be due to cultural influences, religious and social reasons. Nurrasyidah et al. (2023) showed that some older women still do not use contraception for cultural or religious reasons¹⁵. Pratiwi et al. (2021) noted that in some contexts, the decision to use contraception is more influenced by other factors such as knowledge and social support¹⁷.

Different results were shown by studies by Maryam et al. (2024), Melati et al. (2023), Mujahadatuljannah et al. (2023), Nugroho (2024) and Suryanti (2019) which showed that maternal age was positively related to the use of contraceptive methods¹⁹⁻²³. Aningsih and Irawan (2021) found that older age was related to the use of LCM²⁴. Aryati et al. (2019) showed that older women tend to use more effective contraceptive methods and these results are in line with Isneni and Fridayanti (2022) who showed that age

affects the interest in using IUD contraception^{25,26}. This may be because older women understand the importance of family planning better and more life experience makes women more open to the use of LCM²⁴.

B. Relationship between Education Level and Contraceptive Methods

This study shows that there is no relationship between age and the choice of contraceptive methods for women of childbearing age in Peniwen Village. This result is in line with Putri et al. (2019), Saragih et al. (2018) and Jayanti and Pujiati (2023) who found that education did not affect the choice of contraceptive methods^{7,16,27}. Kusmiati et al. (2024) and Nugroho (2024) stated that although education varies, there is no significant effect on the use of contraception^{14,22}. This may be due to cultural, social, and economic influences. Some women with higher education still choose traditional contraceptive methods due to cultural influences²⁸, while some women with lower education still have sufficient knowledge about contraception through experience and social environment²⁹. Nurrasyidah et al. (2023) showed that education does not always guarantee better access or understanding of contraception, as social and economic factors also influence these decisions¹⁵.

Different results were shown by research by Sutriyani et al. (2023) that education plays a role in decision making related to contraception³⁰. Natalia (2019) and Suryanti (2019) found that good education increases awareness of the importance of contraception^{23,31}. Aryati et al. (2019) found that education not only influences knowledge, but also influences attitudes towards contraception²⁵. Aningsih and Irawan (2021), Melati et al. (2023) and Mujahadatuljannah et al. (2023) stated that higher levels of education are associated with the selection of more effective contraceptive methods^{20,21,24}. Haseli et al. (2023) emphasized that highly educated mothers are more likely to use long-term contraceptive methods³².

C. Relationship between the Occupation and Contraceptive Methods

This study shows that there is no relationship between employment and the choice of contraceptive methods for women of childbearing age in Peniwen Village. This result is in line with the research of Aningsih and Irawan (2021), and Kusmiati et al. (2024) that the mother's employment does not have a significant effect on contraceptive choices^{14,24}. Putri et al. (2019) showed that employment factors are not the main determinant in choosing contraceptive methods¹⁶. This may be because many women are still influenced by social and cultural norms that limit their choices. Hatta et al. (2024) noted that even though women work, they may still be bound by traditional expectations not to use contraception²⁸. Jayanti and Pujiati (2023) showed that some women feel unfree to make decisions related to reproductive health, regardless of their employment status⁷.

Different results were shown by Prasida's (2023) study that maternal employment was related to better use of contraceptive methods³³. Mujahadatuljannah et al. (2023) emphasized that support from work contributed to the decision to use contraception²¹. Deviana et al. (2023) showed that work increases awareness of reproductive health³⁴ while Jasa et al. (2021) noted that working women are more likely to seek information on how to prevent unwanted pregnancies³⁵. Melati et al. (2023) stated that working women have more knowledge about contraception, which contributes to better method selection²⁰. Deviana et al. (2023) also showed that working mothers are more likely to use effective contraceptive methods³⁴.

D. Relationship between Parity and Contraceptive Methods

This study shows that there is no relationship between parity and the choice of contraceptive methods for women of childbearing age in Peniwen Village. This result is in line with research by Haseli et al. (2023),

Pratiwi et al. (2021) and Saragih et al. (2018) that parity does not affect the choice of contraceptive methods^{17,27,32}. Kusmiati et al. (2024) emphasized that parity is not a determining factor in the choice of contraception¹⁴. This may be because many other factors are more influential, such as information. Jayanti and Pujiati (2023) noted that although parity varies, individual perceptions of contraception are more influenced by the information obtained⁷. This is supported by Rubianti et al. (2024), which shows that women with high parity do not always have sufficient knowledge about the available contraceptive methods¹⁸.

Different results were shown by Dewiyanti's (2020) study that mothers who have more children are more likely to use contraceptive methods¹³. Mujahadatuljannah et al. (2023) and Oktavianah et al. (2023) showed that mothers with more children have a higher tendency to choose effective contraceptive methods^{21,36}. Aningsih and Irawan (2021) and Maryam et al. (2024) found that women with more children tend to use long-term contraception (LCM)^{19,24}.

E. Relationship between the Level of Family Planning Knowledge and Contraceptive Methods

This study shows that there is no relationship between the level of knowledge and the choice of contraceptive methods for women of childbearing age in Peniwen Village. This result is in line with the research of Dayanti et al. (2018) and Sarpini et al. (2022) that although mothers have knowledge about contraception, there is no significant impact on the choice of contraceptive methods^{29,37}. Good knowledge is not always followed by correct actions due to the influence of many other factors. Nurrasyidah et al. (2023) noted that many women who have knowledge about contraception still do not use it due to social pressure or lack of support from their partners¹⁵. Pratiwi et al. (2021) and Rubianti et al. (2024) showed that despite knowledge,

emotional and social factors are often stronger in influencing decisions to use contraception^{17,18}.

Different results were shown by studies by Bakri (2019), Rahayu et al. (2018) and Haseli et al. (2023) that mothers who have better knowledge tend to use more effective methods^{32,38,39}. Musyayadah *et al.* (2021) strengthened this finding by showing that knowledge plays an important role in contraceptive decision making⁴⁰.

F. Relationship between Family Life Cycle and Contraceptive Methods

This study shows that there is no relationship between family life cycle with the choice of contraceptive methods for women of childbearing age in Peniwen Village. Family planning behavior is a multifactorial process influenced not solely by biological or chronological stages of the family, but also by psychosocial, economic, and cultural dynamics^{41,42}. While it is reasonable to expect that women in earlier family stages (newlyweds or families with young children) may prefer short-term contraceptive methods and those in later stages may opt for long-term methods or permanent contraception, the lack of significant association in this study could be attributed to overlapping factors such as limited access to health services, low health literacy, or strong sociocultural norms regarding fertility and contraception. Furthermore, in rural or semi-rural settings like Peniwen, decisions regarding contraceptive use may be heavily influenced by extended family structures, religious values, spousal support, and community perceptions, which are not captured solely by the categorization of family life cycle. It is also possible that women's perception of ideal family size or economic readiness plays a more dominant role than the family life stage itself. The study by Mujahadatuljannah et al. (2023) and Nugroho (2024) emphasized that family support can influence the choice of contraceptive method^{21,22}. Oktavianah et al. (2023) also showed that husband's support contributed to more effective contraceptive use³⁶.

Haseli et al. (2023) noted that emotional support from the family gave women confidence to use contraception³². Melati et al. (2023) emphasized that family support creates a positive environment for discussing and considering contraceptive options²⁰.

These findings suggest the need for family planning programs to go beyond demographic segmentation. Interventions should be tailored not only based on the life cycle or reproductive status of women, but also integrate contextual factors such as cultural values, decision-making dynamics within the household, and the quality of provider-client communication. Qualitative approaches in future research may provide deeper insights into the reasons behind contraceptive choices at various stages of the family life cycle.

Limitation of the study

This study has several limitations that may affect the interpretation and generalizability of the findings. The relatively small sample size (n=37) may not adequately represent the broader population. The cross-sectional design also restricts causal inference. Moreover, the study did not explore deeper sociocultural factors such as religious beliefs, partner influence, and community norms, which are known to significantly affect contraceptive choices. The classification of family life cycle stages used in this research was relatively simplified and may not fully capture the complexity of household dynamics or fertility intentions. Future studies with larger, more diverse samples and mixed-method approaches are recommended to provide a more comprehensive understanding of factors influencing contraceptive use.

Conclusion

The results of the study showed that there was no relationship between age, education level, occupation, parity, knowledge of family planning and family stages on the use of family planning methods in women of childbearing age in

Peniwen village. A holistic approach, including social, cultural and religious is needed for education and motivation related to the use of contraception in women in Peniwen Village.

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