

ARAŞTIRMA / RESEARCH

Relationships Between Life Satisfaction, Psychological Hardiness, Virtual Environment Loneliness and Sociodemographic Variables of Nursing Students During COVID-19

Hemşirelik Öğrencilerinin COVID-19 Sürecinde Yaşam Doyumu, Psikolojik Dayanıklılık, Sanal Ortam Yalnızlığı ve Sosyodemografik Değişkenleri Arasındaki İlişkiler

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Abstract

Objective: This study aims to evaluate nursing students' levels of life satisfaction, resilience, and virtual environment loneliness during the COVID-19 pandemic and to examine the relationships between them and sociodemographic variables.

Material and Method: It is a descriptive, cross-sectional, and correlational research. It was conducted with 321 students studying at the Department of Nursing of the Faculty of Health Sciences. The data were evaluated using the information form, the Satisfaction with Life Scale, Psychological Hardiness Scale, and Virtual Environment Loneliness Scale. Frequency, percentage, t-test, ANOVA, and correlation analysis were used in the analysis of the data.

Results: The mean total score of the nursing students was 13.520 ± 4.348 on the Satisfaction with Life Scale, 38.498 ± 7.353 on the Psychological Hardiness Scale, and 46.467 ± 9.100 on the Virtual Environment Loneliness Scale. There was a moderate negative correlation between the Satisfaction with Life Scale and Virtual Environment Loneliness Scale ($r = -0.412$), a moderate positive correlation between the Satisfaction with Life Scale and Psychological Hardiness Scale ($r = 0.412$), and a weak positive correlation between Psychological Hardiness Scale and Virtual Environment Loneliness Scale ($r = 0.331$).

Conclusion: According to the results of the study, it was determined that there is a relationship between nursing students' life satisfaction, psychological resilience and virtual environment loneliness during the COVID-19 pandemic process.

Keywords: COVID-19, life satisfaction, nursing students, psychological hardiness, loneliness.

Öz

Amaç: Bu çalışmanın amacı hemşirelik öğrencilerinin COVID-19 pandemisi sürecinde yaşam doyumu, psikolojik dayanıklılık ve sanal ortam yalnızlık düzeylerini değerlendirmek ve sosyodemografik değişkenler ile arasındaki ilişkileri incelemektir.

Gereç ve Yöntem: Tanımlayıcı, kesitsel ve ilişki arayıcı bir çalışmadır. Araştırma Sağlık Bilimleri Fakültesi Hemşirelik Bölümü'nde öğrenim gören 321 öğrenci ile gerçekleştirilmiştir. Veriler bilgi formu, Yaşam Doyumu Ölçeği, Psikolojik Dayanıklılık Ölçeği ve Sanal Ortam Yalnızlık Ölçeği kullanılarak değerlendirildi. Verilerin analizinde frekans, yüzde, t-testi, ANOVA ve korelasyon analizi kullanılmıştır.

Bulgular: Hemşirelik öğrencilerinin toplam puan ortalamaları Yaşam Doyumu Ölçeği'nden ($13,520 \pm 4,348$), Psikolojik Dayanıklılık Ölçeği'nden ($38,498 \pm 7,353$) ve Sanal Ortam Yalnızlık Ölçeği'nden ($46,467 \pm 9,100$) idi. Yaşam Doyumu Ölçeği ve Sanal Ortam Yalnızlık Ölçeği arasında orta derecede negatif bir korelasyon ($r = -0,412$), Yaşam Doyumu Ölçeği ve Psikolojik Dayanıklılık Ölçeği arasında orta derecede pozitif bir korelasyon ($r = 0,412$) ve Psikolojik Dayanıklılık Ölçeği ile Sanal Ortam Yalnızlık Ölçeği arasında zayıf bir pozitif korelasyon ($r = 0,331$) bulundu.

Sonuç: Çalışma sonuçlarına göre, COVID-19 pandemi sürecinde hemşirelik öğrencilerinin yaşam doyumu, psikolojik dayanıklılığı ve sanal ortam yalnızlığı arasında ilişki olduğu saptanmıştır.

Anahtar Kelimeler: COVID-19, yaşam doyumu, hemşirelik öğrencileri, psikolojik dayanıklılık, yalnızlık.

1. Introduction

A public health emergency of international concern was declared by the World Health Organization due to the Coronavirus disease (COVID-19) that emerged in the Wuhan province of China in December 2019 (1, 2). The rapid spread of COVID-19 and the increase in the number of cases and deaths led to the development of feelings such as worry and anxiety in individuals (3, 4). Although the first COVID-19 case was detected in Turkey in March 2020, the rapid rise in the number of cases negatively affected the psychological states of not only individuals but also undergraduate students (5).

After the declaration of the pandemic, education in schools and universities was either stopped for a while or suspended due to isolation measures (6, 7). Circumstances of the pandemic such as the closure of schools, distance education process, online virtual classes, quarantine practices, and not being able to perform art or cultural activities led to psychological changes such as anxiety, worry, introversion, tension, fear of unknown, disappointment, loneliness and stress, and caused an increase in internet addiction, especially in the young population (5, 8, 9).

The restrictions brought by the pandemic process also negatively affect life satisfaction. Life satisfaction represents the cognitive aspect of an individual's subjective well-being. The higher the life satisfaction levels are in young people, the less social and individual stress they experience (10).

Psychological hardiness is defined as the ability to bounce back and recover quickly from difficult situations (11). During the pandemic period, the frequency of use of technology by students has increased due to the education, communication, information, and social communication needs (12). In the literature, spending too much time on the internet and in the virtual environment was noted to negatively affect both the academic successes of the students and their psychology (13). Moving social relations and communications to the virtual platform through mass media not only creates a feeling of loneliness in individuals but also drags them into the process of virtual loneliness (14). Given this information, this study was conducted considering the need to determine how the life satisfaction and psychological hardiness of nursing students have been affected during the pandemic and to evaluate the virtual environment loneliness levels.

This study aimed to evaluate the life satisfaction, psychological hardiness, and virtual loneliness levels of nursing students during the COVID-19 pandemic and investigate relationships between them. Therefore, answers to the following questions were sought in this study:

What are the life satisfaction, psychological hardiness levels, and virtual environment loneliness of nursing students?

Is there a relationship between life satisfaction and psychological hardiness?

Is there a relationship between life satisfaction and the level of virtual environment loneliness?

Is there a relationship between psychological hardiness and the level of virtual environment loneliness?

Dependent variables: Life satisfaction scale, virtual environment loneliness scale, resilience scale scores.

Independent variables: Sociodemographic variables such as age, gender, and class.

2. Materials and Methods

2.1. Study Design

This descriptive and cross-sectional study was designed to determine the life satisfaction, psychological hardiness, and virtual environment loneliness levels of nursing students during the COVID-19 pandemic.

2.2. Participants

A total of 484 students from the Nursing Department formed the population of the study. It was aimed to reach the entire population. Therefore, sampling was not performed. A total of 330 students from the population responded to the communication, which was done via email. Having excluded the incomplete and erroneous forms, a total of 321 survey forms were evaluated. The questionnaire method was used in the research and it aimed to reach the whole universe. The study reached 80.2% of the universe (321 students). In this framework, a power analysis was performed considering the sample size, and the power of the test was found to be 0.95. According to Barrera et al. (2000), the power of the study is expressed as $1-\beta$ (β = type II error probability), it is generally reported that the studies should have α : 0.05, 80% power, accordingly it can be said that the power of this study was high (15).

2.3. Data Collection and Instruments

The data of this study were collected between 5 April and -5 August 2020 as an online survey due to the distance education format as a result of the pandemic conditions. The questionnaire was applied to the nursing students with the link created through the Google form. Students were invited to the survey via their e-mail addresses. Online permissions were obtained from the participants by informing them about the purpose, duration, survey forms, and the voluntary basis of participation in the research. The link address of the study questionnaire was sent to the participants who accepted to fill out the questionnaire. The survey consisted of four parts. In the first part, there were 16 questions on participants' demographics and some individual characteristics related to COVID-19. The second, third, and fourth parts included the Satisfaction with Life Scale (SWLS), Psychological Hardiness Scale (PHS), and Virtual Environment Loneliness Scale (VELS), respectively.

Instruments;

The Satisfaction with Life Scale (SWLS)

A 5-item single-dimensional scale, developed by Diener et al. (16) and adapted to Turkish by Dağlı and Baysal (17), was used to measure the life satisfaction levels of nursing students. Scoring of each item in this scale was carried out in a five-point Likert-type and it is as follows: 1= strongly disagree, 2= disagree, 3=neutral, 4= agree, 5= strongly agree. The minimum score that can be obtained from the scale is 5

(1 x 5) and the maximum score is 25 (5 x 5). While low scores on the scale indicate low levels of life satisfaction, high scores indicate high levels of life satisfaction (16, 17). While Cronbach's alpha coefficient of the scale was calculated as 0.88 in the study of Dağlı and Baysal (17), in this study, Cronbach's alpha (α) coefficient of SWLS was calculated as 0.876.

Psychological Hardiness Scale (PHS)

The PHS developed by Işık (18), consisting of 21 items and three sub-dimensions, was used to determine the psychological hardiness levels of nursing students (18). Scoring of each item in this scale was carried out in a five-point Likert-type and it is as follows: 0= Strongly disagree, 1= Disagree, 2=Neutral, 3= Agree, 4= Strongly agree. The second and 15th items of the scale are reverse-scored. The minimum score that can be obtained from the scale is 0 (0 x 21) and the maximum score is 84 (4 x 21). High scores obtained on the scale indicate high levels of psychological hardiness. While Cronbach's alpha coefficient of the scale was calculated as 0.76 in the study of Işık (18), it was calculated as 0.892 in this study.

Virtual Environment Loneliness Scale (VELS)

The VELS developed by Korkmaz et al. (19), consisting of 20 items and three sub-dimensions, was used to determine the loneliness levels of nursing students in virtual environments (19). Scoring of each item in this scale was carried out in a five-point Likert-type and it is as follows: 1= Very untrue of me, 2 = Somewhat untrue of me, 3 = Neutral, 4 = Somewhat true of me, 5= Very true of me. All items (items 16 - 20) in the virtual loneliness sub-dimension of the scale are reverse-scored. The minimum score that can be obtained from the scale is 20 (1 x 20) and the maximum score is 100 (5 x 20). While Cronbach's alpha coefficient of the scale was calculated as 0.816 in the study of Korkmaz et al. (19), it was calculated as 0.729 in this study.

2.4. Statistical Analysis

In this study, frequency and percentage values related to the individual characteristics of nursing students were calculated. Exploratory factor analysis was performed for the construct validity of the scales, while the internal consistency values for the reliability analysis were calculated using Cronbach's alpha coefficient. Moreover, independent sample t-test, one-way ANOVA, and Pearson correlation analysis were used. Results were evaluated at a 95% confidence interval, with a significance level of $p < 0.05$.

2.5. Ethical Considerations

This study was conducted by the principles of the World Medical Association Declaration of Helsinki. Ethics approval for the study from the Afyonkarahisar Health Sciences University Non-invasive Clinical Research Ethics Committee was obtained (03.07.2020/ IRB: 2020/284), with permission from the Ministry of Health. Before the surveys were conducted with the participants, the content and the expected time to complete the survey were explained to them, and their consent was obtained.

3. Results

The distribution of certain individual characteristics of

nursing students is presented in Table 1. The mean age of the students was 20.52 ± 1.49 (\pm SD) years. While 86% of the participants were female, 31.5% were 2nd grade students. A total of 12.5% of the students were working, and 65.4% of them had an equal income to their expenses. Among the participants, 85.5% of them had a nuclear family, and 89.7% had been living with their families during the pandemic. While 96.6% of the students did not have any psychiatric illness, 44.5% of them reported their physical activity status as moderate during the pandemic.

Table 1. Distribution of Participants by Socio-demographic Characteristics

Variable	Group	n	%
Gender	Female	276	86
	Male	45	14
Academic year	1	49	15.3
	2	101	31.5
	3	84	26.2
	4	87	27.1
Working	Yes	40	12.5
Status	No	281	87.5
Income status (family)	Income less than the expense	22	6.9
	Income equal to the expense	210	65.4
	Income more than expense	89	27.8
Family type	Nuclear	273	85.5
	Extended	48	15.5
Accommodation	House	288	89.7
	Dorm	33	10.2
Number of individuals living with	$\geq 2-4$	146	45.4
	≥ 5	175	54.5
Presence of psychiatric illness	Yes	11	3.4
	No	310	96.6
Physical activity status	Low	139	43.3
	Moderate	143	44.5
	High	39	12.1
TOTAL		321	100.0

Descriptive statistics of nursing students related to internet and social media usage time during the pandemic are presented in Table 2. A total of 60.5% of the nursing students reported using the internet about 2-5 hours a day, 25.2% for 6-9 hours, and 10.0 % for 10 hours or more. While only seven of the students stated using social media a mean of six hours or more a day, 72.3% for 2-5 hours, and 25.5% for less than an hour.

Descriptive statistics on life satisfaction, psychological hardiness, and virtual environment loneliness levels, and correlation analysis results of the relationship between scales are presented in Table 3. Cronbach Alpha reliability coefficients of life satisfaction, psychological hardiness, and virtual environment loneliness scales were determined to be 0.876, 0.892, and 0.729 respectively, and above 0.70 for all. The mean life satisfaction score of 321 nursing students was 13.520 ± 4.348 ($X \pm$ SD), while the mean psychological

hardiness score was 38.498 ± 7.353 ($X \pm SD$), and the mean virtual environment loneliness score was 46.467 ± 9.100 ($X \pm SD$). All correlation coefficients between life satisfaction, psychological hardiness, and virtual environment loneliness were found to be significant ($p < 0.010$). There was a moderate positive ($0.401 \leq r \leq 0.592$) correlation between life satisfaction and psychological hardiness ($r = 0.412$; $p < 0.050$), while no significant relationship was found between psychological resilience and virtual environment loneliness ($r = 0.331$; $p < 0.050$). This result reveals that as the life satisfaction of nursing students increased, their psychological hardiness increased. A moderate negative ($0.401 \leq r \leq 0.592$) correlation was found between life satisfaction and virtual environment loneliness ($r = -0.412$; $p < 0.050$). As the life satisfaction of nursing students decreased, levels of virtual environment loneliness increased (Table 4).

Table 2. Distribution of Some Characteristics Related to Participants' Internet Usage Duration

Variable	Group	Number (f)	Percent (%)
Daily internet usage duration	≤ 1 hours	14	4.4
	2 - 5 hours	194	60.5
	6 - 9 hours	81	25.2
	≥ 10 hours	32	10.0
Daily social media usage duration	≤ 1 hours	82	25.5
	2 - 5 hours	232	72.3
	≥ 6 hours	7	2.1
TOTAL		321	100.0

Table 3. Scales and Cronbach's Alpha, SD and min-max values

Variables	Cronbach's Alpha	Min.	Max.	X	SD
SWLS	0.876	5.00	25.00	13.520	4.348
PHS	0.892	6.00	54.00	38.498	7.353
VELS	0.729	20.00	77.00	46.467	9.100

**Correlation is significant at the 0.01 level (2-tailed).

SWLS: The Satisfaction with Life Scale, PHS: Psychological Hardiness Scale, VELS: Virtual Environment Loneliness Scale

Table 4. Scales and Correlation Coefficients Their Relationships

	SWLS		PHS		VELS	
	r	p	r	P	r	p
SWLS	-	<0.05	0.412**	<0.05	-0.412**	<0.05
PHS	0.412**	<0.05	-	<0.05	0.331**	<0.05
VELS	-0.412**	<0.001	0.331**	<0.001	-	<0.05

**Correlation is significant at the 0.01 level (2-tailed).

SWLS: The Satisfaction with Life Scale, PHS: Psychological Hardiness Scale, VELS: Virtual Environment Loneliness Scale

The results of the t-test and variance analysis performed to compare life satisfaction, psychological hardiness, and virtual environment loneliness levels of the nursing students with socio-demographic characteristics are presented in Table 5. Life satisfaction, psychological hardiness, and virtual environment loneliness of nursing students were found not to have significant differences according to the academic year, marital status, and family type ($p > 0.050$).

The life satisfaction levels of the students were determined to show a significant difference according to gender, and the presence of psychiatric illness ($p < 0.050$). Life satisfaction levels of female students ($X = 13.8$) were found to be higher than male students ($X = 11.5$), and similarly, female students' psychological hardiness ($X = 39.3$) levels were also higher than male students ($X = 33.4$). Students with psychiatric illnesses had lower levels of life satisfaction ($X = 9.54$) and higher levels of virtual environment loneliness ($X = 52.9$) than those without any psychiatric illnesses.

Table 5. Comparison of Life Satisfaction, Psychological Hardiness, and Virtual Environment Loneliness Levels of Participants by Socio-demographic Characteristics

Variable	Group	SWLS	PHS	VELS
		X ±SD	X ±SD	X ±SD
Gender	Female	13.8±4.24	39.3±5.92	46.4±8.45
	Male	11.5±4.49	33.4±11.94	46.3±12.47
	p	0.001*	0.000*	0.901
Academic year	1	13.4±4.40	36.3±8.79	46.1±10.66
	2	13.7±4.48	38.7±7.69	46.5±9.03
	3	12.9±4.27	38.9±6.22	46.2±8.63
	4	13.7±4.24	38.4±7.35	46.7±8.80
	p	0.565	0.174	0.980
Marital status	Single	13.5±4.33	38.5±7.32	46.3±8.95
	Married	12.3±7.02	35.6±11.5	55.3±20.5
	p	0.636	0.504	0.090
Family type	Nuclear	13.6±4.38	38.5±7.39	46.0±9.04
	Extended	12.7±4.06	37.9±7.18	48.8±9.14
	p	0.161	0.567	0.053
Presence of psychiatric illness	Yes	9.54±3.75	34.6±7.78	52.9±9.97
	No	13.6±4.30	38.6±7.31	46.2±9.00
	p	0.002*	0.076	0.017

*p<0,05

SWLS: The Satisfaction with Life Scale, PHS: Psychological Hardiness Scale, VELS: Virtual Environment Loneliness Scale

4. Discussion

This present study, aimed to determine the relationships between nursing students' life satisfaction, psychological resilience, and virtual environment loneliness levels during the COVID-19 process. The study results revealed that the COVID-19 pandemic has affected the life satisfaction, psychological hardiness, and virtual environment loneliness of nursing students.

While the COVID-19 pandemic greatly affected the daily lives of individuals, it also led to an increase in the duration of internet and social media usage (20, 21). It was found in this study that while more than half of the nursing students used the internet for 2-5 hours a day and one out of every four students for 6-9 hours, the majority of them used social media for 2-5 hours. The depression levels of undergraduate students during the pandemic have been reported as the predictors of social media addiction (22), and a strong relationship was found between depression and social media addiction (23, 24). In this context, it may be thought that due to the psychological and social problems experienced during the pandemic, individuals spend more time on the internet and do not use the internet effectively and efficiently.

In this study, females had higher levels of psychological hardiness than males. Similarly, in previous studies, the psychological hardiness of females was reported to be higher than males (11, 26). In another study, gender was found not to affect psychological hardiness (27). Our study results are in line with the literature. It can be considered that females have good coping skills against crises and stressful situations, or are aware of the coping methods.

During the pandemic, many individuals in society showed psychological symptoms such as fear, anxiety, stress, and depression (2, 28, 29). There was a moderate negative correlation between the Satisfaction with Life Scale and Virtual Environment Loneliness Scale ($r = -0.412$), a moderate positive correlation between the Satisfaction with Life Scale and Psychological Hardiness Scale ($r = 0.412$), and a weak positive correlation between Psychological Hardiness Scale and Virtual Environment Loneliness Scale ($r = 0.331$). Our study results showed that as the psychological hardiness of nursing students increased, their levels of life satisfaction also increased. Nursing students with high psychological hardiness also had high levels of life satisfaction (Table 3).

Karataş and Tagay (27) stated that a high level of life satisfaction or not experiencing any psychological trauma affects the psychological hardiness of individuals positively and significantly (27). Staying at home during the pandemic has been noted to affect both the individual social, and academic lives of students. In this context, there has been a positive significant relationship between students' life satisfaction and psychological hardiness (30). In the literature, individuals with higher anxiety levels were noted to have lower levels of psychological hardiness and life satisfaction (31). Life satisfaction levels of females, in this study, were found to be higher than males. Students with psychiatric illnesses had lower levels of life satisfaction and higher levels of virtual environment loneliness than those without any psychiatric illnesses (Table 4). Similarly, in previous studies, female undergraduate students were reported to have higher levels of life satisfaction (32, 33), so these literature findings support our study results.

In the literature, being in home quarantine during the COVID-19 pandemic was stated to greatly affect the social participation levels and life satisfaction of individuals, thus leading to psychosocial tension. These negative effects on the level of social participation were associated with lower levels of life satisfaction (-30.5%) during the period of home quarantine ($p < 0.001$) (20). The increased use of technological communication tools by young adults, who become lonely in this period, has led to an increase in Internet and social media addiction also (34). Özdemir et al. (35) stated that male students shared more virtually compared to female students, besides, male students had higher levels of virtual environment loneliness and virtual socialization than females (35). Similarly, virtual environment loneliness levels of male students were reported to be higher than female students in the study of Yeşildal and Ertaş (2020) (36). In this study, the mean scores of virtual environment loneliness did not show a significant difference according to gender ($p > 0.050$). The differences between the findings of this study and the results in the literature may be due to the difference in the sample groups and the scales used in the studies.

It is noted that as the time people spend on the internet increases, individuals move away from social life, their social relationships weaken, and they feel lonelier due to less communication with family and individuals around them (14). While the individual thinks that by spending time in virtual environments and the internet who would socialize and complete the missing social part, in fact, who gets disconnected from the existing real family, friends, and social networks (35). In this study, students with psychiatric illnesses had lower levels of life satisfaction and higher levels of virtual environment loneliness than those without psychiatric illnesses. Also, as the life satisfaction levels of the nursing students decreased, their virtual environment loneliness increased. These results can be interpreted that young people, who are necessarily isolated during the pandemic process, have psychiatric problems (fear, anxiety, depression associated with COVID-19), and have decreased life satisfaction, also become lonely in the virtual environment. A weak negative level of correlation was found between loneliness and psychological hardiness in a study conducted with undergraduate students during the pandemic. In this context, when students' feelings or perceptions of loneliness increase, their psychological hardiness decreases (7). In another study, a weak negative level of correlation was found between loneliness and psychological well-being in healthcare professionals (37).

Although billions of people use social media networks every day, many people feel very lonely, both physically and virtually. For individuals experiencing high social and physical loneliness, the use of social media is a platform where psychological needs are met (38). In our study, a weak positive level ($r = 0.331$; $p < 0.050$) of correlation was found between psychological hardiness and virtual environment loneliness. This result can be explained by the fact that students with reduced psychological hardiness spend more time on social media, thus reducing their virtual environment loneliness. It is thought that more studies are needed before virtual remedies to replace face-to-face interactions during COVID-19 can be proposed as a solution to all problems.

5. Conclusion

While the life satisfaction and psychological hardiness levels of nursing students decreased during the pandemic, their virtual environment loneliness increased. The presence of any psychiatric problem was a risk factor for life satisfaction and virtual environment loneliness.

Reducing the psychological effects of the COVID-19 pandemic on nursing students and preparing them for crises is very important. In this context, it is necessary to strengthen students' life satisfaction and psychological resilience by conducting supportive and motivating training and activities. There is a need for comprehensive studies investigating nursing students' life satisfaction, psychological hardiness, and virtual environment loneliness in larger sample groups, with groups of students from different regions.

5.1. Limitation of the study

Students included in this study were only from the nursing department of one university. The rapid psychological changes experienced during the pandemic may have

affected the students' answers to the questions. The scales are based on students' self-report.

6. Contribution to the Field

The results of the study show that nursing students are at risk for emotional problems. It is thought that the results can be a guide for future research and raise awareness about focusing on the psychosocial needs of nursing students.

Conflict of Interest

This article did not receive any financial fund. There is no conflict of interest regarding any person and/or institution.

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Authorship Contribution

Concept: YC, DÖ; **Design:** YC, HNÇÖ, DÖ, İK; **Supervision:** YC, HNÇÖ, DÖ, İK; **Funding:** None; **Materials:** YC, HNÇÖ, DÖ; **Data Collection/Processing:** YC, HNÇÖ, DÖ; **Analysis/ Interpretation:** İK, YC, HNÇÖ, DÖ; **Literature Review:** YC, HNÇÖ, DÖ; **Manuscript Writing:** YC, HNÇÖ, DÖ; **Critical Review:** YC, HNÇÖ, DÖ, İK.

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