

Original Article

The Factors that Affect the Exercise Behaviors of Nursing Students

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Abstract

Aim: This research was conducted in order to determine the exercise behaviors of nursing students and the factors that affect these behaviors.

Material and Method: The universe of the research consisted of 720 students from the 1st, 2nd, 3rd, 4th grades of 2015-2016 Spring Semester from Manisa Vocational Health High School. The sample was composed of 603 students that accept to participate in the research. Data were collected by using the Student Description Form, Exercise Profit/ Obstacle Scale. The data gathered from the research were evaluated by SPSS 21,0.

Results: It was stated that 71% of the students were women (n:428), the average age was $20,90 \pm 1,819$ and 53,2% (n:321) of the students didn't exercise regularly. The average points of the exercise benefit sub-scale of Exercise Profit/ Obstacle Scale were found high ($90,41 \pm 12,622$) and the exercise obstacle sub-scale were found low ($33,64 \pm 6,954$) for the nursing students. The benefit perception points were found as significantly high for the ones that exercise regularly ($p < 0,05$). Similarly the obstacle perception points were found as significantly high for the ones that don't exercise and for the ones state that they don't have spare time ($p < 0,05$).

Conclusion: The level of understanding the benefits of exercise for the nursing students was found as high. For improving the health conditions and in order to get individuals to adopt a habit of exercising regularly, it was suggested to provide physical activity environments from which the students may benefit easily.

Key Words: Exercise, Nursing Student

Introduction

Exercise or regular physical activity is important health behaviour for good quality and healthy life (Pender et.al 2015, Alkaya and Okuyan 2017). Exercise continuously improves performance, gives the body and the organism rhythm (Çakır et. al 2002). Regular exercise is known to improve physiological, psychological, metabolic and physical parameters. In addition, regular exercise has an important effect on maintaining body weight control and preventing obesity (Yıldırım et. al 2017).

In the development of health; it is important for individuals to exercise regularly according to their healthy nutrition and physical capacity (Dogan and Ayaz 2015, Bakır and Hisar 2016).

The World Health Organization recommends that at least 75 minutes of severe per week for adults aged 18-64, or moderate physical activity for at least 150 minutes (WHO 2010). Many perceived benefits of exercise, such as increasing flexibility and endurance, improving body appearance, reducing stress, increasing work efficiency, increasing self-confidence, make it easier to adopt exercise (Bakır and Hisar 2016, Ortabag et. al 2010). However, according to the Health Promotion Research Report in Turkey (2013), more than half (55.5%) of individuals aged 18 and over do not have enough physical activity (T.C. Sağlık Bakanlığı, 2013). The World Health Organization reports that the lack of adequate level of physical activity increases the risk of cancer, heart disease, stroke and diabetes by 20-

30% and shortens the life cycle by 3-5 years, and it will also force society to suffer because of the increased cost of medical care and loss of productivity (WHO 2019). In our country, university students reflect a large part of the young adult population. In addition, the level of physical activity of young adults affects the incidence of the occurrence of preventable diseases that can cause problems in older ages (VonBothmer and Fridlund 2005, Oral and Aktop 2014).

Nursing students are required to adapt to changing support networks, increased academic workloads and new surroundings when they enter the university immediately after their high school education. They have more freedom and control in determining their lifestyles than in their earlier periods. They are especially likely to have problems with healthy eating and exercise habits such as gaining and maintaining healthy eating and exercise habits and eliminating psychosocial needs (Tuygar and Arslan 2015). The perceptions of benefit and disability related to exercise behaviour, which is one of the behaviours that protect and improve the health of individuals, may affect their orientation towards this behaviour (Champion and Skinner 2008). However, the intensity of work life, lack of social support, lack of access to exercise facilities (sports facilities), exercise costs, lack of energy, adverse weather conditions, poor health conditions, perceived barriers adversely affect exercise (Dogan and Ayaz 2015, T.C. Sağlık Bakanlığı 2013, Altay et. al 2015). There are numerous descriptive studies on different groups in Turkey and abroad (workers, women, students at the hostel, lecturers, nurses) that show the health promotion behaviour (Dogan and Ayaz 2015, Ortabag et. al 2010, Ozveren and Dogan Yılmaz 2018, Altay et. al 2015, Aysan et. al. 2014, Yalçınkaya et. al. 2007). When these studies are examined, it is seen that the least applied health behaviour is exercise. In our country, studies on evaluation of exercise behaviours are becoming increasingly important.

It is important that the students who are candidates for the nursing profession gain the exercise behaviour which is the basis for healthy life, that the members of this profession who will provide health services to the society in the future are physically and spiritually in a complete good condition and that they maintain this good condition (Aysan et. al. 2014). It is estimated that

students have less time to exercise because of the intensive and exhausting training programs carried out in health professions such as nursing. Therefore, it is thought that this study will contribute to the determination of exercise benefit/barrier perceptions of nursing students, especially to the planning of interventions aimed at overcoming exercise barrier perceptions and motivating students to exercise regularly.

Material-Method

Purpose of the Research

This research is a descriptive study conducted to evaluate nursing students' exercise behaviours and influencing factors.

The Universe of the Research and Sampling Selection

The universe of the research consisted of 720 students enrolled in the Nursing Department of Manisa Health School in the spring semester of 2015-2016 and educated in first, second, third and fourth class. No sampling selection was made in the study. The sample of the study consisted of 603 students who accepted to participate in the study voluntarily, who came to the class on the day the research data were collected and filled the data collection tool completely. 83.75 % of the research universe was reached. 93 students who did not come to school on the day of the study, 25 students filling the missing data were not evaluated.

Data Collection Tools

Student Information Form: The Student Information Form was prepared by researchers in accordance with the literature (Pender et.al 2015, Dogan and Ayaz 2015, Bakır and Hisar 2016, Ortabag et. al 2010, Oral and Aktop 2014, Tuygar and Arslan 2015, Ozveren and Dogan Yılmaz 2018, Aysan et. al. 2014). This form consists of two parts. In the first part, 5 closed-ended questions were asked to determine the socioeconomic characteristics of the student nurses, such as their level of education, class, BMI, smoking. In the second part, 10 closed-ended questions were asked to determine the characteristics of exercise behaviour, such as the ability to exercise, regular exercise, exercise frequency, exercise duration, exercise type, the barrier to exercise. It consists of 15 questions.

Exercise Benefit / Barrier Scale: This scale was developed in 1987 by Sechrist, Walker and

Pender in order to measure the perceptions of the benefit and the barrier of the exercise of the individuals who will participate in the exercise (1987). Turkish validity and reliability of the scale made by Ortabag et al. (2010) and the Cronbach alpha value were 0.95 (Ortabag et. al 2010). In this study, Cronbach Alpha value was found as 0.87.

The scale consists of 43 items in total. There are two subgroups of the scale. The subgroups are the Exercise Barriers Scale and the Exercise Benefits Scale. Each subgroup can be used independently alone. The total score of the scale gives the score of the exercise benefits/barriers scale. The scale has 4 answers in the conditional elective Likert scale format from 4 (strongly agree) to 1 (strongly disagree. Barriers scale items 4, 6, 9, 12, 14, 16, 19, 21, 24, 28, 33, 37, 40 and 42, benefit scale items 1, 2, 3, 5, 7, 8, 10, 11, 13, 15, 17, 18, 20, 22, 23, 25, 26, 27, 29, 30, 31, 32, 34, 35, 36, 38, 39, 41 and 43. The minimum score that can be obtained from the scale is 43 and the highest score is 172. The higher the score, the more the individual believes in the benefit of the exercise. The score range of the barriers scale is between 14-56 and the range of benefit scale is between 29-116 (Ortabag et. al 2010).

Implementation of Data Collection Tools

Data were collected between 30 May and 12 June 2016. After the explanations about the research were made to the students who accepted to participate in the research, the questionnaire and the scale were distributed by the researcher and the forms were filled by themselves. In addition, body measurements such as body weights and height were evaluated according to their own expressions.

Data analysis

The data obtained were evaluated using the SPSS 21.0 package program. The mean of all data was calculated as standard deviation and the data were evaluated in confidence intervals of 95%. Group variables were taken as ratio or percentages. All data obtained from the study were evaluated by taking into account the dependent and independent variables, the significance test of the difference between the two percentages, the significance test of the difference between the two means (Two Independent T-Test), the significance test of the difference between three and more average (One

Way Anova). The significance level was taken as 0.05.

Ethical issues

Prior to the collection of the research data, necessary written permissions were obtained from the Scientific Ethics Committee of Ege University Faculty of Nursing (2016-176) and Manisa Celal Bayar University School of Health School. The aim and benefit of the study were explained to the students, and verbal permissions were obtained and volunteers were provided to participate in the research.

Results

71% of the students were female (n: 428), the mean age was 20.90 ± 1.819 , 56.2% (n: 339) of the Anatolian high school graduates, and 61.9% (n: 373) never smoked. 62% (n: 374) did not use any alcohol, 84.6% (n: 510) had the opportunity to exercise. While 94.9% (n: 572) of the students did not have exercise barriers problems, whereas only 47.6% of them (n: 278) had regular sports. 43.20% (n: 124) of the students who exercise regularly 1-2 days a week, 57.14% (n: 164) 30-45min, 74.43% (n: 205) in the evening and 59.23% (n: 170) stated that they were walking.

The mean score of the total score of the exercise benefits/barriers scale (EBBS) was 124.05 ± 13.88 . In our study, when the exercise benefit/barrier perceptions of the students were examined, the average EBBS benefit subscale score was 90.41 ± 12.62 and the mean score of the barrier was found to be 33.64 ± 6.95 (Table 2).

In this study, it was found that the students who have no exercise and the exercise duration of 30-45 minutes were significantly higher than the students' perception of exercise barrier (t: -3.257 p: 0.001, F = 5.764 p = 0.004) (Table 3). In this study, it was found that the exercise benefit perceptions of the students who exercise regularly and exercised for 2 hours were significantly higher (p: 0.009, t: 5.592 p: 0.000, F = 4.601, p = 0.01) (Table 3).

The most powerful benefits of exercise perceived by students are related to physical performance and psychological appearance. In the study, the highest value obtained from the items in the exercise benefit sub-group of nursing students was determined as the "physical performance" factor (26.01 ± 3.93)

(Table 4). At the beginning of the items that students perceive as obstacles to exercising; "Exercise exhausts me" (2.80 ± 0.74); "Exercising makes me tired" (2.62 ± 0.78); "Exercise places too far" (2.58 ± 0.85); "Exercise is too boring for me" (2.58 ± 0.85); "Exercise is hard work" (2.50 ± 0.84) has been stated (Table 5). At the beginning of the items that students

perceive as a benefit to exercise; "Exercise increases muscle strength" (3.41 ± 0.63); "Exercise reduces stress and tension" (3.35 ± 0.65); "Exercise increases strength" (3.29 ± 0.66); "I like exercise" (3.28 ± 0.68); "Exercise provides the development of mental health" (3.97 ± 0.69) has statements (Table 5).

Introductory specifications	n	%
Gender		
Female	428	71
Male	175	29
Class		
1st class	164	27.2
2nd class	151	25.1
3rd class	187	31
4th class	101	16.7
Educational status		
Health vocational high school	90	14.9
High school	133	22.1
Anatolian high school	339	56.2
Degree	41	6.8
Smoking		
I've never smoke	373	61.9
I stopped smoking	50	8.2
I'm still smoking	180	29.9
Use of alcohol		
I've never drunk alcohol	374	62
I stopped drinking	56	9.3
I'm still drinking alcohol.	173	28.7
The ability to exercise		
Yes	510	84.6
No	93	15.4
The disease barrier to exercise		
Yes	31	5.1
No	572	94.9
Regular exercise		
Yes	287	47.6
No	316	52.4
Your frequency of exercise (n:287)		
Everyday	23	8.03
1-2 days a week	124	43.2
3-4 days a week	77	26.82
4-5 days a week	63	21.95

Daily exercise time (n:287)		
30-45 min.	164	57.14
1 hour	90	31.35
2 hour	33	11.51
Exercise time zone (n:287)		
Morning	54	18.82
Noon	28	9.75
Evening	205	74.43
The type of exercise (n:287)		
Walking	170	59.23
Aerobics/Fitness	63	21.95
Pilates/Yoga	19	6.62
Walking and Pilates/Yoga	26	9.05
Volleyball	3	1.05
Football	6	2.1

Table 2. The Average Scores of Sub-scales of Exercise Benefit/ Barrier Scale of Nursing Students

Sub-scales	Upper and lower values of research	X ± SS
Benefits	29–116	90.41±12.62
Barriers	14–56	33.64±6.95
Exercise Benefits / Barriers Scale Total Score	43-172	124.05±13.88

Table 3. Comparison of the Average Scores of Exercise Benefit/ Barrier Scale According to the Characteristics of Nursing Students ' Exercise Behaviour

Features related to exercise behaviour	N	Exercise benefit scale x± SS	P	Exercise barrier scale x ± SS	P
The ability to exercise					
Yes	510	90.98±12.28	t:2.609	33.25±6.75	t:-3.257
No	93	87.29±14.01	p:0.009	35.78±7.63	p:0.001
An barrier to exercise					
Yes	31	86.83±16.80	t:-1.622	34.32±8.03	t:0.559
No	572	90.61±12.34	p:0.105	33.60±6.89	p:0.576
Regular exercise					
Yes	287	93.36±12.61	t:5.592	33.16±6.99	t:-1.622
No	316	87.73±12.03	p:0.000	34.07±6.89	p:0.105
Your frequency of exercise (n:287)					
Everyday	23	93.30±11		33.00±7.98	
1-2 days per week	124	92.93±11.91	F=1.871	33.50±7.04	F= 0.182

3-4 days per week	77	95.97±12.96	p=0.13	32.79±7.39	p= 0.909
4-5 days per week	63	91.04±13.74		33.00±6.13	
Daily exercise time (n:287)					
30-45 min.	164	91.75±12.17	F=4.601	34.14±6.66	F=5.764
1 hour	90	94.38±11.40	p=0.01	32.56±7.03	p=0.004
2 hour	33	98.60±16.14		29.87±7.56	

Table 4. The Average Scores of Sub-scales of Exercise Benefit/ Barrier Scale of Nursing Students

Substances - Benefit	X	SS
Factor 1 Physical performance		
7. Exercise increases my muscle strength.	3.41	0.631
15.Exercising increases my physical fitness	3.23	0.737
17.Exercise increases my muscle mass	3.23	0.676
18.Exercising improves the functioning of my cardiovascular system	3.27	0.698
22.Exercise improves my endurance	3.29	0.664
23. Exercise increases my flexibility	3.25	0.71
31.My physical endurance increased with exercise	3.09	0.705
43.Exercise is the way to enhance my body view	3.2	0.72
Total Score Averages	26.01	3.934
Factor 2 Psychological appearance		
1. I like exercise.	3.28	0.684
2. Exercise reduces my feelings of stress and tension.	3.35	0.655
3. Exercise helps improve my mental health.	3.27	0.697
8. Personal success in exercising for me	3.23	0.726
10.Exercise makes me feel relaxed	3.11	0.712
20.Exercising gives me pleasure	3.1	0.736
Total Score Averages	19.37	3.128
Factor 3 Protecting Health		
5. I can prevent heart attacks by exercising.	3.21	0.69
13.Exercising protects me from high blood pressure	3.09	0.694
27.If I exercise, I live longer.	2.96	0.791
Total Score Averages	9.27	1.638
Factor 4 Life Development		
25.Improves my exercise mood.	2.74	0.846
26.Exercising helps me sleep better at night.	3.09	0.748
29.Exercise takes my fatigue	2.67	0.842
32.Exercising improves my self-concept	3.11	0.693
34. Exercise increases mental alertness.	3.18	0.679
35.Exercise allows me to continue my normal activities without fatigue	3.12	0.691

36.Exercise improves the quality of my workout.	3.11	0.716
41.Exercise corrects all my body functions	3.11	0.711
Total Score Averages	24.16	4.011
Factor 5 Social interaction		
11.I can be with my friends and loved ones while exercising	3.04	0.775
30.Exercising is a good way for me to meet new people.	2.95	0.779
38.Exercise is fun for me	2.98	0.754
39.Exercise allows me to be accepted by others	2.53	0.827
Total Score Averages	11.52	2.104
Substances - Barrier		
Factor 6 Physical strain		
6.Exercise exhausts me	2.8	0.743
19.I'm tired of exercise.	2.62	0.783
40.Exercise is hard work	2.5	0.845
Total Score Averages	7.93	1.805
Factor 7 Family Support		
21.My wife (or another important person) does not encourage exercising.	2.33	0.886
33.My family members don't encourage me to exercise.	2.41	0.861
Total Score Averages	4.75	1.502
Factor 8 Exercise possibilities		
9.Exercise places too far	2.58	0.853
12.Exercise is too boring for me	2.58	0.853
14.Exercise costs a lot of money	2.18	0.839
16.The program of the exercise facilities is not appropriate for me	2.48	0.821
28.I think people in exercise clothes look funny.	2.08	0.883
42.There is very little room to exercise	2.6	0.837
Total Score Averages	14.02	3.345
Factor 9 Spending time		
4.Exercise takes a lot of time	2.49	0.78
24.I spend more time on exercise than my family	2.08	0.905
37.Exercise takes more time than my family responsibilities	2.3	0.857
Total Score Averages	6.87	1.83

Discussion

It is important to realize exercise behaviour in the protection and maintenance of health and to transform it into healthy lifestyle behaviour (Maville and Huerta 2013). In this study, the total score average of Exercise Benefits/Barrier scale of the students was 124.05 ± 13.88 (Table 2). Considering that the minimum score to be taken from the scale was 43 and the maximum

score was 172, it was found that the students participating in the study found the exercise helpful. In addition to facilitating daily life, developing technology also increases the number of immobile individuals and negatively affects health. The perception of the individual's exercise behaviour plays an important role here. When the individual's perception of exercise benefit is superior to the perception of barrier,

the probability of realizing the exercise behaviour is increasing; when the perception of barriers is superior, the probability of realizing the exercising is reduced (Champion and Skinner 2008). In this study, the students' benefits subscale score average (90.41 ± 12.62) was found (Table 2). Considering that it has received a maximum of 116 points from the benefit sub-dimension, it can be said that the students' perceptions of exercise benefit are quite high in this study. When the literature studies are evaluated, the benefit subscale score; Ransdell et al. (2004) found that the mean score of exercise benefit 92.71 ± 8.30 as a result of his research on women; Young (2010) found a mean score of 79.99 ± 9.84 in the women of the college; Bunker et al. (2018) found the exercise benefit points in the first, second and last year of Faculty of Medicine students higher (94.56 ± 11.55 , 96.91 ± 10.71 , 94.85 ± 13.08) respectively. When the studies done in our country are examined, Ortabag et al. (2010) In the study performed with Gulhane Medical Academy nursing students in 2010, the mean score of exercise benefit scale was found to be 90.68 ± 12.98 ; Dogan and Ayaz (2015) found that the mean score of the exercise benefit scale of the nurses was 89.3 ± 11.6 ; Bakır and Hisar (2016) found high mean score of exercise benefit subscale scores of the nurses (57.87 ± 11.781); Ozveren and Dogan Yılmaz (2018) found that the mean score of the benefit sub-scale of exercise benefit/barrier perception scale of the nursing students ($90,35 \pm 12,19$) was higher and Unver and Aylaz (2017) evaluated the mean score of the benefit sub-scale of exercise benefit/barrier perception scale in pregnant women found 78.98 ± 10.52 . In the studies performed with different sampling groups, the perception of exercise benefit was high. The fact that nursing students have a high perception of exercise benefit is thought to be due to their understanding of the importance of exercise in health protection and development during their education as future health professionals. The perception of the barrier is a perception related to the factors that prevent or make it difficult for a health-related protective behaviour to be performed. In this study, when the barriers perception of the students is examined; the mean score of barriers perception was found to be 33.64 ± 6.95 high (Table 2). Contrary to our findings; Bunker et al. (2018) the medical

students in the first second and last year of the exercise barrier scores were found to be low (28.30 ± 5.13 , 27.21 ± 4.75 , 29.61 ± 5.93), respectively and they reported that the reason of the high level of exercise barrier scores of the students in the final year might be due to the difficulty of working conditions in the hospital. Ozveren and Dogan Yılmaz (2018) found that nursing students were higher than the average of barrier subscale score (3.47 ± 5.96) in their study on healthy lifestyle behaviours and exercise behaviours. In this study, it was found that the students who do not have the ability to exercise and whose daily exercise duration is 30-45 min were significantly higher had exercise barrier perceptions ($p < 0.05$) (Table 3). In this study; it was determined that the exercise benefit perceptions students who have the opportunity to exercise and exercise regularly with students who exercise for 2 hours a day were significantly higher ($p < 0.05$) (Table 3). In the literature, it is seen that the exercise benefit perceptions of the students who exercise regularly and engage in a sport branch are high (Ozveren and Dogan Yılmaz 2018). Yalçinkaya et al. (2007) in his research with health care workers, health workers who exercise 3-4 days a week and more are found to have high exercise scores. In the Dogan and Ayaz (2015) studies, it was determined that the exercise benefit perceptions of the nurses who had the opportunity to exercise, exercise regularly and exercise each day were higher ($p < 0.05$). It was determined that exercise barrier perception was higher in nurses who were unable to exercise, who had a disease that prevented exercise, who did not exercise regularly and who were able to exercise 1-2 days a week, who were overweight and obese were higher ($p < 0.05$). The most powerful benefits of exercise perceived by students are related to physical performance and psychological appearance. In the study, the highest value obtained from the items in the exercise benefit sub-group of nursing students was determined as the "physical performance" factor (26.01 ± 3.93) (Table 5). While following the physical performance, psychological appearance and life development, health protects, and benefits of social interaction were significantly lower. Lovell et al. (2010), in her study of female university students, argued that physical performance is the highest perceived benefit from exercise, and that media channels may arise

from a constant emphasis on the importance of these qualities in women over a broad period. Due to the fact that 71% of our study is female, this factor may be similar to the high level. During the first five of the items that students perceive as a benefit to exercise; "Exercise increases muscle strength" (3.41 ± 0.63); "Exercise reduces stress and tension" (3.35 ± 0.65); "Exercise increases strength" (3.29 ± 0.66); "I like exercise" (3.28 ± 0.68); "Exercise provides the development of mental health" (3.97 ± 0.69) has statements (Table 5). The benefit of exercising according to students' psychological point of view shows that it is fun to participate in exercise, decreases stress levels and improves mental well-being. As a result of the study conducted by Ortabag et al. (2010) with the students of nursing school, the students stated that they benefited from the exercise; "exercising increases the operability of the cardiovascular system" (3.42 ± 0.58); "exercise increases muscle strength" (3.41 ± 0.58); "exercising increased my physical fitness" (3.42 ± 0.59). Fashion, cosmetic and medical science society; it has convinced individuals that a certain form is beautiful, and it has begun to impose that individuals outside this form can be excluded by society (Ahıska and Yenil 2006). Thus, the idea of how they appear to others in the younger generation has gained importance (Akkuş et. al. 2019, Trekels and Eggermont 2017). In our study, the reason why the students stated that they benefited from exercise, gathering on physical performance, psychological appearance and life development can be explained by the fact that all of the participants are young and therefore give importance to physical attractiveness, they want to be more durable, careful and strong with body functions. In our study, the highest value (14.02 ± 3.34) obtained from the items in the exercise barrier sub-group was determined as "the exercise possibilities factor" (Table 4). As parallel with our findings; studies have been carried out indicating that students spend a significant part of the day at school; they cannot devote time to exercise because they are intense, high cost of gyms and lack of sports areas in campuses and dormitories (Ozveren et. al. 2013) in addition, some studies have reported that the biggest barrier to exercise is the physical strain factor (Ortabag et. al 2010, Nolan et. al. 2011, Thomson et. al. 2016, Bunker et. al. 2018). The reasons that prevent students from exercising are thought to be caused by having limited exercise

opportunities, lack of financial income, living in a different environment outside the home environment and not knowing the environmental possibilities.

Conclusion and Recommendations

It was found that about half of the students who participated in the research were exercising. It was determined that the exercise benefit perceptions of the students who with the opportunity to exercise, and regular exercise were significantly higher than those who exercised 2 hours. Students' exercise benefit/barrier perception scale, an average of exercise benefit subscale score (124.05 ± 13.88) was found to be high, an average of exercise barrier subscale score (33.64 ± 6.95) was found to be low. As a result of this research, it is recommended to add exercise programs within the scope of Health Protection and Development course and also to provide physical activity environments that students can use easily in order to gain the habit of regular exercise which is one of the healthy lifestyle behaviours for health improvement.

Limitations of the Research

The results of the study are limited to the notifications of these students as it covers the nursing students of a School of Health.

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