

## RELATIONSHIP BETWEEN SELF-EFFICACY AND DEATH ANXIETY OF PERSONS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

### KRONİK OBSTRÜKTİF AKCİĞER HASTALIĞI OLAN BİREYLERİN ÖZ ETKİLİLİK DÜZEYLERİ İLE ÖLÜM KAYGISI ARASINDAKİ İLİŞKİ

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#### Özet

**Amaç:** Bu çalışma, kronik obstrüktif akciğer hastalığı olan bireylerin öz yeterlilik ve ölüm kaygısı düzeylerini belirlemek amacıyla tanımlayıcı olarak yapılmıştır.

**Yöntem:** Bu araştırma, Göğüs Hastalıkları Servisinde kronik obstrüktif akciğer hastalığı tanısıyla yatan ve Göğüs Hastalıkları Polikliniğine ayaktan başvuran 170 hasta ile tamamlandı. Kurumdan ve etik kuruldan izinler alındı. Araştırmanın verileri hasta bilgi formu, Kronik Obstrüktif Akciğer Hastalığı Öz Yeterlilik Ölçeği ve Ölüm Kaygısı Ölçeği kullanılarak yüz yüze görüşme tekniği ile toplanmıştır. Verilerin değerlendirilmesinde One Way Anova, t testi ve Pearson korelasyon analizleri kullanılmıştır.

**Bulgular:** Araştırmaya katılan kronik obstrüktif akciğer hastalığı olan hastaların öz-yeterlilik ölçeği puanı ortalaması  $2,16\pm 0,81$  olarak bulunmuştur. Bireylerin ölüm kaygısı ölçeği puan ortalaması  $7,75\pm 3,03$  idi. Hastalar ciddi düzeyde (%27) ölüm kaygısı yaşıyor. Kronik obstrüktif akciğer hastalığı olan bireylerin öz-yeterlilik puanları ile ölüm kaygısı puanları arasında istatistiksel olarak anlamlı bir ilişki bulunamadı.

**Sonuç:** Son olarak kronik obstrüktif akciğer hastalığı olan hastaların öz yeterlilik düzeylerinin düşük, ölüm kaygı düzeylerinin ise orta düzeyde olduğu ve puan ortalamaları arasında istatistiksel olarak anlamlı bir ilişkinin olmadığı belirlendi. Kronik obstrüktif akciğer hastalığı olan hastaların öz yeterlilik ve ölüm kaygısı düzeylerinin değerlendirilmesi ve yönetime yönelik planlı eğitim verilmesi önerilmektedir.

**Anahtar Kelimeler:** Ölüm kaygısı, Öz yeterlilik, Kronik obstrüktif akciğer hastalığı

#### Abstract

**Objective:** This study was conducted as a descriptive study to determine the relationship between levels of self-efficacy and death anxiety of individuals with chronic obstructive pulmonary disease.

**Material and Methods:** The study was completed with 170 patients who were hospitalized in chest diseases clinic with chronic obstructive pulmonary disease diagnosis and outpatients who visited to the chest diseases polyclinic. Permissions from the institution and the ethics committee were obtained. Data of the study was collected by face-to-face interview technique using patient information form, the Chronic Obstructive Pulmonary Disease Self-Efficacy Scale and The Death Anxiety Scale. One Way Anova, t test, and Pearson Correlation analyzes were used in the evaluation of the data.

**Results:** The mean self-efficacy scale score of the patients with chronic obstructive pulmonary disease in the study was found to be  $2.16\pm 0.81$ . The mean death anxiety scale score of the individuals was  $7.75\pm 3.03$ . Patients is experiencing severe levels (27%) of death anxiety. There was no statistically significant relationship between self-efficacy and death anxiety scores of individuals with chronic obstructive pulmonary disease.

**Conclusions:** Finally, it was determined that the self-efficacy levels of chronic obstructive pulmonary disease patients were low and their death anxiety levels were moderate and there was no statistically significant relationship between the mean scores. It is suggested that the levels of self efficacy and death anxiety of chronic obstructive pulmonary disease patients be evaluated and planned training should be provided for the management.

**Keywords:** Death anxiety, Self-efficacy, Chronic obstructive pulmonary disease

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Geliş tarihi/ Date of receipt: 27.10.2023

Kabul tarihi / Date of acceptance: 22.04.2024

## INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is a disease that causes significant morbidity and mortality worldwide, causing 3.23 million deaths in 2019, accounting for 5.0% of all deaths. The prevalence of COPD in developing countries is predicted to increase over the next 30 years, and by 20360, deaths from COPD and related causes will exceed 4.5 million per year (1). According to the Turkish Statistical Institute reports chronic respiratory diseases are the third leading cause of death within six leading illnesses (2).

People with COPD have to cope with common symptoms such as cough, expectoration, dyspnea, fatigue and insomnia. In addition, as in all chronic diseases, in addition to these symptoms, in COPD patients may have health check-ups, use of drugs and devices, and frequent hospitalizations. These conditions affect the daily life of COPD individuals physically, emotionally, cognitively, socially and economically, reducing self-efficacy level and increasing death anxiety (3).

It was emphasized by psychologist Albert Bandura that self-efficacy plays an important role between learning and transforming what is learned into behavior. In this respect, self-efficacy perception has an important role in determining the activities that the individual will do or avoid. The high level of perceived self-efficacy in individuals leads to a decrease in perceived barriers to health promotion. Thus, an individual can initiate and complete a positive action or behavior (4,5). As the level of self-efficacy increases, the efforts of COPD individuals to cope with the disease-related symptoms and treatment process become stronger and more stable (3,6,7). There are studies showing that the higher the self-efficacy level in these patients, the higher the overall functionality, quality of life, and five-year survival rate (8,9). In some studies, it was stated that patients with low self-efficacy failed to continue the treatment process even if they completed the respiratory rehabilitation program, their quality of life was low, and

depression and death anxiety levels were high (3,10).

People's reactions to death are quite different. Death anxiety is a feeling that starts at birth and continues for life and develops after the awareness that one may become nothing in the aftermath of death (11). Bronchodilators, sympathomimetic, decongestants and oxygen therapy used in the treatment of COPD may also cause depression and anxiety. In addition, the inability of individuals with COPD to develop self-efficacy increases death anxiety by causing individuals to experience progressive loss of physical strength due to chronic dyspnoea and hypoxia, deterioration of interpersonal relationships and various problems (11-15). Consequently, individuals with COPD who are constantly confronted with illness and disease-related symptoms, complications and attacks may experience more severe death anxiety in addition to this condition (11,13).

The perception of self-efficacy, which has an important effect on determining how an individual feels, thinks and behaves during the process of managing the symptoms and complications of the disease, is also an important determinant in initiating, sustaining positive health behaviours and reducing the concerns about life (5). In the literature, nursing studies evaluating self-efficacy levels and death anxiety of individuals with COPD are limited (11-13). Although death anxiety causes serious problems and decreases the quality of life, the experience of death anxiety in chronic patients has been relatively less studied. It is thought that this study will reveal the levels of self-efficacy and death anxiety of individuals with COPD and may raise awareness among health personnel. In addition, determination of death anxiety scores of individuals with COPD and the creation of individual nursing care plans will contribute to the patients' benefit from the nursing care service they receive and increase the satisfaction in terms of nursing. Therefore, our study was conducted to determine the factors affecting the levels of self-efficacy and death anxiety of

COPD individuals and their relationship with each other.

## METHODS

### Study design

This study was performed in a descriptive cross-sectional study design to determine the relationship between self-efficacy and death anxiety in patients with COPD.

### Sampling and setting

All the COPD patients hospitalised in the respiratory outpatient clinics of a state hospital a years due to an underlying chronic disease comprised the population of the study. In the light of the results obtained from the study, it was calculated that the power of our study was 90% at 95% confidence level for the effect size obtained from results from 170 people ( $r = 0.25$ ). The study sample included 170 COPD individuals over the 18 years of age, conscious, having had a diagnosed by COPD (17,18) at least one year, having no communication problems and agreeing to participate in the study after being informed about the study.

### Measures

It was gathered using personal information form, The COPD Self Efficacy Scale (CSES) ve The Death Anxiety Scale (DAS). Data was collected by the researchers in 20-25 minutes by face-to-face interview technique.

### Patient information form

The literature was searched by the Researcher (6,7,11-15) and it included questions such as age, gender, educational status, marital status, duration and degree of the disease (Stage I- Mild  $FEV1 \geq 80\%$ ; Stage II- Moderate  $FEV1 \geq 50\% - < 80\%$ ; Stage III- Severe  $FEV1 \geq 30\% - < 50\%$ ; Stage IV- Grave  $FEV1 < 30\%$ , number of annual attacks, home oxygen and nebulization treatment (15).

### COPD Self Efficacy Scale

It was developed by Wigal et al. (1991) and validated by Kara & Mirci (2002) in our country, consists of 34 items and 5 subscales to determine the degree of confidence of COPD patients in managing or avoiding breathing difficulties during some activities. It consists of factor structure of five subscales; negative

impact, emotional state, physical effort, air / environmental impact and behavioral risk factors. The items that form the scale were scored Likert Type between 1-5. Incidents where increased scores were seen are interpreted as increased confidence in managing or avoiding respiratory distress. Wigal et al. determined the scale as Cronbach's alpha 0.95 (6,16 ). In this study, Cronbach's alpha was found 0.85.

### Death Anxiety Scale

It was developed by Templer in (1970) and the validity and reliability study in our country was conducted by Akça & Köse in (2008). It is a 15-item, true-false scale that measures the individual's anxiety and fears about his own death and death risk. The highest score obtained from the scale is 15. In this range, it is evaluated that the death anxiety of the people who have a total score of 7, which is the average score, and above is also high. In the score grouping; death anxiety levels are as follows: 0–4 points ‘mild’, 5–9 points ‘moderate’, 10–14 points ‘severe’, 15 points ‘panic level’. Death Anxiety Scale, Turkish was found as alpha 0.75 Cronbach's (17,18). In this study, Cronbach's alpha 0.76 was found.

### Data analyses

The data were analysed using the SPSS (version 15.0 SPSS Inc., Chicago, IL, USA). Analysis of the sociodemographic and diseases characteristics of individuals, numbers and percentages. For comparison of two groups t test was used in independent groups; for comparison of more than two groups One Way Anova, Pearson correlation and analyzes were used. For all the analyses,  $p < 0.05$  was considered significant.

## RESULTS

It was determined that 54.2% of the individuals were in the 60-74 age group, the average age  $66.50 \pm 10.05$  years, 77.6% male, 80.6% married, 7.1% an education level of high school or above, and 55.8% retire. It was found that 40.9% of the individuals had low income levels, 8.8% did not have social security and lived alone. It was determined that only 11.2% of individuals smoked, and the average number of cigarettes of smokers during the day was

19.84±8.97. It was determined that the average disease year of the individuals was 7.86±6.69 years and 28.8% of them had very severe COPD. It was also determined that 30% of the individuals had more than 4 attacks per year, 47.5% bronchodilators, 45.9% oxygen, and 45.3% used nebula at home (Table 2).

The analysis of subscales related to the views and probable causes individuals with COPD The mean of CSES 2.16±0.81 were low, subscale respectively; emotional arousal 2.43±1.86, negative affect 2.27±0.79, behavioural risk factors 2.06±0.80, weather/environment impact 1.97±0.69, and physical exertion 1.75±0.70. Individuals with COPD the mean of DAS 7.75±3.03. Low death anxiety rating 29 patient (%17.1), medium death anxiety rating 95 patient (%55.9), and severe death anxiety rating 46 patient (%27.0) have found. Individuals with COPD is experiencing serious levels (27%) of death anxiety (Table 1).

**Table 1.** Self-Efficacy Scale ve Death Anxiety Scale of COPD patients (n=170)

	X± SD	Min-Max	Total score
<b>COPD self-efficacy scale score</b>	2.16±0.81	(1-5)	5
<b>Death anxiety scale</b>	7.75±3.03	(1-14)	15
-Low (0-4)	29	17.1	
-Medium (5-9)	95	55.9	
-Severe (10-14)	46	27.0	
-Panic level (15≥)	-	-	

Negative effect, physical effort, air and environmental impact, behavioral risk factors and CSES total score averages of married individuals were higher than those of single individuals (p<0.05). Negative impact, physical effort, air and environmental impact and total mean scores of individuals with high school and higher education levels were found to be higher than other education level groups (p<0.05). The average level of physical effort was higher in individuals with moderate income (p<0.05). Self-efficacy levels of COPD individuals with this socio-demographic characteristics were found to be high. Women, uneducated and

middle income COPD individuals had higher DAS scores, ie death anxiety, than other groups (p<0.05). Although death anxiety scores were higher in elderly and single individuals, there was no statistically significant difference between DAS mean scores and age and marital status (p>0.05) (Table 2).

**Table 2.** Comparison of mean scores of CSES ve DAS with respect to sociodemographic charecterist (n=170).

Sociodemographic Characteristics	N (%)	Total Score of CSES	Total Score of DAS
		X± SD	X± SD
<b>Age groups</b>			
40-59	39(22.9)	2.37±0.79	7.66±3.22
60-74	92(54.2)	2.13±0.68	7.71±2.88
75-87	39(22.9)	2.02±0.65	7.92±3.23
<i>p</i>		0.149	0.921
<b>Gender</b>			
Female	38(22.4)	1.81±0.67	9.10±2.91
Male	132(77.6)	2.26±0.82	7.36±2.96
<i>p</i>		0.207	<b>0.042</b>
<b>Marital status</b>			
Married	137(80.6)	2.22±0.85	7.64±2.94
Single	33(19.4)	1.93±0.58	8.21±3.37
<i>p</i>		<b>0.006</b>	0.272
<b>Education level</b>			
Illiterate	66(38.8)	2.02±0.90	8.45±3.28
Primary school	92(54.1)	2.21±0.75	7.28±2.26
Middle school and higher	12(7.1)	2.60±0.67	7.50±3.06
<i>p</i>		<b>0.048</b>	<b>0.043</b>
<b>Income status</b>			
Low	69(40.6)	1.77±0.63	7.49±3.39
Middle	101(59.4)	2.43±0.82	7.93±2.75
<i>p</i>		0.154	<b>0.011</b>
<b>Year of COPD</b>			
1-5 year	79(46.4)	2.37±0.86	7.43±3.25
6-10 year	54(31.8)	2.11±0.74	8.27±2.93

11 year and above	37(21.8)	1.78±0.65	7.67±2.62
<i>p</i>		<b>0.001</b>	0.283
<b>The degree of COPD</b>			
Middle	75(44.1)	2.29±0.77	7.34±2.92
Heavy	46(27.1)	2.19±1.00	8.30±3.23
Very heavy	49(28.8)	1.94±0.63	7.85±2.97
<i>p</i>		0.055	0.233
<b>Number of yearly attacks</b>			
No	11(6.5)	2.55±0.74	8.09±2.58
1-3 times	108(63.5)	2.28±0.75	7.75±3.03
4 and above	51(30.0)	1.84±0.75	7.68±3.16
<i>P</i>		<b>0.001</b>	0.923
<b>Education about COPD</b>			
Yes	44(25.9)	2.28±0.69	7.13±3.46
No	126(74.1)	1.82±1.03	7.96±2.85
<i>p</i>		<b>0.048</b>	<b>0.040</b>

*p*<0.05 value statistically significant.

When the COPD disease year and CSES and subscale scores of the individuals were examined, it was found that the difference between the negative effect, physical effort, emotional state, weather and environmental impact, behavioral risk factors, and the mean total score was statistically significant and self-efficacy of individuals with COPD for 11 years and over was low ( $p<0.05$ ). The negative impact and physical effort self-efficacy of individuals classified as severe COPD were lower than the other groups and this difference was statistically significant ( $p<0.05$ ). Self-efficacy regarding negative impact, physical effort, air and environmental impact, behavioral risk factors was lower in individuals having COPD attacks four times or more a year ( $p<0.05$ ). When the education level about COPD and CSES and emotional state, physical effort and behavioral risk factor sub-dimension scores were examined, this dimension self-efficacy was lower in individuals who did not receive education

( $p<0.05$ ). Emotional status and physical effort self-efficacy were lower in COPD patients with a second chronic disease. When we look at the death anxiety of COPD individuals according to their characteristics of the disease; the mean death anxiety scores of the patients with secondary chronic disease and those who did not receive self-care education in COPD were higher than the other groups and this difference was statistically significant ( $p<0.05$ ) (Table 2).

As shown in Table 3, there was not significant relationship between self-efficacy and all sub-dimensions of self-efficacy and experiencing death anxiety ( $p>0.05$ ). It was found that there was a low negative correlation between COPD Self-Efficacy Scale scores of the individuals and age ( $r = -0.22$ ,  $p<0.01$ ), year of COPD ( $r = -0.32$ ,  $p<0.001$ ), and annual number of attack COPD ( $r = -0.31$ ,  $p<0.01$ ), and statistically significant relationship between level of FEV1 ( $r=0.18$ ,  $p<0.05$ ) and COPD Self-Efficacy Scale scores of the individuals. In addition, there was no correlation between death anxiety scale and age, year of disease, annual number of COPD attack, level of FEV1 ( $p>0.05$ ) (Table 3).

**Table 3.** Corelation of mean scores of Self-Efficacy Scale ve Death Anxiety Scale with demographic characteristics (n=170).

Characteristics	CSES		DAS	
	$r_p$	<i>p</i>	$r_p$	<i>p</i>
CSES	-	-	-	0.357
Age	-0.22*	<b>0.003</b>	0.02	0.793
Year of COPD	-	<b>0.000</b>	0.00	0.940
Number of yearly attacks	-	<b>0.000</b>	-	0.841
FEV1 level	0.31**	<b>0.014</b>	0.01	1.000

$r_p$ =Pearson korelasyon

\* $p<0.05$

\*\* $p<0.001$

## DISCUSSION

Self-efficacy is considered to be one of the most important determinants of the adoption and maintenance of behavioral changes in individuals with COPD (3,6,8,9). In this study, which was conducted to evaluate the self-

efficacy level and death anxiety of COPD patients, self-efficacy levels and scale sub-dimensions of negative impact, emotional state, physical effort, weather and environmental impact, and behavioral risk factors scores were low. Similar studies conducted in our country revealed low self-efficacy levels of individuals with COPD (6,9). In the study of Ceyhan and Ünsal (2018) comparing self-efficacy levels of patients with common chronic diseases, self-efficacy levels of individuals with COPD were reported to be the lowest chronic disease group (19). In studies conducted abroad, self-efficacy levels of individuals with COPD were reported to be moderate (3,8). This difference in our country is thought to be due to the low educational level of the patients in our study (illiterate 38.8%), the lack of self-care education to individuals with COPD (74.1%), and the inadequate pulmonary rehabilitation services within the health system and the differences in culture and belief of the countries. In a study, it was pointed out that individuals with COPD avoid activities that require physical effort due to the severity of dyspnea, and as a result that intolerance to dyspnea severity increases and becomes a vicious circle (20,21). In our study, physical effort levels of the patients were found to be lower than the other sub-dimensions. This may be because one-third of the patients have severe COPD and nearly half of them need to use oxygen and nebula at home.

In this study it has been found that age, year of COPD, annual number of attack COPD and DAS are the negative determinants of self efficacy; while self-care training and level of FEV1 are positive determinants (significant predictors for CSES). The increase in age in COPD patients leads to an increase in the year of the disease, a decrease in the level of education, a secondary chronic disease, and an increase in the number of attacks due to the disease, which causes FEV1 to decrease, resulting in dyspnea and being unable to do many activities which require effort. Similar results were found in studies on self-efficacy in COPD (9,22). In this process, self-efficacy level decreases by decreasing the confidence and belief in

performing daily activities and maintaining the treatment process. Since the studies show that there is a positive relationship between self-efficacy and health behavior development and maintenance in chronic diseases and COPD, self-efficacy level is critical in assessing the success of COPD management. In the studies conducted in the literature, it was stated that the medical treatment and symptoms management strategies of COPD individuals with high self-efficacy were better and the physical and psychosocial burden of the disease on the individual decreased (3,6,8,9). Self-efficacy levels of married and well-off individuals may be positively affected due to social and economic support. In this study, self-care education, which is an important determinant in increasing the level of self-efficacy, can provide patients with daily living activities, drug use, taking responsibility and decision-making on symptoms and complications, self-monitoring and psychological and social support (9,20).

Modern societies have lost their perspectives on the naturalness of death after the first half of the 20th century. As a result, people and patients became unable to cope with the inevitability of death and began to experience anxiety (22). Dyspnea, hypoxia, hypercapnia, hyperventilation and respiratory insufficiency in chronic respiratory diseases can directly affect brain function and cause anxiety and fear. In the literature, it was emphasized that anxiety caused by a vicious circle would cause hyperventilation and increase dyspnea in the patient and create more anxiety and fear (12). In this study, it was found that death anxiety of COPD subjects was moderate and 27% experienced panic death anxiety, and secondary chronic disease and low FEV1 level negatively affected it. Similarly, In studies of it were found that individuals with COPD had moderate death anxiety (11). Our findings were similar to the literature. In one study, it was reported that patients had death anxieties in the form of drowning fear, death awareness, fear of dying and separation anxiety (23). In this study in which we determined death anxiety levels in COPD patients, it was found that death anxiety levels were higher in women

than men. In other studies, it has been shown that death anxiety of women is higher than males with age (11,24). In our study, it was thought that the level of death anxiety was higher in women than men, because men were trying to show that they were not afraid of anything in order to make themselves more courageous, and it was thought that women could express their feelings more easily than men. However, since this situation may be affected by culture and belief, it is thought that the differences between men and women may vary depending on the culture and belief in Islam.

A study also shows that individuals with COPD experience both anxiety and death anxiety (23). In this study, it was found that death anxiety was low in those receiving self-care education related to COPD. In the literature, it is stated that DAS scores decrease as the knowledge level of individuals with COPD increases. It is stated that having information to control the symptoms of the patients is an important factor in coping with the symptoms, stress and death anxiety and it is among the factors that reduce death anxiety (11). Studies have suggested that the presence of additional chronic diseases and physical problems may increase death anxiety (22). In our study, death anxiety scores of individuals with additional chronic diseases were found to be significantly higher. The fact that individuals with more than one chronic disease have more complex symptoms and insufficient coping with them may increase anxiety and death anxiety (24).

The perception of self-efficacy, which has an important effect on determining how the individual feels, thinks and behaves during the process of managing the symptoms and complications of chronic disease, is an important determinant in the initiation and maintenance of positive health behaviors and in reducing the anxiety about life and death. Although low self-efficacy levels of individuals with COPD were thought to increase death anxiety, it was not significant although there was a negative relationship between self-efficacy level and death anxiety level of individuals (11,22-25). It

is thought that the majority of individuals with COPD are elderly and may experience death as salvation, as they have stated, with increasing symptoms. In addition, individuals' belief in their behavior to manage symptoms does not affect the individual's thoughts about death, this situation is thought to vary entirely in line with the individual's culture and beliefs.

## CONCLUSION

In this study, it was found that individuals with COPD had low self-efficacy levels. One third of COPD patients had high levels of death anxiety. There was not significant relationship between self-efficacy and all sub-dimensions of self-efficacy and experiencing death anxiety. According to these results, nurses; self-care education should be done, health controls and drug usage should be monitored in order to increase self-efficacy and decrease death anxiety level of individuals with COPD and pulmonary rehabilitation services should be planned effectively for individual and family.

Death anxiety of patients should be evaluated in chest clinics and home care and psychological support should be provided to the needing individuals. This study should be conducted in larger samples from different cultural and belief groups. Future research should also include families as well as individuals with COPD. Research can focus on designing and testing specific nursing interventions to increase self-efficacy and reduce death anxiety in individuals with COPD.

## Strengths and Limitations

All patients were selected from patients in a hospital, a secondary health care facility, and therefore could not be generalized to the whole population. Dyspnea levels of the patients were not evaluated. The one-dimensional scale of death anxiety that we used may also affect the results. The study was conducted in one geographical region the results may not represent COPD patients from other regions. This study is important that evaluates self-efficacy and death anxiety together in patients with COPD.

## Ethical Aspects of Research

In order to conduct the research in institutions, A University Faculty of Medicine Clinical Research Ethics Committee was applied and the ethics committee decision (2015/110) was taken to make the research possible. Informed consent was obtained from patients. The study complies with the ethical principles of the Helsinki Declaration and protects the privacy of individuals' information.

## Conflict of interest

The authors declare that they have no conflict of interest.

## Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors

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