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LIFE ADJUSTMENT ANALYSES OF PEOPLE WHO HAD CORONAVIRUS DISEASE. A CROSS-SECTIONAL STUDY
KORONA VİRÜS HASTALIĞI GEÇİRMİŞ İNSANLARIN YAŞAMA UYUM ANALİZLERİ: KESİTSEL BİR ÇALIŞMA

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ABSTRACT

We aimed to determine the life adjustment process of people who have had corona virus and the factors affecting this process, to investigate the long-term effects related to this disease and report hem for the first time. In this cross-sectional study conducted between March and December 2021, 202 participants who previously had corona virus infection, identified by reverse transcription polymerase chain reaction test, were enrolled. The data was collected online using the Hacettepe Personality Inventory and evaluated using descriptive statistics, survival analyses and Kaplan–Meier survival analyses in SPSS software. According to the Hacettepe personality inventory, the mean total adjustment score of the participants was 91.97±16.9, the mean social adjustment score was 45.47±9.7 and the mean personal adjustment score was 46.49±8.7. According to the hazard function graphs, it was calculated that the mean general adjustment month of the participants was 13.59±0.64, the mean social adjustment month was 13.89±0.65 and the mean personal adjustment month was 11.83±0.52. It has been observed that the corona virus disease has a negative impact on life and social and personal adjustment, while the mean time for people to adjust to life is 1 year.

Keywords: Corona virus disease, life adjustment, survival analysis

ÖZ

Bu araştırma ile korona virüs hastalığı geçirmiş insanların hastalıktan sonraki zaman içinde kişisel ve sosyal boyutlarıyla yaşama uyum sürecini ve etkileyen faktörlerin belirlenmesi, hastalıkla ilişkili uzun vadeli sonuçların araştırılması ve literatüre ilk bilgilerinin verilmesi amaçlanmaktadır. Bu araştırma 1 Mart-31 Aralık 2021 tarihlerini kapsayan kesitsel bir çalışmadır. Araştırmanın örneklemini daha önce RT-PCR testi ile tanımlanan koronavirüs enfeksiyonu geçirmiş olan 202 kişi oluşturmuştur. Veriler, Hacettepe Kişilik Envanteri ile online olarak toplanmıştır. Verilerin değerlendirmesi SPSS programında tanımlayıcı istatistik, yaşam sürdürme analizlerinde Kaplan-Meier sağ kalım analizleri ile yapılmıştır. Katılımcıların Hacettepe Kişilik Envanterine Göre toplam uyum puan ortalaması 91.97±16.9; sosyal uyum puanı ortalaması 45.47±9.7 ve kişisel uyum puan ortalaması 46.49±8.7 olduğu saptanmıştır. Hazard fonksiyon grafiklerine göre de katılımcıların genel uyum ortalama ayının 13.59±0.64 olduğu, sosyal uyum ortalama ayının 13.89±0.65 olduğu ve kişisel uyum ortalama ayının ise 11.83±0.52 olduğu hesaplanmıştır. Korana virus hastalığının kişisel ve sosyal olarak genel yaşam uyuma olumsuz etkisi olduğu ve insanların yaşama uyum yapma süresinin ortalama 1 yıl olduğu görülmüştür.

Anahtar kelimeler: Koronavirüs hastalığı, yaşama uyum, yaşam sürdürme analizi

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INTRODUCTION

Corona virus disease has continued to impact the world since 2020on a massive scale, posing a major global risk to public health and disrupting lives on an unprecedented scale.[1,2] During the last 2 years when we have been living with this disease, our lives have been altered in every direction leading to a negative impact on the physical, social and psychological functioning of individuals and societies and have important economic consequences. Therefore, it is important for an individual and society to know how the emotional and psychosocial effects of the uncertainty and crisis that occurred during this disease period are managed and how to adjust to them because the healthy survival of an individual depends on his/her ability to adjust.[1-6] The concept of adjustment is the ability of an individual to establish and maintain a balanced relationship between his/her own self and the environment in which he/she lives by using his/her own characteristics. Adjustment, which requires an individual to respond to certain changes in the field of his/her life, is a cyclical process and the events and personality traits directly affect the adjustment of individual. Adjustment in an individual's life is handled in two parts: personal and social adjustment. Personal adjustment is the harmony that one wants to achieve with the whole of one's spiritual life. Social adjustment, on the contrary, is a person's success in adjustment to other individuals and making himself/herself accepted in a unique way by the communities which he/she interacts with.[7,8]

Most of the research literatures confirm that the corona virus disease has a negative impact on healthy and active lifestyles and consequently leads to a decline in mental health and quality of life.[3-6,9-12] However, to the best of our knowledge, there are no studies on how the effects of psychological, emotional and physiological situations experienced by the patient after recovering from the corona virus disease affected the person's adjustment to personal and social life. Hence, the results of our study are crucial. This study aimed to determine the life adjustment process of people after they had corona virus disease, to determine the factors affecting this process, to investigate the long-term effects associated with this disease and to report them for the first time. Further, this study aims to provide a social example of life adjustment after this disease, which is a common issue worldwide, and encourage similar research in different cultures and environments.

MATERIALS AND METHODS

Study Design and Participants

This research is a cross-sectional study covering the period between March and December 2021. The participants of the study consisted of individuals who applied to the Siirt Public Health Directorate between March and December and who had corona virus disease. According to the data of the Provincial Directorate of Health, the average number of cases in these months was calculated as 250. A total of 356 people were reached out between these dates who agreed to participate in the research. However, 81 of the individuals answered the inventory incompletely and 73 individuals did not fill out a valid inventory, so only 202 individuals were included in the study. The participation rate was calculated as 57%. Post-hoc power analysis conducted after the research revealed that the power of the study (1-β) was 0.89 and the sample size was sufficient. The inclusion criteria are as follows: age ≥18 years, having a history of corona virus infection as defined by a positive reverse transcription polymerase chain reaction test according to World Health Organization criteria (2021a), a corona virus infection at least 1 month ago and non-presence of psychiatric or any highly disabling pathology. The exclusion criteria are those younger than 18 years of age, those with a psychiatric diagnosis, and those who have not been diagnosed with Covid 19 or have recently had Covid 19.

Procedures

Before beginning the research, study permission and ethical approval were obtained by the Ministry of Health's Scientific Research Platform (2021-01-25T13_10_19) and Harran University (Decision no: 15.02.2021/04), respectively. Also, administrative permissions were obtained from the Şanlıurfa Provincial Health Directorate. The patients and their relatives were contacted after reviewing their records, and the interested participants were briefed about the study and provided with a link to the online questionnaire. Data were collected from the participants who provided consent before accessing the questionnaire.

Hacettepe Personality Inventory (HPI) used in this study consists of two main sections, 'Personal' and 'Social Adjustment', with eight subscales and a total of 168 items, measuring personal and social adjustment levels of individuals. Eight subscales of HPI consisted of four for 'personal adjustment' (Self-Actualization, Emotional Stability, Neurotic Tendencies, Psychotic Symptoms) and four for 'social adjustment' (Family Relations, Social Relations, Social Norms, Antisocial Tendencies). The sum of 'personal adjustment' and 'social adjustment' scores constitutes the 'general adjustment' score. A decrease in the scores obtained from HPI means a decrease in the adjustment scores. In our study, the internal consistency coefficient of the scale was found to be 0.86 and so the scale is valid and reliable.[13] In this study, Cronbach's Alpha value was calculated as 0.91.

Statistical Analysis

The data obtained were recorded and evaluated in IBM SPSS Statistics v.22.0 (IBM Corp.; Armonk, NY, USA) package program. In statistical analyses, mean ± standard deviation, minimum maximum values were used for continuous variables; number and percentage were used for nominal variables.

In the survival analysis, time was defined as the period from the beginning of the diagnosis to the date of the study (minimum 1 month and maximum 18 months). Further the time was compared through general adjustment (GA) month, personal adjustment (PA) month and social adjustment (SA) month. The Kaplan–Meier survival analysis was used to evaluate the data individually, and comparisons were made by log-rank test. While evaluating the results in the study, at a 95% confidence interval, $p<0.05$ was considered statistically significant.

RESULTS

Out of the 202 individuals who participated in the study, 54.0% were female and 85.1% had a university or higher education level. The mean age of the participants

was 26.87±12.36 and 69.8% of them were under 25 years of age. It was observed that 59.9% of the participants had corona virus disease more than 5 months (1 month–18 months) ago and for majority of them disease was managed at home (81.7%). More than half (52.5%) of the participants stated that they had a difficult time during the disease and were bed-ridden during the course of the disease. After the corona disease, 8.4% of the participants stated that it had no effect on them, 62.9% stated that it had a physiological effect (60% lost weight) and 15.3% stated that it had a psychological effect (80.2% were afraid to go out).

The scores of the participants are given in Table 1 according to the HPI. It was found that the mean total adjustment score of the participants was 91.97±16.9, the mean social adjustment score was 46.49 ± 8.7and the mean PA score was 45.47±9.7. According to the HPI norms, the mean general, personal, social and sub-dimension scores correspond to 50%.

Figure 1, 2, 3 shows hazard function graphs of the participants according to general, social and PA variables. Accordingly, it was determined that the mean GA month of the participants was 13.59±0.64, the mean SA month was 13.89±0,65 and the mean PA month was 11.83±0.52.

Table 2 shows the adjustment levels of the participants according to their socio-demographic characteristics. Accordingly, it was found that the mean SA month of the participants who stated that this disease did not have any effect on them after having corona was 9.12±0.2 months, while the mean SA month of the participants who stated that it had psychological, physiological or both effects was 14.80±0.8; this difference was statistically significant ($p<0.05$). While comparing other variables, no statistically significant difference was calculated.

Table 1. Values Related to Participants' Personality, Social, General and Sub-Dimension Adjustment Scores According to Hacettepe Personality Inventory

	n	X̄	SD	Min	Max	Full Value
General Cohesion Score	202	91.97	16.9	50	154	160
Personal Cohesion Score	202	45.47	9.7	22	75	80
Social Cohesion Score	202	46.49	8.7	26	79	80
Self-actualization	202	11.33	2.9	3	20	20
Emotional Stability	202	11.96	2.9	5	19	20
Neurotic Tendencies	202	11.26	3.3	2	19	20
Psychotic Symptoms	202	10.91	2.9	2	20	20
Family Relations	202	11.06	2.8	4	20	20
Social Relations	202	11.95	2.7	4	20	20
Social Norms	202	11.75	3.0	4	20	20
Antisocial Tendencies	202	11.72	3.0	3	20	20

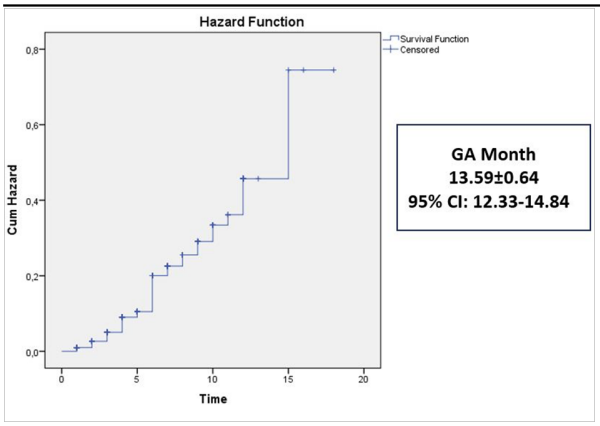

Figure 1: Hazard Function Graph by Participants' General (GA) Adjustment Variable

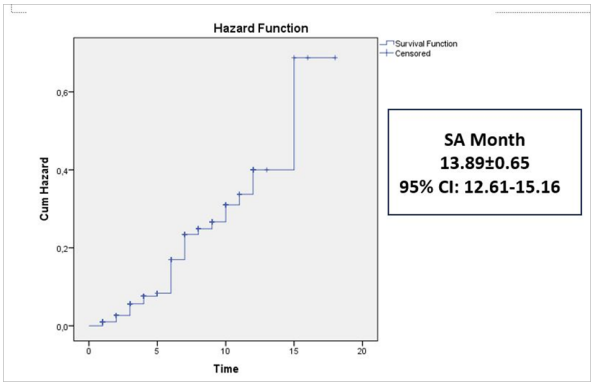

Figure 2: Hazard Function Graph by Participants' Social (SA) Adjustment Variable

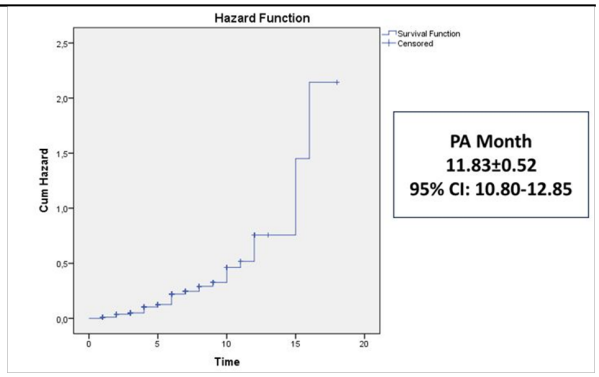

Figure 3: Hazard Function Graph by Participants' Personal (PA) Adjustment Variable

DISCUSSION

This is the first study to investigate the adjustment of individuals with corona virus disease to life, to themselves and to social life after the disease, the time of adjustment and the factors affecting the adjustment process. Therefore, no comparison with other literature can be made. The fact that the majority of the participants in this study (85.1%) had an education at the university level and were young (mean age 26.87), we assume that the answers given by the participants to the inventory are more reliable and valid.

Almost all the participants (91.6%) stated that the co-

Table 2. Kaplan–Meier Survival Analysis According to Socio-Demographic Characteristics of Participants

Variables	General Adjustment				Personal Adjustment				Social Adjustment			
	Mean Adjustment Months	95% CI	Log Rank	p	Mean Adjustment Months	95% CI	Log Rank	p	Mean Adjustment Months	95% CI	Log Rank	p
Sex			0.39	0.530			0.17	0.677			0.46	0.494
Female	13.27±0.8	11.68-14.86			11.62±0.6	10.30-12.93			13.56±0.8	11.93-15.18		
Male	11.08±0.3	10.30-11.86			10.51±0.4	9.69-11.32			11.29±0.3	10.54-12.04		
Age			0.09	0.764			0.39	0.527			0.08	0.774
Under 25	14.07±0.6	12.81-15.34			12.47±0.6	11.10-13.83			14.18±0.6	12.91-15.44		
25 Years and Over	12.16±0.6	10.80-13.51			11.21±0.6	9.90-12.53			12.71±0.6	11.41-14.01		
Education Status			0.60	0.437			0.09	0.763			0.99	0.320
Primary Education	10.84±0.5	9.67-12.02			10.21±0.5	9.05-11.37			10.83±0.5	9.78-11.89		
University and Above	13.43±0.6	12.09-14.76			11.93±0.5	10.80-13.05			13.67±0.6	12.33-15.01		
Location during the Covid Process			0.15	0.690			0.08	0.776			0.48	0.486
Home	13.72±0.6	12.38-15.06			11.94±0.5	10.82-13.07			14.06±0.6	12.71-15.41		
Hospital	10.29±0.6	9.07-11.51			10.11±0.5	8.99-11.22			10.01±0.6	8.79-11.24		
Chronic Disease Status			0.88	0.340			0.71	0.398			1.34	0.246
No	13.35±0.6	12.04-14.65			11.66±0.5	10.59-12.74			13.61±0.6	12.29-14.94		
Yes	10.69±0.5	9.52-11.86			10.48±0.6	9.19-11.76			11.00±0.6	9.93-12.06		
Evaluation of the Covid Process			0.14	0.705			0.10	0.742			0.59	0.440
Comfortable	13.66±0.6	12.29-15.03			11.94±0.5	10.79-13.08			13.64±0.7	12.27-15.01		
Difficult	10.14±0.5	9.08-11.19			9.89±0.5	8.86-10.92			10.64±0.4	9.71-11.56		
Status of being Affected After Covid			1.17	0.278			2.47	0.116			4.12	**0.043**
No	11.11±0.5	8.37-13.86			10.08±0.5	7.46-12.70			9.12±0.5	7.15-13.02		
Yes	14.25±0.7	13.18-15.32			12.46±0.4	11.27-13.66			14.80±0.8	13.78-15.82		

rona virus disease had one or more effects on them. Among these effects, physiologically, they experienced weight loss and weakness, which still persisted, while psychologically, they were mostly afraid to go out and avoided people. When we analyzed the findings, individual and collective reactions to corona virus disease can be explained by the fear of the unknown. Studies have reported patients having persistent physical[3,9,10,12,14-16] and psychological symptoms[3-6,10,11,15-19] 1 to 3 months after being discharged from the hospital. When these symptoms were examined, physiological symptoms were similar to those in this study, but unlike the symptoms such as anxiety and stress mentioned in the psychological findings, people revealed their feelings and behaviors by expressing that they were afraid to go out and avoided people after this disease. This shows that people have a negative attitude towards social and life adjustment.

According to the HPI inventory of the participants in this study, it was found that their general, social, personal and sub-dimension adjustments were at a moderate level after having corona virus disease (Table 1). In their survival analyses, it was found that the participants needed 13.59±0.64, months to adjust to the environment, 13.89±0,65 months for SA and 11.83±0.52 months for PA after the corona virus disease. With these results, this is the first study to indicate that it will take an average of 1 year for people to adjust to life after corona virus disease. In a case study report of a corona virus patient, it was reported that the patient returned to work after 7 months, but although he felt that he had returned to his normal state, he was understandably very nervous in the crowd and took leave again.[17] In another study conducted in China and the United States, which monitored the course of people's psychological and behavioral reactions based on the four waves of the corona virus disease pandemic, it was suggested that understanding how people react and adjust to the current crisis is important in terms of preparing for the next pandemic and protecting community/individual health.[4] Thus, this study explains one dimension of this suggestion and suggests that there should be programs to increase the adjustment process of people after corona virus disease to create healthy societies.

In this study, the Kaplan–Meier survival analysis clearly showed that the mean social adjustment month of people who experienced psychological/physiological effects after corona virus disease was 14.80±0.8 months, whereas it was 9.12±0.2 months for people who did not experience any effects ($p<0.05$, Table 2). In another study, it is stated that the distress experienced in the disease may increase the distress that may occur in the person's later life.[18,19] This result suggests that those who experience psychological and physiological effects after corona virus disease should be prioritized and supported.

CONCLUSIONS

We investigated the life adjustment process of people having corona virus, and the social/personal interventions are needed to increase adjustment to life after corona virus disease. These results strongly suggest the need for community health programs.

Nurses are highly likely to encounter individuals who have been diagnosed with COVID-19 in every environment in which they provide healthcare services (e.g., hospitals, family health centers). By the assessment of the adaptation levels of the individual in the care to be provided to them, it will be possible to increase both the quality of nursing care and the adaptation levels of individuals.

Ethics Committe Approval: Ethics committee approval was obtained from the Noninvasive Clinic Ethical Committee of the Medical Faculty at Harran University.

Informed Consent: In this study, verbal consent was obtained from all participants.

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