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[Nderim Zyber Rizanaj](#) and [Fahri Qemal Gavazaj](#) \*

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*Article*

# Effects of Depressive and Anxiety Behaviors in Patients Aged 30–75+ Who Have Experienced COVID-19

Nderim Rizanaj and Fahri Gavazaj \*

Alma Mater Europaea Campus College “Rezonanca” Prishtinë; nderim.rizanaj@rezonanca-rks.com

\* Correspondence: fahri.gavazaj@rezonanca-rks.com

**Abstract:** The COVID-19 pandemic has brought about significant psychological challenges, particularly depressive and anxiety-related behaviors in those who have recovered from the virus. This study focuses on individuals aged 30-75+ to understand the prevalence, severity, and impact of these symptoms. By exploring their lasting consequences and potential risk factors, we aim to provide valuable insights for healthcare and mental health professionals, guiding the development of effective support systems to address the psychological aftermath of COVID-19. In this study, a quantitative research design was used to investigate the effects of depressive and anxiety behaviors in patients aged 30-75+ who had experienced COVID-19. The research employed a cross-sectional approach, collecting data at a specific time to assess the prevalence and severity of depressive and anxiety symptoms in the target population. A total of 422 patients were recruited through convenience sampling from various sources, including healthcare facilities, community organizations, and online platforms. Inclusion criteria encompassed individuals aged 30-75+ who had tested positive for COVID-19 and had recovered from the infection. Those with pre-existing mental health conditions significantly affecting depressive and anxiety symptoms were excluded. The sample was diverse in terms of age, gender, employment status, education level, marital status, and past chronic problems. Data collection involved administering standardized questionnaires, such as the Patient Health Questionnaire (PHQ-9) for depressive behaviors and the Generalized Anxiety Disorder 7-item scale (GAD-7) for anxiety behaviors. These questionnaires assessed symptom severity, while demographic variables were collected separately. The collected data underwent analysis using the Statistical Package for the Social Sciences (SPSS) software, encompassing descriptive statistics, reliability assessments, normality tests, non-parametric tests for demographic comparisons, correlation analyses, and linear regression. Ethical approval and informed consent were obtained, ensuring participant confidentiality and data privacy. Several limitations were acknowledged, including the cross-sectional design's inability to establish causal relationships, potential selection bias due to convenience sampling, susceptibility to response biases with self-report measures, and assumptions and limitations inherent in statistical tests. Overall, the study aimed to provide insights into the effects of depressive and anxiety behaviors in COVID-19 survivors aged 30-75+ and contribute to the development of targeted interventions and support services for this population. This study explored the impact of depressive and anxiety behaviors in COVID-19 survivors aged 30-75+. It involved data collection through validated questionnaires and rigorous statistical analysis. The findings underscore the importance of tailored interventions and support systems to address the long-term psychological effects of the pandemic. Healthcare professionals, researchers, and policymakers must collaborate to prioritize mental well-being and allocate resources accordingly, ultimately improving the quality of life for survivors.

**Keywords:** effects; depressive behaviors; anxiety behaviors; patients aged 30–75+; experienced; COVID 19

## 1. Introduction

The COVID-19 pandemic has presented unparalleled difficulties and has left a profound impact on people across the globe. In addition to the physical symptoms and health repercussions caused by the virus, there is an increasingly recognized awareness of the psychological aftermath that individuals affected by COVID-19 endure (Maital & Barzani, 2020). Among various mental health

challenges, depressive and anxiety-related behaviors have surfaced as significant concerns among individuals who have contracted COVID-19. This research aims to investigate the implications of depressive and anxiety behaviors in individuals aged 30-75+ who have previously been infected with COVID-19. It is imperative for healthcare professionals and policymakers to grasp the psychological ramifications of the virus to develop effective strategies for providing support and treatment to those affected (Cao et al., 2020).

Research findings indicate that COVID-19 can have wide-ranging effects on mental well-being, leading to the emergence of symptoms associated with depression, such as persistent feelings of sadness, loss of interest, and alterations in appetite and sleep patterns (Wang, Horby, Hayden, & Gao, 2020). Furthermore, individuals who have battled the virus have displayed behaviors linked to anxiety, such as excessive worrying, restlessness, and panic attacks. However, the precise impact of COVID-19 on individuals in the age range of 30-75+ is an area that requires further exploration. Through an investigation into the consequences of depressive and anxiety-related behaviors in this specific age group, our goal is to provide insight into the psychological effects experienced by individuals who have recovered from COVID-19 (Anand, Karade, Sen, & Gupta, 2020).

The outcomes of this research have the potential to offer valuable insights to healthcare practitioners, mental health experts, and policymakers, enabling them to devise specific strategies and support structures aimed at mitigating the long-term repercussions of the virus on mental health. This study will employ a blend of quantitative and qualitative research methods to compile comprehensive data on the occurrence and significance of depressive and anxiety-related behaviors among individuals who have recuperated from COVID-19. The data will be gathered through a questionnaire survey. In essence, this investigation seeks to enrich the existing knowledge base by scrutinizing the impact of depressive and anxiety behaviors in individuals aged 30-75+ who have confronted COVID-19. By delving into the psychological facets of the virus, our intention is to guide the development of mental health interventions and support systems that can effectively assist individuals in coping with the aftermath of their COVID-19 experience. The principal objective of this research is to delve into the effects of depressive and anxiety-related behaviors in individuals aged 30-75+ who have had COVID-19. The study aims to explore the prevalence and intensity of depressive and anxiety symptoms among those who have recovered from COVID-19 and assess their potential ramifications on various aspects of their physical, mental, and social well-being.

### *Objectives*

**Assess Prevalence:** Determine the prevalence of depressive and anxiety behaviors among patients aged 30-75+ who have recovered from Covid-19. This objective aims to understand the frequency and distribution of these symptoms within the target population. **Severity Assessment:** Evaluate the severity of depressive and anxiety symptoms in Covid-19 survivors. By utilizing validated measurement scales, we aim to quantify the extent of emotional distress experienced by the participants.

**Relationship with Covid-19 Severity:** Investigate whether the severity of Covid-19 illness is associated with the development and intensity of depressive and anxiety symptoms. This objective aims to understand potential links between physical health outcomes and mental well-being.

**Impact on Quality of Life:** Examine the influence of depressive and anxiety behaviors on the overall quality of life in Covid-19 survivors. We will explore how these psychological symptoms may affect daily functioning, relationships, and general well-being.

**Identification of Risk Factors:** Identify potential risk factors associated with the development of depressive and anxiety behaviors in Covid-19 survivors. By understanding these factors, we can help predict and prevent adverse mental health outcomes.

**Long-term Consequences:** Investigate the persistence of depressive and anxiety symptoms beyond the acute phase of Covid-19 and determine if there are any lasting effects on mental health in the long term.

## **2. Literature Review**

Ever since the declaration of COVID-19 as a global pandemic by the World Health Organization on March 11, 2020, the world has placed an immense emphasis on containing the virus's spread (Abelson, 2020). COVID-19 is notorious for its rapid transmission from person to person, with the

added concern that asymptomatic individuals can also transmit the virus to others (Adams & Walls, 2020). In an effort to curtail community transmission, numerous countries across the globe implemented unprecedented restrictions throughout March, April, and May 2020. These measures mandated their populations to remain in isolation at their homes and maintain physical distance from others, often termed as "quarantine" or "social distancing." These actions had a profound and far-reaching impact on the daily lives of people. It's worth noting that similar isolation measures were put in place during previous outbreaks like SARS in 2003 and MERS in 2012, which affected regions in Asia and Canada.

Enforcing temporary confinement measures at home to curb the rapid spread of infection has had a noteworthy adverse effect on mental well-being over the medium to long term (Afifi, Cox, & Enns, 2006). Investigations centered on the repercussions of quarantine measures indicate that the elevated levels of stress and anxiety experienced during the quarantine period have the potential to escalate into severe distress, possibly leading to significant psychological conditions (Brooks et al., 2020). Initial research into the COVID-19 pandemic also suggests the emergence of mental health challenges (Torales, O'Higgins, Castaldelli-Maia, & Ventriglio, 2020). However, the majority of these studies have been concentrated among healthcare workers on the frontlines (Anand, Karade, Sen, & Gupta, 2020). Only a handful of studies conducted so far have delved into the psychological consequences for the general population. For instance, (Qiu et al., 2020) carried out a study on psychological symptoms within the Chinese general population ( $n = 1211$ ) during the early phases of the COVID-19 pandemic. Their findings revealed a high prevalence of stress, anxiety, and depressive symptoms during the outbreak, with as many as 53.8% of their participants reporting the psychological impact of the pandemic as moderate to severe.

Similarly, a research effort conducted by (Organization & others, 2020) unveiled elevated rates of depression and anxiety indicators within the general populace ( $n = 1642$ ) during the most stringent confinement measures. This inquiry revealed that being female, aged under 50, a university student, or unemployed were factors linked to experiencing COVID-19-related symptoms of depression and anxiety. Thus, existing research underscores the prevalence of these psychological responses in specific regions globally during the initial phases of the COVID-19 pandemic (Wang, Horby, Hayden, & Gao, 2020).

However, it's worth noting that the literature addressing the mental health consequences of the pandemic remains somewhat limited and primarily focuses on particular countries, potentially failing to represent the experiences of diverse populations worldwide. Furthermore, the precise factors related to the COVID-19 pandemic and the subsequent social restrictions that contribute to these mental health symptoms remain largely unknown. Consequently, the current study set out to explore the impact of the pandemic and the subsequent social restrictions on depression and anxiety indicators within the global adult population. In particular, this research examined demographic risk factors, exposure to COVID-19, levels of government-imposed quarantine or isolation measures, and the life changes brought about by COVID-19 as potential predictors of mental health outcomes (Wang, Horby, Hayden, & Gao, 2020).

The COVID-19 pandemic has ushered in significant alterations to individuals' daily routines, exerting a profound impact on their mental well-being. The imposition of measures such as isolation and social distancing, coupled with the overall fallout from the pandemic, has resulted in the loss of crucial social support systems and a sense of normalcy. This has rendered coping with the pandemic-induced stress a formidable challenge. In this context, governments play a pivotal role in assuaging uncertainty among their populations by disseminating reliable information and extending assistance. Furthermore, it is imperative for governments to incorporate mental health interventions into their emergency plans during pandemics (Moriguchi et al., 2020).

The findings of this study underscore the paramount importance of ensuring the accessibility and affordability of mental health treatment on a global scale. Telepsychology services, having been widely embraced during the COVID-19 pandemic, have emerged as one of the primary avenues for addressing the elevated rates of depression and anxiety symptoms. Psychologists should continue to explore and advocate for both videoconferencing- and telephone-based psychotherapy services, particularly during acute phases of the pandemic. Governmental policies that facilitate full reimbursement to mental health care providers for telehealth services play a pivotal role in supporting these endeavors (Nicola, 2020).



Psychologists delivering these services should assess the pandemic's impact on their patients' mental health and offer problem-solving therapy to address the identified challenges. Additionally, employing evidence-based approaches to alleviate subsequent depression and anxiety symptoms is crucial (Afifi, Cox, & Enns, 2006). Encouraging social interactions while adhering to physical distancing guidelines and recommending effective anxiety-reduction strategies, such as relaxation techniques, exercise, and maintaining good sleep hygiene, may help ameliorate the negative effects of the pandemic. Furthermore, assisting patients in optimizing remote work settings, establishing routines, and reorganizing household roles are essential to help individuals cope with the disruptions to everyday life and regain a sense of control that may have been eroded during the pandemic. As exemplified by this current study, the services provided by psychologists play an indispensable role in meeting the mental health needs of the global population (Banerjee, 2020).

While COVID-19, a novel strain of coronaviruses, is known to manifest a spectrum of illnesses ranging from mild cold-like symptoms to more severe conditions such as SARS and MERS (Wang et al., 2020), common symptoms include fever, chills, cough, sore throat, muscle pain, nausea, vomiting, and diarrhea. Men with pre-existing health conditions face a heightened risk of infection and may experience more severe outcomes (Moriguchi et al., 2020). Severe cases can lead to heart and respiratory failure, acute respiratory syndrome, and, in some instances, even fatalities (Moghanibashi-Mansourieh, 2020).

Beyond its physical impacts, COVID-19 can exert significant effects on individuals' mental health (Ahmed et al., 2020). Throughout the pandemic, a gamut of psychological outcomes has been observed, spanning from the individual level to the community, national, and international levels. On an individual level, people may grapple with fears of contracting the virus or perishing, a sense of helplessness, and the stigma attached to their circumstances (Bai et al., 2020). The pandemic has had a detrimental impact on public mental health, potentially culminating in psychological crises (Chew et al., 2020). The early identification of individuals experiencing psychological distress is pivotal for the implementation of more effective intervention strategies. Health crises like the COVID-19 pandemic engender psychological shifts not only among healthcare workers but also within the general populace. These shifts may manifest as fear, anxiety, depression, or feelings of insecurity (Draper et al., 2022). The pandemic's psychological repercussions extend beyond physical health considerations and necessitate comprehensive approaches aimed at addressing the mental well-being of individuals and communities.

Nervousness and anxiety have profound societal implications as well. Recent evidence indicates that individuals subjected to isolation and quarantine encounter elevated levels of anxiety, anger, confusion, and stress (Gao et al., 2020). Across various studies examining psychological disorders during the COVID-19 pandemic, affected individuals have exhibited a multitude of mental trauma symptoms, including emotional distress, depression, stress, mood swings, irritability, insomnia, attention deficit hyperactivity disorder, post-traumatic stress, and anger (Kępińska et al., 2020). Furthermore, excessive exposure to media coverage has been shown to induce distress. However, accurately predicting the psychological and emotional consequences of COVID-19 in the current situation is a formidable task. Studies conducted in China, the first country impacted by the recent virus outbreak, suggest that people's fear of the unknown nature of the virus can precipitate mental disorders (Usher, Bhullar, Durkin, Gyamfi, & Jackson, 2020). The uncertainty shrouding the pandemic and the constant deluge of information can exacerbate anxiety and distress in individuals, underscoring the imperative need for effective mental health support and interventions during these challenging times.

In December of 2019, an unusual outbreak of pneumonia cases surfaced in Wuhan, China, later identified as Coronavirus Disease 2019 (COVID-19) by the World Health Organization (WHO) on February 11, 2020 (Adams & Walls, 2020). The responsible virus, SARS-CoV-2, was recognized as a novel strain of coronaviruses, sharing 79% genetic similarity with the SARS-CoV virus responsible for the 2003 SARS outbreak. On March 11, 2020, the WHO declared COVID-19 a global pandemic. The rapidly evolving situation has left a profound impact on various facets of life, including the global economy, both public and private. The outbreak has led to significant declines in industries such as tourism, aviation, agriculture, and finance. Governments worldwide have implemented restrictions affecting both the supply and demand aspects of economies (Nicola, 2020).

The uncertainties and apprehensions surrounding the viral outbreak, coupled with widespread lockdowns and economic downturns, have raised concerns regarding an upsurge in suicide rates and associated mental health disorders. For example, studies have projected an increase in suicides linked to joblessness, with projections suggesting Canadian suicide cases could rise from 418 to 2114 (McIntyre & Lee, 2020). Similar trends have been reported in the USA, Pakistan, India, France, Germany, and Italy. Moreover, research has indicated a rise in psychological distress among the general population, individuals with pre-existing mental conditions, and healthcare workers (Wang, Horby, Hayden, & Gao, 2020).

Given these findings, there is a pressing need to prioritize public mental health and implement policies to support individuals during this challenging period. Addressing mental health concerns, particularly during a global crisis like the COVID-19 pandemic, is crucial for safeguarding the well-being and resilience of communities worldwide (Li, Bai, & Hashikawa, 2020). Previous experiences with respiratory viral diseases have revealed both immediate and enduring psychological consequences in survivors (Li et al., 2020). Coronaviruses, a group of RNA viruses, can lead to a spectrum of infections ranging from mild common colds to severe acute respiratory syndromes (Mazza et al., 2020). There is evidence suggesting that exposure to coronaviruses during and after outbreaks of Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) has been associated with neuropsychiatric disorders (Moriguchi et al., 2020). Survivors of SARS have reported psychiatric symptoms, including post-traumatic stress disorder (PTSD), depression, panic disorder, and obsessive-compulsive disorder (OCD), in follow-up periods spanning from 1 to 50 months. Additionally, seropositivity for coronaviruses has been linked to suicide and psychosis, persisting even one year after SARS (Moghanibashi-Mansourieh, 2020).

The recent global spread of the Severe Acute Respiratory Syndrome Coronavirus (COVID-19) pandemic is also under scrutiny for potential psychiatric implications (Moriguchi & others, 2020). Initial data suggests that patients with COVID-19 may experience symptoms such as delirium, depression, anxiety, and insomnia (Zhou et al., 2020). Coronaviruses have the potential to cause psychopathological consequences either through direct viral infection of the central nervous system (CNS) or indirectly via an immune response (Tan et al., 2020). A range of studies encompassing clinical, post-mortem, animal, in vitro, and cell culture research has indicated that coronaviruses may possess neurotropic properties and can inflict damage on neurons (Presti et al., 2020). Besides the possibility of viral infiltration into the brain, the "cytokine storm" triggered by the immune response to coronaviruses could contribute to psychiatric symptoms by inciting neuroinflammation (Qian et al., 2020).

Contemporary understanding of inflammation within the field of psychiatry suggests that disturbances in the immune system induced by infections could specifically contribute to psychopathology, compounding the psychological stress of enduring a potentially life-threatening disease and its associated inflammation (Rubin & Wessely, 2020). Research has illuminated the interaction between the innate and adaptive immune systems and neurotransmitters in mood disorders, psychosis, and anxiety disorders (Salari et al., 2020). In light of these immunological mechanisms, patients dealing with COVID-19 confront substantial psychological stressors, including the fear of illness, uncertainty about the future, stigma, traumatic memories of severe illness, and social isolation (Shigemura, Ursano, Morganstein, Kurosawa, & Benedek, 2020). These stressors may converge and contribute to the development of psychopathological outcomes. Considering the limited preliminary research on COVID-19 and the evidence from previous outbreaks like SARS and MERS, it is hypothesized that survivors of COVID-19 are likely to exhibit a high prevalence of emerging psychiatric conditions, including mood disorders, anxiety disorders, PTSD, and insomnia. Available data indicates that confusion and delirium are common during the acute phase of the illness, but there is currently no data available on psychopathology during the post-illness phase (Bai et al., 2020). Therefore, the present study aims to explore the psychopathological impact of COVID-19 on survivors after one month of recovery while considering potential influences from various risk factors.

Coronaviruses represent a group of single-stranded RNA viruses, encompassing various subtypes that affect humans. Most of these subtypes typically cause mild upper respiratory tract infections in individuals with healthy immune systems, such as HCoV-229E, HCoV-OC43, HCoV-NL63, and HCoV-HKU1 strains. However, certain coronaviruses have been detected in the brain and

cerebrospinal fluid of individuals suffering from conditions like seizures, encephalitis, and encephalomyelitis. Over the years, novel coronavirus strains have sparked outbreaks, such as Severe Acute Respiratory Syndrome (SARS) in 2002 and Middle East Respiratory Syndrome (MERS) in 2012. On December 31, 2019, the World Health Organization (WHO) was alerted to atypical pneumonia cases in Wuhan, China, caused by a new coronavirus known as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (Salari et al., 2020).

As the COVID-19 pandemic has continued to spread, there has been growing awareness of its potential psychiatric implications. The causes of these consequences are multifaceted and closely tied to the broader societal impact and governmental responses to the pandemic, including measures like physical distancing and quarantine. Both individuals infected with the virus and those who are not may experience psychiatric effects due to various factors, including widespread anxiety, social isolation, stress among healthcare and essential workers, and economic hardship, such as unemployment or financial struggles (Solomou & Constantinidou, 2020).

Additional experiences specific to individuals infected with the virus may involve concerns about the severity of their illness, the stigma they may face, and grappling with amnesia or traumatic memories associated with their condition. Neuropsychiatric consequences, referring to mental disorders resulting from brain damage or disease, can occur either directly due to the virus infecting the central nervous system (CNS) or indirectly through an immune response or medical treatment. A case series from Wuhan reported that 36% of patients hospitalized for SARS-CoV-2 infection exhibited neurological symptoms. While these symptoms were mainly mild, such as dizziness and headaches, some patients experienced acute cerebrovascular disease or impaired consciousness as part of their illness (Wang, Horby, Hayden, & Gao, 2020).

Infectious disease outbreaks like COVID-19 can have a psychological impact on both healthcare workers and the general population. A well-documented example is the psychological aftermath observed during the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003 (Shigemura, Ursano, Morganstein, Kurosawa, & Benedek, 2020). Studies conducted during the SARS outbreak revealed that healthcare workers experienced acute stress reactions.

Psychologists, psychiatrists, and behavioral scientists across the globe are grappling with significant challenges related to stress, anxiety, and depression. Depression, classified by the World Health Organization, stands as one of the most prevalent mental disorders worldwide, characterized by symptoms such as low mood, loss of interest, guilt, worthlessness, disruptions in sleep and appetite, decreased energy, and diminished concentration. Both depression and anxiety rank among the most common psychiatric disorders, affecting approximately 10 to 20% of the general population. Stress is an inherent component of human existence and a prevalent issue in modern societies (Sigdel et al., 2020). Anxiety, often accompanied by feelings of fear and unease, presents with symptoms including fatigue, restlessness, and palpitations. Its etiology involves a myriad of factors, encompassing genetic, hereditary, environmental, psychological, social, and biological elements. Individuals grappling with persistent anxiety and worry may experience a decline in self-confidence, leading to feelings of humiliation and, ultimately, contributing to workplace stress and diminished performance (Moghanibashi-Mansourieh, 2020). This cycle can intensify anxiety, leading to the erosion of mental and physical capabilities and potentially culminating in unstable neuropsychiatric disorders over time.

### **3. Materials and Methods**

#### *3.1. Study Design*

This study adopts a quantitative research design to examine the effects of depressive and anxiety behaviors in patients aged 30-75+ who have experienced COVID-19. The study employs a cross-sectional approach, collecting data at a specific point in time to assess the prevalence and severity of depressive and anxiety symptoms in the target population.

#### *3.2. Participant Selection*

A total of 422 patients will be recruited for this study using convenience sampling methods. Participants will be selected from healthcare facilities, community organizations, and online platforms. Inclusion criteria include individuals aged 30-75+ who have tested positive for COVID-19 and have recovered from the infection. Exclusion criteria involve individuals with pre-existing

mental health conditions that significantly affect depressive and anxiety symptoms. The sample will be diverse in terms of age, gender, employment status, education level, marital status, and presence of chronic problems in the past.

### 3.3. Data Collection

Data collection will involve the administration of standardized questionnaires to assess depressive and anxiety behaviors. Participants will be asked to complete validated self-report measures, such as the Patient Health Questionnaire (PHQ-9) for depressive behaviors and the Generalized Anxiety Disorder 7-item scale (GAD-7) for anxiety behaviors. The questionnaires will capture information on the severity of symptoms experienced. The demographic variables (gender, employment status, education level, marital status, chronic problems) will also be collected using a separate questionnaire.

### 3.4. Data Analysis

The collected data will be analyzed using the Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics, such as means, standard deviations, frequencies, and percentages, will be calculated to describe the prevalence and severity of depressive and anxiety symptoms. The reliability of the questionnaires will be assessed using Cronbach's alpha to determine internal consistency. Tests of normality, such as the Shapiro-Wilk test, will be performed to assess the distribution of variables.

To examine differences in depressive and anxiety behaviors based on demographic variables, the non-parametric Mann-Whitney U-test and Kruskal-Wallis test will be conducted. Correlation analyses, such as Spearman's rank correlation, will be used to explore the relationship between depressive and anxiety symptoms. Linear regression analysis will be conducted to investigate potential predictors of depressive and anxiety behaviors, considering the demographic variables as independent variables.

### 3.5. Ethical Considerations

Ethical approval will be sought from the relevant institutional review board or ethics committee prior to data collection. Informed consent will be obtained from all participants, ensuring their understanding of the study objectives, procedures, risks, and benefits. Participants' confidentiality and data privacy will be ensured throughout the study.

### 3.6. Limitations

Several limitations should be acknowledged. Firstly, the cross-sectional design restricts the ability to establish causal relationships between COVID-19 and depressive/anxiety behaviors. Secondly, convenience sampling may introduce selection bias, limiting the generalizability of the findings. Thirdly, reliance on self-report measures may be susceptible to response biases. Lastly, the statistical tests used have their own assumptions and limitations that need to be considered.

By employing a sample of 422 patients, using validated questionnaires, applying various statistical tests in SPSS, and considering demographic variables, this study aims to provide insights into the effects of depressive and anxiety behaviors in patients aged 30-75+ who have experienced COVID-19. The findings will contribute to the existing literature on mental health outcomes in COVID-19 survivors and help in developing targeted interventions and support services for this population.

## 4. Results

In the study, a total of 422 patients were included, of which 169 were male, accounting for 40%, and 253 were female, making up 60%. Approximately 204 of them, or 48.3%, were employed, while 218 were unemployed, constituting 51.7%. Among them, 173 had primary education, which is 41%, 127 had secondary education, accounting for 30.1%, 80 had a bachelor's degree, making up 19%, 20 had a master's degree, which is 4.7%, and 1 had a PhD, representing 0.2%. Of these, 61 were declared unmarried, or 14.5%, 306 were married, constituting 72.5%, and 55 were divorced, making up 13%.



A total of 189 patients, or 44.8%, reported having chronic health issues, with an average age of 57.04 years and a standard deviation of 13.20 years.

Gender	N	%
Male	169	40.0
Female	253	60.0
Employment status	N	%
Yes	204	48.3
No	218	51.7
Education level	N	%
None	21	5.0
Primary school	173	41.0
Secondary school	127	30.1
University - Bachelor	80	19.0
Master	20	4.7
PhD	1	.2
Marital status	N	%
Single	61	14.5
Married	306	72.5
Divorced	55	13.0
Cronic problems in the past	N	%
Yes	189	44.8
No	233	55.2
Age	Mean	Std
	57.04	13.20

Source: Author.

Regarding depressive expressions, below we have presented the opinions of patients, which they have assessed on a Likert scale, ranging from 1 as the lowest rating to 5 as the highest. From the results, it is understood that the majority of them express that they can stay focused for a long time in one place, while fewer of them express that they are burdened with their lives. A significant portion of them report rarely or sometimes having sleep problems, which is confirmed by the fact that most of them rarely or sometimes sleep for 7-8 hours. The majority of them consume sugary foods and beverages as well. They also indicate that they have problems with headaches and muscle tension. Rarely or sometimes, they express a lack of sexual desire, and they report a similar condition regarding periods or sexual impotence. They state that sometimes or often they feel the need to escape from others, and they use alcohol, drugs, or cigarettes to relax. Finally, they mention that they feel nervous sometimes or often about things they cannot complete.

Depressive behaviore	Never		Rarely		Sometimes		Often		Always	
	N	%	N	%	N	%	N	%	N	%
How often are you able to stay focused on one issue?	0	0.0%	36	8.5%	135	32.0%	193	45.7%	58	13.7%
How often do you feel overwhelmed with your life?	1	0.2%	60	14.2%	189	44.8%	152	36.0%	20	4.7%

Do you have trouble falling asleep at night? (The average person falls asleep in 11 7-10 minutes).	2.6%	121	28.7%	172	40.9%	102	24.2%	15	3.6%
On average, do you sleep 7-8 hours a day?	22 5.2%	120	28.4%	148	35.1%	111	26.3%	21	5.0%
Do you consume foods like cakes, pastries, sugary items, and drink excessively when you feel overwhelmed?	9 2.1%	94	22.3%	204	48.5%	110	26.1%	4	1.0%
Do you experience headaches or muscle tension?	1 0.2%	62	14.7%	207	49.1%	132	31.3%	20	4.7%
During work or leisure hours, do you have difficulty staying focused and concentrating on tasks you need to complete?	12 2.9%	82	19.5%	230	54.6%	92	21.9%	5	1.2%
Do you feel pain or tension in the stomach, muscles, chest, or head?	0 0.0%	56	13.3%	215	50.9%	142	33.6%	9	2.1%
Have you noticed an increase or decrease in your sexual desire?	44 10.4%	90	21.3%	203	48.1%	70	16.6%	15	3.6%
Have you ever experienced irregular periods (this question is for females) or impotence (in males under the age of 65)?	35 8.5%	91	22.1%	195	47.3%	86	20.9%	5	1.2%
Do you enjoy withdrawing from family, friends, and isolating yourself?	32 7.6%	61	14.5%	221	52.4%	105	24.9%	3	0.7%
Have there been any changes (an increase) in your daily habits, such as using alcohol, drugs, or tobacco as a way to relax?	47 11.1%	60	14.2%	218	51.7%	94	22.3%	3	0.7%
Do you feel nervous, annoyed, or angry about unimportant issues?	16 3.8%	72	17.1%	178	42.2%	145	34.4%	11	2.6%

Source: Author.

The majority of patients express that on several consecutive days, they have felt nervous, anxious, or upset, while on the other hand, they find it difficult to control themselves from getting upset. Patients have also expressed that they feel worried about various things and have a lot of trouble relaxing and calming down when they feel upset. They mention that they are easily hurt and have a sense that something bad might happen.

Anxiozity	Never		On several consecutive days		More than half of the days of the week		Almost every day of the week	
	N	%	N	%	N	%	N	%
Do you feel nervous, anxious, or worried?	67	15.9%	263	62.3%	63	14.9%	29	6.9%
Do you have difficulty stopping or controlling your worries?	71	16.8%	251	59.5%	68	16.1%	32	7.6%
Do you worry excessively about different things?	76	18.0%	240	56.9%	74	17.5%	32	7.6%

Do you have trouble relaxing, and find it hard to unwind?	77	18.2%	230	54.5%	85	20.1%	30	7.1%
Are you so worried that it is difficult for you to calm down or sit still?	79	18.7%	221	52.4%	88	20.9%	34	8.1%
Do you easily get annoyed or nervous?	62	14.7%	226	53.6%	92	21.8%	42	10.0%
Do you have a feeling of fear, as if something terrible might happen?	49	11.6%	175	41.5%	108	25.6%	90	21.3%

Source: Author.

4.1. Alpha Cronbach’s

The reliability test has been conducted within the framework of depressive expressions and anxiety levels, where we see that in the first one, there is a reliability level of 80.2%, while in the second one, the reliability level is 96.6%.

	Cronbach’s Alpha	Item
Depressive behaviors	.802	13
Level of anxiety	.966	7
Mean		20

Source: Author.

4.2. Test of Normality

The reliability test confirms that the data has a non-parametric distribution, with a p-value of <0.05, indicating that the research results will be conducted using non-parametric tests.

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Depressive behaviors	.134	422	.000	.947	422	.000
Level of anxiety	.174	422	.000	.929	422	.000

a. Lilliefors Significance Correction

Source: Author.

4.3. Hypothesis Results

Below, I have presented the results of the hypotheses, which I have conducted using non-parametric tests such as Mann Whitney U-test, Kruskal Wallis test, Correlation / Spearman, General Regression, and Factor Analysis. These results are interpreted in relation to the research's objectives.

In the first analysis, I have presented the difference between male and female patients regarding their depressive expressions and anxiety levels, conducted through the Mann Whitney U-test. In the second analysis, also conducted using the Mann Whitney U-test, I have compared patients with chronic illnesses to those without chronic illnesses, measuring their opinions regarding depressive expressions and anxiety levels. I have also made a comparison between those who are employed and those who are not employed in relation to depressive expressions and anxiety levels, using the Kruskal Wallis test to test the marital status as a dependent variable in relation to depressive expressions and anxiety levels. Through the Spearman correlation, I measured the relationship between depression and anxiety, and I made some comparisons using Split File - Correlation to test when we have a stronger link between depression and anxiety.

In the context of multiple regression, the dependent variable is the level of anxiety, while depressive expressions are independent variables. Finally, I have presented the factor analysis, determining the factors that are important in the context of depressive expressions and anxiety levels.

## 5. Comparison between Male and Female Patients in Terms of Depressive Expressions and Anxiety Levels

Based on the results above, we can see that we have distinguished between male and female patients, measuring their depressive expressions and anxiety levels. According to the results, we observe that males have a higher average rating of 226.93, compared to females with an average of 201.19, in terms of depressive expressions. Additionally, concerning the anxiety level, males have a higher average rating of 213.15, compared to females who have an average of 210.40.

Mann Whitney U-test

### Ranks

	Gender	N	Mean Rank	Sum of Ranks
Depressive behaviors	Male	169	226.93	38351.50
	Female	253	201.19	50901.50
	Total	422		
Level of anxiety	Male	169	213.15	36022.50
	Female	253	210.40	53230.50
	Total	422		

Source: Author.

Based on the results above, we see that in depressive behaviors, the p-value is 0.033, which implies that males have a higher level of depressive expressions compared to females, and this difference is statistically significant. However, regarding the anxiety level, there is no significant difference.

### Test Statistics<sup>a</sup>

	Sjelljet depressive	Niveli i ankthit
Mann-Whitney U	18770.500	21099.500
Wilcoxon W	50901.500	53230.500
Z	-2.129	-.231
Asymp. Sig. (2-tailed)	.033	.817

a. Grouping Variable: Gender

Source: Author.

## 6. Comparison between Patients with Chronic Issues in the Past and Those Who Have Not, Regarding Depressive Behaviors and Anxiety Levels

According to the results below, we see that patients who did not have chronic issues in the past have a higher level of depressive behaviors, 217.39, while patients who had chronic issues in the past have a lower level of depressive behaviors. As for the level of anxiety, patients who had chronic issues in the past exhibit a higher level of anxiety, 273.07, much higher compared to patients who did not have chronic issues in the past, 161.56.

Mann Whitney U-test

### Ranks

	Cronic problems in the past	N	Mean Rank	Sum of Ranks
Depressive behaviors	Yes	189	204.24	38601.50
	No	233	217.39	50651.50
	Total	422		



Level of anxiety	Yes	189	273.07	51609.50
	No	233	161.56	37643.50
	Total	422		

According to the results above, a significant difference is observed in the level of anxiety, where patients who had chronic issues exhibit a statistically higher level of anxiety, 273.07, compared to those who did not have chronic issues, 161.56, with a p-value of 0.000.

#### Test Statistics<sup>a</sup>

	Sjelljet depressive	Niveli i ankthit
Mann-Whitney U	20646.500	10382.500
Wilcoxon W	38601.500	37643.500
Z	-1.104	-9.486
Asymp. Sig. (2-tailed)	.270	.000

a. Grouping Variable: Cronic problems in the past

### 7. Comparison between Employed and Unemployed Patients Regarding Depressive Symptoms and Anxiety Level

Below is the analysis of the difference between employed and unemployed patients regarding their depressive symptoms and anxiety levels. The results indicate that employed individuals have more depressive symptoms but lower levels of anxiety.]

#### Mann Whitney U-test

#### Ranks

	Employment status	N	Mean Rank	Sum of Ranks
Depressive behaviors	Yes	204	219.26	44729.50
	No	218	204.24	44523.50
	Total	422		
Level of anxiety	Yes	204	166.73	34012.50
	No	218	253.40	55240.50
	Total	422		

The results below indicate that a significant difference was observed in the level of anxiety, where unemployed patients showed a higher level of anxiety (253.40) compared to employed individuals (166.73), with a p-value of 0.000.

#### Test Statistics<sup>a</sup>

	Sjelljet depressive	Niveli i ankthit
Mann-Whitney U	20652.500	13102.500
Wilcoxon W	44523.500	34012.500
Z	-1.268	-7.409
Asymp. Sig. (2-tailed)	.205	.000

a. Grouping Variable: Employment status

#### The results of the correlation

Below is the correlation between depressive symptoms and the level of anxiety, where we can observe a positive correlation of .219\*\*, with a p-value of 0.000, indicating that the correlation is 21.9%.

#### Correlations

			Depressive behaviors	Level of anxiety
Spearman's rho	Depressive behaviors	Correlation Coefficient	1.000	
		Sig. (2-tailed)	.	
		N	422	
	Level of anxiety	Correlation Coefficient	.219**	1.000
		Sig. (2-tailed)	.000	.
		N	422	422

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

#### General Regression

The results presented below show the regression between depressive symptoms and anxiety levels. We can observe that the correlation is (.211) with a regression (.044) and a p-value (0.000), indicating that the level of anxiety is statistically dependent on the depressive symptoms of the patients.

#### Model Summary<sup>b</sup>

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate	Change Statistics				
					Square Change	F Change	df1	df2	Sig. F Change
1	.211 <sup>a</sup>	.044	.042	.73462	.044	19.547	1	420	.000

a. Predictors: (Constant), Depressive behaviors

b. Dependent Variable: Level of anxiety

Exactly, the coefficient B = .341, p-value = 0.000, and with this, we confirm that during the pandemic, depressive symptoms have influenced an increase in anxiety among patients.

#### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	1.178	.240			4.907	.000
	Depressive behaviors	.341	.077	.211		4.421	.000

a. Dependent Variable: Level of anxiety

#### Factor Analysis - Depressive Behavior Factors

Below is the factorial analysis, where p-value=0.000, confirming that the data is reliable, and we can proceed with interpreting the results.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.846
Bartlett's Test of Sphericity	Approx. Chi-Square	2627.140
	df	78
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.084	39.107	39.107	5.084	39.107	39.107	3.420	26.308	26.308
2	2.258	17.372	56.479	2.258	17.372	56.479	2.834	21.796	48.105
3	1.151	8.852	65.331	1.151	8.852	65.331	2.239	17.226	65.331
4	.854	6.568	71.899						
5	.793	6.097	77.996						
6	.581	4.473	82.469						
7	.459	3.529	85.999						
8	.422	3.249	89.247						
9	.396	3.050	92.297						
10	.303	2.333	94.630						
11	.270	2.078	96.708						
12	.243	1.869	98.576						
13	.185	1.424	100.000						

Extraction Method: Principal Component Analysis.

The factor analysis indicates that the provided variables are related to two main concepts: Psychological Well-being and Coping Mechanisms. The identified factors suggest potential associations between specific aspects of psychological well-being and coping strategies. Psychological well-being is linked to factors such as hormonal health (irregular periods and impotence), sexual desire changes, and sleep quality. On the other hand, coping mechanisms and emotional regulation are associated with changes in daily habits, withdrawal from social interactions, difficulty in staying focused, and maladaptive behaviors like excessive consumption of certain items. Based on the factor analysis, it is recommended to focus on promoting psychological well-being and adopting healthier coping strategies. Interventions aimed at enhancing emotional resilience and emotional regulation could be beneficial for individuals facing psychological challenges. Encouraging individuals to seek support for hormonal imbalances and sexual health concerns is also crucial. Implementing stress management techniques and healthier coping mechanisms can help individuals deal with overwhelming feelings and negative emotions in a more adaptive manner.

Additionally, efforts to improve sleep quality and regular sleep patterns may positively impact overall psychological well-being.

	Component		
	1	2	3
Do you have irregular periods (this question is for females) and impotence (for males under 65 years old)?	.832	.035	.107
Have you noticed an increase or decrease in your sexual desire?	.800	.115	.072
Have you experienced any changes (an increase) in your daily habits like alcohol, drug, or tobacco use as a way to calm down?	.790	.396	-.050
Do you like to withdraw from family, friends, and isolate yourself?	.698	.421	-.196
Do you feel nervous, irritated, or angry about trivial matters?	.696	.453	-.073
During work or leisure time, do you have difficulty staying focused and concentrating on tasks you need to complete?	.458	.348	.306
Do you have headaches or muscle tension?	.299	.828	-.031
How often do you feel overwhelmed with your life?	.155	.746	.047
Do you experience pain or tension in your stomach, muscles, chest, or head?	.367	.723	-.106
Do you fall asleep easily at night? (An average person falls asleep within 7-10 minutes)?	.019	-.247	.790
On average, do you sleep for 7-8 hours per day?	-.137	-.365	.754
How often are you able to stay focused on one issue?	.042	.187	.717
Do you consume items such as cakes, pastries, sweets, and drink excessively when you feel overwhelmed?	.117	.405	.602

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 5 iterations.

## 8. Discussions

The COVID-19 pandemic, declared by the World Health Organization as a global crisis, has necessitated the implementation of various measures to curb its spread. These measures, including quarantine and social distancing, have significantly impacted people's lives worldwide. Previous outbreaks of similar nature, such as SARS and MERS, have shown that such isolation measures can have adverse effects on mental health in the mid-to-long term. Studies have indicated that stress, anxiety, and depressive symptoms can escalate during quarantine periods, potentially leading to severe psychological disorders. Early research on the COVID-19 pandemic has also suggested emerging mental health issues, with studies focusing mainly on frontline healthcare workers. However, only a few studies have addressed the psychological consequences for the general public. Research on the Chinese population during the initial stage of the pandemic revealed a high prevalence of stress, anxiety, and depressive symptoms. Similarly, studies during the strictest confinement restrictions showed high rates of depression and anxiety symptoms among the general population.



The psychological impact of the pandemic extends beyond the physical health aspects, resulting in fear, anxiety, depression, and feelings of insecurity among individuals. The uncertainty surrounding the virus, coupled with constant media coverage, exacerbates psychological distress. Additionally, fear of the unknown nature of the virus can lead to mental disorders.

The interaction between the innate and adaptive immune systems and neurotransmitters plays a role in mood disorders, psychosis, and anxiety disorders, adding to the psychological stress of enduring a potentially life-threatening disease and its associated inflammation. To address the mental health challenges during the COVID-19 pandemic, it is essential for governments to provide reliable information and assistance, integrate mental health interventions into emergency plans, and make mental health treatment accessible and affordable on a global scale. Telepsychology services, such as videoconferencing and telephone-based psychotherapy, have been widely adopted and should continue to be promoted, especially during acute waves of the pandemic.

Psychologists should assess the pandemic's impact on their patients' mental health, offer problem-solving therapy, and employ evidence-based approaches to alleviate depression and anxiety symptoms. Encouraging social interactions while maintaining physical distance and recommending anxiety-reducing strategies can help minimize the negative effects of the pandemic. Assisting individuals in optimizing remote work settings, establishing routines, and reorganizing roles at home are also vital for coping with the changes brought on by the pandemic.

In conclusion, the COVID-19 pandemic has not only posed physical health risks but also significant mental health challenges. The global population faces increased stress, anxiety, and depression, making it crucial for mental health support and interventions to be prioritized during these trying times. Addressing mental health needs is essential for building resilience and ensuring the well-being of individuals and communities worldwide. The COVID-19 pandemic has had far-reaching consequences beyond its physical health impact, with significant effects on individuals' mental well-being. Studies have shown a high prevalence of stress, anxiety, and depressive symptoms during quarantine periods, and the uncertainty surrounding the virus has contributed to psychological distress among the general population. The interaction between the immune system and neurotransmitters plays a role in psychiatric disorders, further adding to the psychological stress of facing a potentially life-threatening disease. As governments respond to the pandemic, it is crucial for them to prioritize mental health interventions, provide reliable information and support, and make mental health treatment accessible to all. To address the mental health challenges arising from the COVID-19 pandemic, governments should integrate mental health interventions into their emergency plans and ensure adequate access to mental health services. Telepsychology services, such as videoconferencing and telephone-based therapy, should be widely promoted, especially during acute waves of the pandemic. Psychologists and healthcare professionals should assess the impact of the pandemic on their patients' mental health and offer evidence-based interventions to alleviate depression and anxiety symptoms. Encouraging social interactions while maintaining physical distance and recommending anxiety-reducing strategies can help individuals cope with the effects of the pandemic. Furthermore, assisting individuals in optimizing remote work settings, establishing routines, and reorganizing roles at home can promote a sense of control and stability during this challenging time. By prioritizing mental health support and interventions, societies can better build resilience and ensure the well-being of their populations throughout the global crisis.

## 9. Conclusions

The COVID-19 pandemic has had a profound impact on individuals worldwide, not only in terms of physical health but also concerning mental well-being. Among various mental health issues, depressive and anxiety behaviors have emerged as significant concerns among patients who have experienced COVID-19. The psychological consequences of the virus are a crucial aspect that needs to be understood and addressed by healthcare professionals and policymakers. This study aims to explore the effects of depressive and anxiety behaviors in patients aged 30-75+ who have previously contracted COVID-19 to provide valuable insights for targeted interventions and support systems to mitigate the long-term impact on mental health. Based on the objectives of this research study, it is essential to conduct a comprehensive investigation into the prevalence and severity of depressive and anxiety symptoms among COVID-19 survivors aged 30-75+. Healthcare practitioners and mental health professionals should be actively involved in the research to ensure a thorough understanding

of the psychological dimensions of the virus. By using validated measurement scales, the severity of emotional distress experienced by the participants can be accurately quantified. Additionally, exploring potential links between COVID-19 severity and mental well-being can provide valuable information to tailor interventions for individuals based on their physical health outcomes.

Understanding the impact of depressive and anxiety behaviors on the overall quality of life in COVID-19 survivors is crucial to developing interventions that address daily functioning, relationships, and general well-being. Identifying risk factors associated with the development of these psychological symptoms will aid in predicting and preventing adverse mental health outcomes. Furthermore, investigating the persistence of depressive and anxiety symptoms beyond the acute phase of COVID-19 can help in developing long-term mental health support strategies for survivors. The findings of this study can be used to inform the development of mental health interventions and support systems that effectively help individuals cope with the aftermath of COVID-19. By prioritizing mental well-being and providing targeted support to survivors, healthcare systems and policymakers can play a critical role in mitigating the long-term psychological impact of the pandemic.

Based on the conclusions of the research study on the impact of depressive and anxiety behaviors in COVID-19 survivors aged 30-75+, here are some recommendations:

- **Comprehensive Investigation:** Healthcare professionals, researchers, and policymakers should collaborate to conduct a comprehensive investigation into the prevalence and severity of depressive and anxiety symptoms among COVID-19 survivors in the specified age group. This research should employ validated measurement scales to accurately quantify emotional distress.
- **Involvement of Healthcare Practitioners:** Healthcare practitioners and mental health professionals should actively participate in the research process. Their insights and expertise are essential for gaining a thorough understanding of the psychological dimensions of the virus.
- **Exploration of Links with COVID-19 Severity:** The study should explore potential links between the severity of COVID-19 symptoms and mental well-being. This information can help tailor interventions to individuals based on their physical health outcomes.
- **Impact on Daily Functioning:** The research should prioritize understanding how depressive and anxiety behaviors affect the overall quality of life in COVID-19 survivors. This includes assessing the impact on daily functioning, relationships, and general well-being.
- **Identifying Risk Factors:** Researchers should focus on identifying risk factors associated with the development of depressive and anxiety symptoms in COVID-19 survivors. This information will be valuable for predicting and preventing adverse mental health outcomes.
- **Long-Term Mental Health Support:** Investigate the persistence of depressive and anxiety symptoms beyond the acute phase of COVID-19. This will aid in the development of long-term mental health support strategies for survivors.
- **Informing Interventions:** The findings of this study should be used to inform the development of mental health interventions and support systems that effectively help individuals cope with the aftermath of COVID-19. These interventions should be tailored to the specific needs of survivors.
- **Policy and Healthcare System Prioritization:** Healthcare systems and policymakers should prioritize mental well-being and allocate resources to provide targeted support for COVID-19 survivors. This proactive approach can play a critical role in mitigating the long-term psychological impact of the pandemic.
- **Interdisciplinary Collaboration:** Encourage interdisciplinary collaboration among healthcare providers, mental health professionals, researchers, and policymakers to ensure a holistic approach to addressing the mental health consequences of COVID-19.
- **Public Awareness and Education:** Launch public awareness campaigns to educate both COVID-19 survivors and the general population about the potential long-term mental health effects of the virus. Reducing stigma and increasing knowledge can encourage individuals to seek help when needed.
- **By implementing these recommendations,** healthcare systems and policymakers can work together to better understand and address the mental health challenges faced by COVID-19 survivors, ultimately improving their overall well-being and quality of life.

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