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# Quality of Life among Patients with and without COVID-19 Attending Health Care Facilities at Janakpurdham Sub-metropolitan: A Retrospective Cohort Study

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**Abstract:**

**Introduction:** QoL is an assessment of how the individual health is affected over time by a disease, disability or disorder. COVID-19 is a disease caused by a new strain of coronavirus started from 2019 at Wuhan, China and spread all over the world including Nepal on 23 January after which lockdown was announced by Government of Nepal. Every disease has their unique way to affect QoL. The objectives of this study were to assess the quality of life among patient with and without COVID-19 and find the association of QoL score along with patient demographic variables.

**Materials and Methods:** A quantitative retrospective cohort study was adopted and total 200 participants were selected through purposive sampling technique where 100/100 were patient without COVID-19 and with COVID-19. All the patients were selected from the hospitals of Madhesh Province. The data were gathered by using SF-36 Scale and then data were analyzed and interpreted.

**Results:** The result revealed that in patient without COVID-19 more than one third 84% of patients were having moderate level of QoL and only 3% were having good level of QoL. Where as in patient with COVID-19 only 8% were having good level of QoL. Among the patient without covid-19, only age was significantly associated and in the patient with covid-19 presence of medical condition was associated.

**Conclusions:** The effect of acute disease, chronic disease or any infectious disease has impact on Quality of Life. Thus, all medical facilities need to be aware of it and start using methods that can improve each patient's quality of life.

**Keywords**

COVID-19, Health care facilities, Patient, Quality of Life



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## INTRODUCTION

Quality of life (QoL) refers to “an individual’s perception on his/her life in the context of the culture and value system in which they live, and in relation to their goals, expectations, standards and concerns.” QoL is an assessment of how the individual health is affected over time by a disease, disability or disorder [1]. COVID-19 is a disease caused by a new strain of coronavirus started from 2019 at Wuhan, China and spread all over the world including Nepal on 23 January after which lockdown was announced by Government of Nepal. Every disease has their unique way to affect QoL where acute diseases affect for short time and chronic disease effect for long time. The WHO has defined as “the quality of life as people’s perception of their position in life in terms of culture, the value system in which they live, and their goals, expectations, standards, and priorities. It also defines quality of life as an individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. Quality of life is a concept which aims to capture the well-being, whether of a population or individual, regarding both positive and negative elements within the entirety of their existence at a specific point in time [2]. Previous literatures have suggested that by providing directed care towards physical, psychological, strengthens family relationship and financial independence improve QoL among elderly [3]. Another similar literature has suggested that even menopause effect QoL [4]. But up-to researcher best knowledge there is no studies related to QoL among the COVID-19 patients in Madhesh Province till now. And more over this is an important study to conduct as health care providers will come to know those affected areas of QoL which can be utilize while providing care to improve quality of life. Therefore, this study was carried out to compare quality of life among patients with and without COVID-19 attending health care facilities at Janakpurdham Sub-metropolitan.

## MATERIALS AND METHODS

### Study Design and setting

A retrospective research design was adopted where the sample was collected from three different hospitals namely Janaki Health Care & Teaching Hospital, Janaki Medical College and Janaki Academy Hospital. These healthcare facilities likely treat a diverse range of patients, including both patients with and without COVID-19, providing a comprehensive case or studying and comparing quality of life across medical conditions. The data was collected from February to March 2024.

**Patients, sample size and sampling procedure.** The sample size was calculated by using single population proportion formula ( $n = Z_{\alpha/2}^2 p(1-p)/d^2$ ) which has given sample size as 100 on each arm [5]. Sample was

selected by non-probability purposive sampling technique. The COVID-19 cases were selected from the hospital’s medical report which had details of the COVID-19 patient and patient who all were willing to participate. Similarly for patient without COVID-19 was selected from the same hospitals who were not affected by COVID-19, but having any type of the chronic diseases as like DM, HTN, Coronary artery diseases, etc. and who all were available at that time of data collection and were willing to participate. The exclusion criteria for both patients with COVID-19 and without COVID-19 were critically ill patients.

### Data collection procedure

The data was collected from patient with and without COVID-19. That patient list was obtained from those tertiary health care facilities which were providing care during the outbreak of COVID-19. Then, the researcher visited those patients and by purposive sampling technique all the samples will be selected. The researcher conducted interview from each patient and data was collected from COVID patients. Similarly, those patients without COVID were selected from the general population and by applying purposive sampling technique all the sample was be collected. For the data collection researcher has used SF-36 Scale which has 36 items of mainly seven different domains; general health, limitations of activities, physical health problems, emotional health problems, social activates, pain and mental health and vitality physical health problems.

### Working definition (Operational Definition)

**QoL:** It refers to respondent’s level of satisfaction with their physical functioning, social functioning, role functioning, mental health and general health perceptions. **COVID-19:** It refers to a virus which causes infection to healthy individuals. **Non-COVID:** It refers to persons who all are having some of the chronic diseases like Diabetics, Hypertension, Heart Diseases, etc. **Co-morbidity:** It refers to those people with some other chronic diseases. **Health Care Facilities:** It refers to those areas which has been provided care to the patients either affected with COVID or not. **Reliability and Validity** The overall Cronbach’s a coefficient of the SF-36 questionnaire was 0.791, while the respective Cronbach’s alpha coefficients for each of the seven dimensions were >0.70, expect where the social function dimension was 0.631. Therefore, it is reliable and valid [6].

### Data management and statistical Consideration

Again, researcher conducted the interview and data was entered into MS-Excel and then analyzed and interpreted by using SPSS software. The tool used was SF-36 and scoring is ranges from 0-5 or 5-0 as this tool consists of positive as well as negative questions so scoring point also varies according to that.

**Ethical Consideration**

The ethical clearance was obtained from the Janaki Medical College Institutional Review Committee (IRC-JMC) having reference number 012/IRC-RMC/2024/006. Privacy of the participants has maintained. There was no conflict of interest.

**RESULTS**

Table 1 shows demographic characteristics of patients with and without COVID-19. Among cases without

of threat followed by moderate level 37% and low level 22%. Further, among patient with COVID -19, 28% of the patients belongs to the age group of 20-30, 45% belong 30-40, 20% in between the age group of 40-50 and 7 % above 50 years of age. Similarly, 64% of patients were married, 52% unmarried, and 11% were separated. Among these participants 37% of patients were illiterate and 63% literate. Likewise in the case of earning 56% were earning between 20000-30000, 24% between

**Table 1 | Demographic characteristics of participants with and without COVID-19**

Characteristics	Without COVID-19 (n=100).		With COVID-19 (n=100)	
	Frequency	Percentage	Frequency	Percentage
<b>Age in Years</b>				
20-30	6	6	28	28
30-40	35	35	45	45
40-50	25	25	20	20
Above 50	34	34	7	7
<b>Gender</b>				
Male	47	47	48	48
Female	53	53	52	52
<b>Marital Status</b>				
Married	72	72	64	64
Unmarried	17	17	25	25
Widow	10	10	0	0
Separated	1	1	11	11
<b>Educational Status</b>				
Illiterate	52	52	37	37
Literate	48	48	63	63
<b>Religion</b>				
Hindu	75	75	87	87
Muslim	17	17	11	11
Christian	8	8	2	2
<b>Monthly Salary</b>				
20000-30000	55	55	56	56
30000-40000	14	14	24	24
40000-50000	18	18	15	15
above 50000	13	13	5	5
<b>Perceived Covid-19 Threat</b>				
High	41	41	32	32
Moderate	37	37	30	30
Low	22	22	38	38

COVID-19, few (6%) belongs to the age group of 20-30 years, 35% belongs to age group of 30-40, 25% to age group of 40-50 and 34% above 50 years. Likewise 47 % of patients was male and 53% were female. Then 72% of patients were married, 17% Unmarried, 10% widow and 1% were separated. In case of educational status 52% of patient was illiterate, and 48% were literate. Majority of patients 55% of patients were earning between 20000-30000, 14% between 30000-40000, 18% between 40000-50000 and 13% above 50000. While looking to the perceived COVID-19 threat, 41% were having high level

30000-40000, 15% between 40000-50000 and 5% above 50000. While talking about the perceived threat of

**Table 2 | Comparison study of patient with and without Covid-19**

Level of QOL	Without COVID-19 (n=100)		With COVID-19 (n=100)	
	Frequency	%	Frequency	%
<b>Poor</b>	13	13.0	13	13.0
<b>Moderate</b>	84	84.0	80	80.0
<b>Good</b>	3	3.0	8	8.0

**Table 3 | Association between Quality-of-Life of patients with and without COVID-19 and demographic variables**

Independent variables	Without COVID-19 (n=100)				With COVID-19 (n=100)			
	Poor (%)	Moderate (%)	Good (%)	p-value	Poor (%)	Moderate (%)	Good (%)	p-value
<b>Gender</b>								
Male	7(14.9)	38(80.9)	2(4.3)	0.664	9(18.8)	34(70.8)	5(10.4)	0.145
Female	6(11.3)	46(86.8)	1(1.9)		4(7.7)	45(86.5)	3(5.8)	
<b>Age</b>								
20-30	1(16.7)	5(83.3)	0(0.0)	0.139	3(10.7)	24(85.7)	1(6.7)	0.316
30-40	5(14.3)	27(77.1)	3(8.6)		8(17.8)	34(75.6)	3(8.6)	
40-50	1(4.0)	24(96.0)	0(0.0)		1(5.0)	15(75.0)	4(20.0)	
50 and above	6(17.6)	28(82.4)	0(0.0)		1(14.3)	6(85.7)	0(0.0)	
<b>Education</b>								
Illiterate	8(15.4)	43(82.7)	1(1.9)	0.629	4(10.8)	29(78.4)	4(10.8)	0.675
Literate	5(10.4)	41(85.4)	2(4.2)		9(14.3)	50(79.4)	4(6.3)	
<b>Marital status</b>								
Married	10(13.9)	61(84.7)	1(1.4)	0.254	9(14.1)	50(78.1)	5(7.8)	0.199
Unmarried	3(17.6)	12(70.6)	2(11.8)		4(16.0)	18(72.0)	3(12.0)	
Widow	0(0.0)	10(100.0)	0(0.0)		0(0.0)	11(100.0)	0(0.0)	
Separated	0(0.0)	10(100.0)	0(0.0)		9(14.1)	50(78.1)	5(7.8)	
<b>Religion</b>								
Hindu	8(10.7)	64(85.3)	3(4.0)	0.539	12(13.8)	68(78.2)	7(8.0)	0.884
Muslim	3(17.6)	14(82.4)	0(0.0)		1(9.1)	9(81.8)	1(9.1)	
Christian	2(25.0)	6(75.0)	9(0.0)		0(0.0)	2(100.0)	0(0.0)	
<b>Salary (NRs.)</b>								
20000-30000	3(5.5)	49(89.1)	3(5.5)	0.062	7(12.5)	43(76.8)	6(10.7)	0.076
30000-40000	5(33.3)	10(66.7)	0(0.0)		1(4.2)	22(91.7)	1(4.2)	
40000-50000	2(11.1)	16(88.9)	0(0.0)		5(33.3)	19(66.7)	0(0.0)	
50000 and above	3(25.0)	9(75.0)	0(0.0)		0(0.0)	4(80.0)	1(20.0)	
<b>Medical condition</b>								
Suffering	13(13.1)	84(84.8)	2(2.1)	0.025	2(66.7)	1(33.3)	0(0.0)	0.0801
Not suffering	0(0.0)	0(0.0)	1(100.0)		11(11.3)	78(80.4)	8(8.2)	
<b>Perceived Covid 19 threat</b>								
High	7(17.1)	32(78.0)	2(4.9)	0.342	4(12.9)	23(74.2)	4(12.9)	0.3421
Moderate	3(8.1)	34(91.9)	0(0.0)		4(13.3)	24(80.0)	2(6.7)	
Low	3(13.6)	18(81.8)	1(4.5)		5(12.8)	32(82.1)	2(5.1)	

Covid-19, 32% had High threats, 30% had Moderate and 38 % had low threat. Table 2 shows level of quality of life of patient with and without Covid-19. It revealed that among the patient without Covid-19 only 3% were having good quality of life and majority 84% of them were having moderate level and 13% were having poor level. Similarly, among the patient with Covid-19, majority 80% were having moderate level of quality of life which is followed by 13% poor level and 8% good level.

Table 3 shows the association between the quality of life of patient with and without COVID-19 with their socio-demographic characteristics. It reveals that in patients without COVID-19, quality of life is significantly associated only with medical conditions, with no significant associations found for other demographic variables in both groups.

## DISCUSSION

Patients without COVID-19 are predominantly aged 30-40, mostly married, with a significant portion being illiterate and earning between 20,000-30,000, while those with COVID-19 are primarily aged 30-40 as well, with a higher literacy rate, similar income distribution, and varying perceived threat levels of the virus. This study is supported by the study which was conducted to explore the challenges of integrated home-based palliative care services for cancer during covid-19 where majority of participants 56% were female followed by 44% male [7]. This result is also supported by a study which was conducted on general population about impact of Covid-19 and it has revealed most of the participants' 52.2% age group of 35-64 followed by 41.7% of 18-34 years and only 6% of older. Similarly, 46.7% were married and 46.7% were unmarried.

The 41.2% participants were university holders and 36.7% were high school. And 17.5% were having medical conditions [8]. Similar result has been seen in which the study was conducted to assess risk of Mortality for Proximal Femoral Fracture in Patients with and without the study was conducted to assess risk of Mortality for Proximal Femoral Fracture in Patients with and without COVID-19. The data has shown as majority 70.36% of participants were Female and 29.64% were Male. Like that 35.92% were married participants and 64.08% were unmarried [9]. This study was also supported by a study to evaluate HRQoL and related factors in Coronavirus disease 2019 (COVID-19) patients. This study was conducted in Birjand, Iran. A total of 420 COVID-19 patients who had been discharged from hospital were selected using a systematic sampling. The EuroQol 5-dimensional-5 levels (EQ-5D-5L) questionnaire along with medical records of the patients were used to gather the data. The mean score for EQ-5D-5L in COVID-19 patients was low in this study. Some of the factors, especially aging and having diabetes, should be considered in the aftercare of patients to improve their HRQoL [10]. This study was also supported by a study to compare Health-Related Quality of Life for People With Acute and Chronic Illnesses During the COVID-19 Pandemic. The study was conducted by online survey among 3 groups from the electronic medical record and invited them to complete the SF-36 survey. Analysis of variance and post hoc testing was used for univariate analyses followed by linear regression. One hundred thirty-two adults completed the survey. The groups differed least for physical functioning and most for emotional/mental health. The hospitalized group had the greatest limitation in role due to emotional issues. All groups had significantly lower social functioning scores than the general population. Linear regression showed lower HRQoL domain score in role limitations due to emotional issues adjusted for age, race, and gender for the hospitalized group. SF-36 scores show the decrease in HRQoL that outpatient adults have suffered, mostly in the emotional domain, regardless of illness group during the COVID-19 pandemic [11].

This study was also supported by a study to evaluate health-related quality of life of Covid-19 patients: a hospital-based study in South Central Ethiopia. An employed a facility-based, cross-sectional study design and conducted the study at the Bokoji Hospital Covid-19 treatment centre. A structured questionnaire and the EQ-5D-3L scale were used to collect the data for analysis. The HRQoL results measured by the EQ-5D-3L tool were converted to a health state utility (HSU) using the Zimbabwe tariff. Covid-19 substantially impaired the HRQoL of patients in Ethiopia, especially among elderly patients and those with comorbidity. Therefore, clinical follow-up and psychological treatment should be

encouraged for these groups. Moreover, the health utility values from this study can be used to evaluate quality adjusted life years for future cost-effectiveness analyses of prevention and treatment interventions against Covid-19 [12]. *In context of quality-of-life patients with and without Covid-19*, patients without COVID-19, only 3% have a good quality of life, 84% have a moderate quality of life, and 13% have a poor quality of life, while among patients with COVID-19, 80% report a moderate quality of life, 13% a poor quality, and 8% a good quality. This result is supported by the study where most of the participants have shown poor HRQoL among 4 domains of scale and the score was 54.48. Similarly finding have been shown for the study which was conducted at Italy where QoL was lower, high level of stress, anxiety and depression have seen [13]. The study was conducted at Bani Ebaid City for 7 months where poor quality of life has been seen [8]. Another study was conducted at Portugal where Covid-19 patient was under quarantine. This study has revealed that participants were having higher level of anxiety and lower level of HRQoL and participants with more anxiety tended to have a lower HRQoL [14]. This result is lined with the one of the cross-sectional studies conducted at Shahid Sadoughi hospital. The result has shown low quality of life as well as the factors like aging, and having diabetics should be considered to improve HRQoL [15].

Our study findings reveal that in patients without COVID-19, quality of life is significantly associated only with medical conditions, while no significant associations are found for other demographic variables in either group. The study was conducted where QoL was associated with monthly income, educational level, and marital status [8]. While the data was analyzed it shows quality of life is significantly associated with medical condition and other variables are not significantly associated. The study which was conducted where beyond age, educational attainments, educational status, gender were considered as important predictors of long COVID-19 associated with QoL. Likewise, 86% and 93% of the adjusted association between full time employment and COVID-19 QoL in UK and Russia respectively has been found and more on 77% were associated between sex and COVID-19 QoL in Norway and 73% in UK [16].

This study was also supported by the association between demographic variables, psychosocial health, quality of life, and happiness in the context of COVID. Cross-sectional surveys were conducted across four countries: Norway, USA, UK, and Australia among 1649 individuals. The psychosocial health variables made the highest variance in QoL and happiness and poorer psychosocial health had a mediating role between civil status and QoL and between age and happiness outcomes [17].

## CONCLUSION

The effect of acute disease, chronic disease or any infectious disease has impact on Quality of Life. Therefore, all the health care facilities should know

about it and then initiate the techniques which can enhance each patient quality of life.

## ADDITIONAL INFORMATION AND DECLARATIONS

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**Author Contributions:** Concept and design: LKS and JN; data collection, analysis: LKS. Reviewed and writes up of final manuscript: LKS and JN. Both authors contributed to all analysis, interpretation of results, literature review, and revision of the manuscripts and have read and agreed with the contents of the final manuscript.

**Data Availability:** Data will be available upon request to corresponding authors after valid reason.

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