

# OUTCOMES OF HOME ISOLATED COVID-19 PATIENTS AND RISK FACTORS ASSOCIATED WITH THE ADVERSE OUTCOMES: LONGITUDINAL RETROSPECTIVE STUDY IN SHIMOGA, KARNATAKA

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## RESUMO

**Title:** Outcomes Of Home Isolated COVID-19 Patients And Risk Factors Associated With The Adverse Outcomes: Longitudinal Retrospective Study In Shimoga, Karnataka

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## SUMMARY

**Keywords:** COVID 19, Risk factor, home isolation, Hospitalization rate

## background

COVID-19 is a current global pandemic by the newly discovered novel SARS-COV-2. According to in comparison to those who have recovered, patients who have died thus far were older, more likely to be male, and to have comorbidity such as hypertension, diabetes, cardiovascular disease, or lung disease thus needing variousting the assessment of variables in demographic groups or contexts. The study aims to assess the association between COVID-19 comorbidities and outcomes such as hospitalization, recovery, and mortality. Data of confirmed COVID cases with definitive outcomes were retrieved retrospectively from McGann hospital's triage.

## AIMS

- To estimate the proportion of different outcomes such as recovery, hospitalization, and mortality among home isolated covid-19 patients
- To estimate the proportion and to determine various risk factors associated with COVID-19 adverse outcome

## METHODOLOGY:

The study was carried out in Shimoga Institute of Medical Sciences, Shivamogga, Karnataka.

**STUDY DESIGN** : Longitudinal Retrospective study.

**STUDY PERIOD** : April 20th-June 20th, 2021.

**STUDY POPULATION** : Home isolated COVID-19 patients

**SAMPLE SIZE** : 168

**METHOD** : Data was collected by telephonic Interview

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## RESULTS:

A total of 168 people participated in this study, with 93 men (55.3%) and 75 women (44.7%). More than 90% of patients in the Home Isolated Covid 19 patients recovered, 10.75 percent required hospitalization, and 5% died. 15 out of 18 people who needed were older and at least one comorbidity. One third of the patients (37%) had one or more comorbidities. Diabetes and Hypertension were the most common.

## DISCUSSION:

The study done on 168 patients revealed the recovery rate to be 91.07% and mortality rate as 4.765, which is higher than the recovery and fatality rate of the country at the time of writing.<sup>1,2</sup> The present study showed that the mortality rate in younger patients was less than the older patients, this was consistent with the findings of global evidence.<sup>3,4</sup> By using chi-square test and p-value <0.00001 in our study, it was revealed that older people were at a greater risk of adverse outcomes such as hospitalisation and death. Our studies also showed that men were more severely infected than women, consistent with global evidence.<sup>5</sup> Ten out of the eighteen patients who were hospitalised were men. This finding was however, inconsistent with the findings of the country which showed that the mortality rate was higher among women, as opposed to our study which showed that it was equal among men and women. The fatality rate among women is 3.07% as opposed to male being 2.62%.<sup>6</sup> This data is surprising since the global data revealed that several factors including sex hormones and high expression of coronavirus receptors (ACE 2) in men and also life style, such as higher levels of smoking and drinking among men as compared to women placed men at higher risk of complications and death.<sup>7</sup>

Multiple comorbidities are related to poorer outcomes. Hospitalised non survivors (33.33%) had comorbidities. This was also shown in previous studies.<sup>8</sup> In our study the most common comorbidities are diabetes, hypertension, which are similar to findings of previous studies.<sup>8,9</sup> It was observed in a cohort study of 7337 COVID-19 patients with and without type 2 diabetes that those with type 2 diabetes required more interventions during their hospital stay than those who were not diabetic.<sup>10</sup> The study also showed that patients with uncontrolled blood glucose level had higher fatality rate.<sup>10</sup> The poor outcomes among diabetic patients infected with covid may be due to pulmonary dysfunction involving lung volume, pulmonary diffusing capacity, control of ventilation, bronchomotor tone, and noradrenergic bronchial innervation.<sup>11</sup> Additionally, a dysregulated immune response caused by diabetes is responsible for the poor outcomes.<sup>12</sup>

According to new research published in the European Heart Journal, people with high blood pressure had a two-fold greater risk of dying from the coronavirus COVID-19 compared to patients without high blood pressure.<sup>13</sup> Previous studies with univariate analysis studies reported that hypertension was associated with mortality, but this association disappeared with multivariate analysis.<sup>14,15</sup> Presently, our studies showed that hypertension was independently associated with increased hospitalization and mortality.

CVD was outlined as a risk factor for poorer outcomes, from the first reports.<sup>16-18</sup> Our studies revealed that patients with cvd had higher risk of hospitalisation and death once they got covid. A report from 99 patients admitted in Northern Italy hospitals, with only 53 patients with CVD, found higher mortality rates in an univariate analysis.<sup>19</sup>

Larger report with 522 patients from 2 Spanish hospitals described an independent association of CVD only with the combined end-point of death or respiratory insufficiency.<sup>20</sup> In patients with SARS-CoV-2 infection, underlying CVD can aggravate the pneumonia and increase the severity of symptoms.<sup>21</sup>

Among other comorbidities COPD was also linked with higher mortality. meta-analysis of multiple studies in China found that there was a four-fold increase in mortality in patients with preexisting COPD that were diagnosed with COVID-19.<sup>22,23</sup> We reported a low prevalence of COPD patients in COVID-19 case series compared to the latest COPD prevalence rate in China, which was 13.6% (95% CI 12.0-15.2) and the global prevalence of COPD (9-10%).<sup>24,25</sup> The prevalence of COPD in our subjects was low, however, the hospitalization rate and fatality rate was high.

Chronic kidney disease appears to be associated with an increased risk of serious COVID-19 infection,<sup>26</sup> however, our dataset didn't have patients with ckd.

Another risk factor associated is obesity. A study of COVID-19 cases suggests that risks of hospitalization, intensive care unit admission, invasive mechanical ventilation, and death are higher with increasing BMI.<sup>27</sup>

## CONCLUSION:

Our systematic overview of the results to determine the relationship between COVID-19 infection, and outcomes such as hospitalization, death, and recovery shows that older age, male gender, and comorbidities have higher hospitalization rates. Comorbidities and older age were associated with a higher risk of death in hospitalized patients. Even though recovery rate is very high, a significant (10.75%) home isolated patients need hospital admission in the disease course. So, the proper monitoring of home isolated patients can save the lives of many COVID 19 patients.

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