

Exploring the Impact of the COVID-19 Pandemic on the Blood Scarcity in the Selected Hospital Blood Bank in Metro Manila: A Mixed Methods Study

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Background:

Due to COVID-19, blood shortage transpired which hampered normal relations between blood bank services thus placing a negative impact on the normal blood system operations. This study looks into how it affected the hospital blood bank in regards to shortage, grasp its key causes and how these blood banks were able to address them.

Objectives

This study aims to **identify the impact of the COVID-19 pandemic in a private tertiary hospital** in NCR, including **challenges to blood supply and demand**; **Evaluate the preparedness and response** of the hospital to blood scarcity and; **determine strategies** for maintaining blood supplies and addressing blood scarcity.

Methodology:

Study Setting and Population

7 participants from the Private Tertiary Hospital in Metro Manila

Research Design

Mixed method research design

- Explanatory-Sequential (Explanatory Quantitative-Qualitative)

Data Measure

Quantitative Method

- Survey (Likert scale questions)

Qualitative Method

- 15-20-minute interview

Data Analysis

Statistical Package for the Social Sciences; Thematic Analysis - MAXQDA

Survey

- Quantitative method
- Likert scale questions derived from multiple publications with similar objectives
- Survey components:
 - 1st part: Demographic profile
 - 2nd part: Impact
 - 3rd part: Preparedness
 - 4th part: Response
- Cronbach alpha: 0.824 (valid)
- Disseminated through Google Forms to be answered by the Blood Bank Personnel

Interview

- Qualitative method
- Constructed based on the survey questions and adapted from multiple publications
- Answered by the Blood Bank Head

Results:

71.4%

of the respondents strongly agreed that there was blood scarcity in the blood bank.

| Relationship to Blood Scarcity Significant p value =>0.05 | Independent Variables | Test Statistic | P-value |
|---|-----------------------|----------------|---------|
| | Preparedness | .363 | 0.605 |
| | Response | -.230 | 0.830 |

Combined Interpretation of Results (Survey and Interview).

Preparedness and Blood Scarcity

Weak positive correlation was determined. There is no significant relationship found.

Response and Blood Scarcity

Weak correlation was determined. There is no significant relationship found.

results cont.

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .383 ^a | .147 | -.422 | .54944 |

a. Predictors: (Constant), RESPONSE, PREPAREDNESS

b. Dependent Variable: SCARCITY

Model Summary (Survey).

The model summary table determines the combined effect of preparedness and response as a whole on scarcity. There is a weak positive correlation between the set of predictors (response and preparedness) and the dependent variable, scarcity $R(4) = .383$. Around 15% ($R^2 = .147$) of the variation in the blood scarcity rating is explained by the set of predictors: preparedness and response.

Discussion:

- Respondents absolutely agree that blood is scarce during the pandemic.
- There is no relationship between the said variables. The null hypothesis is not rejected.
- It is difficult to prove and demonstrate a relationship between the variables (scarcity, preparedness and response) due to low sample size.
- The operational difficulties highlighted by the informants focused on the issues of logistics and adequate human resources.

Conclusion:

Overall, there was indeed blood scarcity in the selected private tertiary hospital brought about by the pandemic. Furthermore, the data provided is not representative of the impact of blood scarcity in all blood banks within Metro Manila due to the limitation in the sample size.

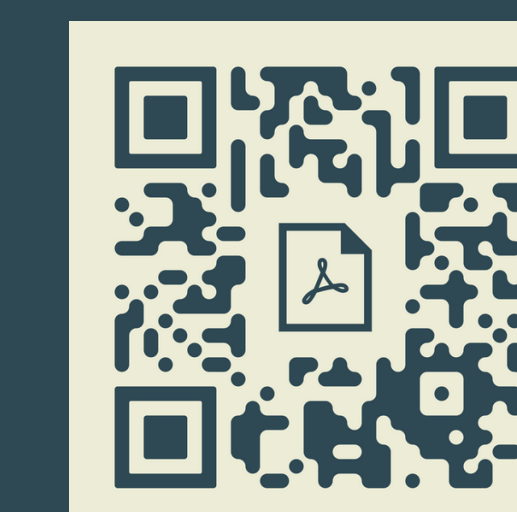


Thematic analysis for the different categories included in the interview proper.

As far as the entire population of Blood Banks are concerned, there is no relationship between the said variables. In this case, **the null hypothesis is not rejected (H0: The preparedness and response of the selected blood bank in Metro Manila to blood scarcity during the COVID-19 pandemic has no significant impact on their ability to maintain blood supplies).**

| Themes | Categories | Example of Codes Included Per Category |
|-----------------------------------|------------------------------------|--|
| Operational difficulties | Human resource | Adjustments and options made by the hospital facility to limit the number of workers while still maintaining operation |
| Blood supply and routine services | Demand for blood/components | Stigma and fear of acquiring COVID-19 in the hospital |
| | Blood shortages | |
| Institutional contingency plan | Non priority of elective surgeries | Suspension of elective surgery |
| | Donor network | Re-establishing contact from previous donors |
| Government response | Ease of logistics | Clearance and fast passes for transportation |
| Recommendation for the future | | Development of detailed strategies for subsequent circumstances in order to maximize resources |

References:



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