

Adult Congenital Heart Disease and COVID-19: The Patient’s Perspective

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Background

- Adults with congenital heart disease (CHD) is a population considered at increased risk for adverse outcomes associated with COVID-19.
- Little is known about the experiences and attitudes of this patient population during the pandemic.

Objectives

- Describe patient experiences including vaccination practice and mood during the pandemic.
- Query patients’ self-perception of risk for severe illness with COVID-19.
- Compare adult CHD patients who have been vaccinated versus those who have not.

References

- Ahorsu, D. K. et al. Int. J. Ment. Health Addict. 2020; 20(3): 1537-1545.
- Snaith, R. P., & Zigmond, A. S. British Medical Journal. 1986; 292(6516): 344

Methods

- Patients age ≥ 18 years with CHD were prospectively enrolled from the outpatient clinic of the Philadelphia Adult Congenital Heart Center between February – June 2022.
- Clinical and demographic data were collected through retrospective chart review.

Measures

- Patients were queried about prior COVID-19 infection, vaccination status, self-perceived risk for severe illness and surveyed about fear of COVID as well as anxiety and depression.
- The *Fear of COVID Scale* (FCV-19S)¹ is a 7-item measure each on a 5-point scale developed to assess fear of COVID-19 among individuals and assist healthcare providers in designing appropriate programs that would address the fear. Scores range from 7-35, with a score of 7-22 considered “low fear” and 23-35 considered “high fear” of COVID-19.
- The *Hospital Anxiety and Depression Scale* (HADS)² is comprised of a 7-item anxiety subscale and a 7-item depression subscale. Scores ≥ 8 on a subscale indicate clinically elevated symptoms within that domain and has been previously used in ACHD populations.

Statistical Analysis

- Categorical variables are presented as count (percentage) and continuous variables are presented as median and interquartile range (IQR).
- Patients were stratified according to their vaccination status and between group comparisons were made using Kruskal-Wallis or Fisher-Exact testing for continuous and categorical data, respectively. Significance was determined using an alpha level of 0.05.

Results

Patient Characteristics	Total N=262	Vaccinated (%) n=240	Unvaccinated (%) n=22	p-value
Age (median [IQR])	33 [27,41]	34 [27,42]	31 [25,36]	0.17
Gender				0.69
Female	145 (55.3)	131 (54.6)	14 (63.6)	
Male	112 (42.7)	104 (43.4)	8 (36.4)	
Non-binary/Other	5 (1.9)	5 (2.1)	0 (0.0)	
Race				<0.001
White	211 (80.5)	198 (82.5)	13 (59.1)	
Black/African-American	25 (9.5)	22 (9.2)	3 (13.6)	
Asian	12 (4.6)	12 (5.0)	0 (0.0)	
Multiracial/Other	14 (5.4)	8 (3.3)	6 (27.3)	
Ethnicity				0.01
Hispanic or Latino	13 (5.0)	9 (3.8)	4 (19.0)	
Not Hispanic or Latino	248 (95.0)	231 (96.2)	17 (81.0)	
CHD complexity				0.80
Simple	30 (12.0)	27 (11.7)	3 (15.0)	
Moderate	129 (51.6)	118 (51.3)	11 (50.0)	
Great	91 (36.4)	85 (37.0)	6 (30.0)	
Education Level				0.01
College Degree	163 (61.9)	154 (64.7)	7 (31.8)	
No College Degree	99 (38.1)	84 (35.3)	15 (68.2)	
Employment				0.07
Full Time	161 (61.5)	152 (63.3)	9 (40.9)	
Not Full Time	101 (38.5)	88 (36.7)	13 (59.1)	
Income				0.01
> 50K	127 (51.0)	123 (53.5)	4 (21.1)	
< 50K	135 (49.0)	107 (46.5)	15 (78.9)	
Anxiety				0.04
Elevated anxiety score	49 (18.7)	41 (17.1)	8 (36.4)	
No elevated anxiety	213 (81.3)	199 (82.9)	14 (63.6)	
Depression (n=119)				0.14
Elevated depression score	9 (7.6)	7 (6.4)	2 (22.2)	
No elevated depression	110 (92.4)	103 (93.6)	7 (77.8)	
Fear of COVID-19				0.23
High	147 (9.4)	10 (8.6)	2 (18.2)	
Low	115 (90.6)	106 (91.4)	9 (81.9)	
Perceived High Risk				0.03
Yes	71 (27.2)	66 (27.6)	5 (22.7)	
Somewhat	91 (34.9)	88 (36.8)	3 (13.6)	
No	99 (37.9)	85 (35.6)	14 (63.6)	

- Of 262 surveyed, 84 (32.1%) reported a prior COVID-19 illness and 240 (91.6%) reported being vaccinated against COVID-19, of whom 180 (75%) received a booster.
- High fear of COVID-19 and elevated depression symptoms were uncommon but 18.7% had elevated symptoms of anxiety.
- Ninety-nine (37.9%) patients did not perceive themselves to be “high risk” patients, regardless of disease complexity.
- There were significant differences in race, ethnicity, education level, and income with regard to vaccination status as well as anxiety and self-perceived risk for several illness.

Conclusions

- Approximately one-third of adults with CHD reported prior COVID-19 infection.
- There was a high vaccination rate (>90%) in this population.
- About 1 in 5 patients reported elevated anxiety symptoms. Self-perception of their own risk for severe illness was variable.
- Targeted education and mental health support could improve vaccination status further.