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Aggression, Micro-aggression, and Abuse Against Health Care Providers During the COVID-19 Pandemic. A Latin American Survey

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Abstract: The COVID-19 pandemic has had tremendous consequences globally. Notably, increasing complaints of verbal and physical violence against health care providers have been reported. A cross-sectional electronic survey was conducted between January 11 and February 28, 2022 to delineate the violent

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behavior against front-line health professionals in Latin America. A total of 3544 participants from 19 countries were included. There were 58.5% women, 70.8% were physicians, 16% were nurses, and 13.2% were other health team members. About 54.8% reported acts of abuse: 95.6% verbal abuse, 11.1% physical abuse, and 19.9% other types. Nearly half of those who reported abuse experienced psychosomatic symptoms after the event, 56.2% considered changing their care tasks, and 33.6% considered quitting their profession. In a logistic regression model, nurses (odds ratio (OR) 1.90, $P < 0.001$), doctors (OR 2.11, $P < 0.001$), and administrative staff (OR 3.53, $P = 0.005$) experienced more abuse than other health workers. Women more frequently reported abuse (OR 1.56, $P < 0.001$), as well as those who worked directly with COVID-19 patients (OR 3.66, $P < 0.001$). A lower probability of abuse was observed at older ages (OR 0.95, $P < 0.001$). There has been a high prevalence of abuse against health personnel in Latin America during the COVID-19 pandemic. Those caring for COVID-19 patients, younger staff, and women were found to be at elevated risk. It is imperative to develop strategies to mitigate these acts and their repercussions on the patient-provider relationship and outcomes. (Curr Probl Cardiol 2022;47:101296.)

Introduction



orkplace violence (WPV) against Health Care Providers (HCP) is not a novel issue. This problem has been recognized for more than 3 decades.¹⁻⁵ Despite hundreds of research articles describing this issue, emerging literature shows that this situation has been increasing with time.⁵⁻¹³ The World Health Organization (WHO) published a Framework approach to it in 2002.¹⁴ In this document, the WHO together partnered with the International Labour Office, the International Council of Nurses, and Public Services International to define WPV as “*incidents where staff are abused, threatened or assaulted*

in circumstances related to their work [...] involving an explicit or implicit challenge to their safety, well-being or health”.

The Coronavirus disease 2019 (COVID-19) pandemic has resulted in consequences beyond the direct damage caused by the disease and its impact on the health systems.¹⁵ Complaints of violence against HCP have become frequent and are of great concern.¹⁶ The adaptation of medical services to follow the COVID-19 protocols recommended by the WHO has led to prolonged triage in the emergency departments and occasionally closing or restricting access to some services, causing patients and caregivers frustration.

In light of these difficulties, the Inter-American Society of Cardiology (SIAC) developed a survey to characterize the frequency and type of violent actions against front-line health professionals in Latin America.

Material and Methods

Study Design

This study was designed and implemented following the Consensus-Based Checklist for Reporting of Survey Studies (CROSS) proposed by the Enhancing the QUALity and Transparency Of health Research (EQUATOR) Network.¹⁶ A cross-sectional electronic survey was carried out between January 11 and February 28, 2022. The survey was developed in Google Forms (Mountain View, CA) (see *Supplementary Materials*), with 5 sections and 49 questions. Demographics, profession, work environment, previous experiences of violence, and reactions after exposure to violence were registered in the survey. The link with the questionnaire was publicly accessible and circulated via e-mail, medical society communications, and social media platforms (Twitter, WhatsApp, Instagram).

Violence definitions were based on the Framework guideline of the WHO¹⁴ is provided in the supplementary material (see *Table S1, Supplementary Materials*).

Study Population

Different HCP from Latin America who have been providing care from March 2020 onwards, regardless of whether they interacted with COVID-19 patients, were included. The opportunity to refuse to participate in the study was given to the respondents and their personal

information was protected and anonymized. The SIAC Ethics Board approved this protocol.

Statistical Analysis

A non-probabilistic snowball sampling was performed. Continuous variables were expressed as mean and standard deviation or median and interquartile range, according to their distribution. The normality of each variable was evaluated using graphic tools (histograms and normal probability plots) and the Shapiro-Wilk test. The categorical variables were expressed by numbers and percentages.

The Student's t-test was used for comparisons between groups of the continuous variables that were normally distributed. Comparisons between proportions were made using the Chi-square test or Fisher's exact test depending on the frequency of expected values.

A multiple logistic regression model was constructed manually to explore the variables associated with health personnel suffering violence. All variables that achieved a value of $P \leq 0.2$ in the univariate model were evaluated in the multiple logistic regression model, as well as those considered clinically relevant by the authors were selected to be included. To develop the final model a 2-tail P -value < 0.05 was used. The predictive capacity of the model was evaluated by constructing ROC (Receiver Operating Characteristic) curves, and its goodness of fit using the Hosmer-Lemeshow test, comparing the predicted values by deciles.

The analyzes were performed with STATA version 13.0.

Results

The survey was completed by 3544 participants from 19 countries (*Table S2, Supplementary Materials*); 58.5% were women and the mean age of the responders was 41.9 ± 11 years. A total of 70.8% of the responders were physicians, 16.0% were nurses, 3.4% were physiotherapists, and the remaining 9.8% had other roles within the health team (*Table 1*). Approximately 85.1% of physicians were specialists: 33.9% were cardiologists, 14.4% were intensivists or emergency physicians, 10.9% were in a surgical specialty, 7.7% were pediatricians or in related subspecialties, and the remaining 33.1% were from various other specialties.

Over a third of the physicians had been practicing for over 15 years (38.7%), followed by those who had completed their education 5-10 years ago (24.9%) (*Table 1*).

TABLE 1. Baseline characteristics of the participants according to their gender

Characteristic [†]	Women	Men	P
Age	40.5 ± 9.9	43.9 ± 12.1	<0.001
Physicians (n = 2503)	51.9%	48.1%	<0.001
Nurses (n = 563)	79.6%	20.4%	<0.001
Secretaries and administrative (n = 100)	77.0%	23.0%	<0.001
Kinesiologists (n = 119)	56.3%	43.7%	0.62
Technicians (n = 97)	56.7%	43.3%	0.71
Pharmacists (n = 35)	82.9%	17.1%	0.003
Biochemists (n = 27)	66.7%	33.3%	0.26
Others (n = 88)	84.1%	15.9%	<0.001
Years of practice			
* less than 5	60.1%	39.9%	
* 5-10	64.4%	35.6%	
* 11-15 y	61.3%	38.7%	<0.001
* more than 15 y	52.2%	47.8%	
* I prefer not to say	54.1%	45.9%	
Work regularly with COVID-19 patients			
* yes	58.6%	41.4%	0.14
* I'm not sure	65.7%	34.3%	

† 12 participants did not declare their gender.

The majority of participants worked in public practice (36.3%) with 28.8% working in private practice and the remaining working in both. Direct and regular care to COVID-19 patients was provided by 74.7% of all respondents. [Table 1](#) summarizes the baseline characteristics of the participants according to their gender.

Among all participants, 54.8% reported experiencing WPV during the study period: 95.6% verbal violence, 11.1% physical violence, and 19.9% other types of violence. Overall, women more frequently experienced any type of violence than men (65.2% Vs 50.7%, $P < 0.0001$). In contrast, concerning physical violence, no differences were observed by gender (11.4% in women Vs 10.5% in men, $P = 0.52$).

Regarding the frequency of violence episodes, 13.1% of participants reported experiencing some form of violence daily, 26.4% of respondents experienced it about once a week, whereas 38.8% reported a frequency of a few times in a month or rarely (21.7%). The acts of violence most frequently involved patients' relatives (32%) or patients in conjunction with their relatives (35.1%). Less frequently, the participants reported having experienced violence exclusively from their patients (9.1%), or by not related bystanders (23.9%). In over a quarter of cases there were no witnesses to the violence (28.1%), whereas when there were witnesses, almost half were indifferent to the situation (44.6%). Conversely, in 19.7% of reported cases, the witnesses intercepted in favor of the health

personnel. Infrequently the witnesses joined in the aggression (7.6%). In contrast, when the acts of violence occurred in the presence of another member of the health team, in most cases they intercepted on behalf of the victim (46.6%) or requested help from third parties (12.9%).

The victims rated the stress level of these events as an average of 8.2 ± 1.8 points (on a scale from 1 to 10, where “1 was the less stressful situation and 10 the most stressful situation in their life”). On average, women found these events more stressful than men (8.4 ± 1.7 Vs 7.8 ± 2.1 , $P < 0.0001$). Approximately half of the health personnel who experienced WPV reported psychosomatic symptoms following the event (Fig 1), (Fig 2). As a consequence, 12.4% of the victims engaged in psychological care outside their workplace. Psychosomatic and cognitive symptoms were more frequent among victims of physical violence ($P < 0.01$) (Table 2). Among all participants who reported violence, 56.2% considered changing their care tasks and 33.6% consider quitting their profession. Notably, only 23.0% of the health personnel who experienced violence stated that they pursued legal action based on an event.

A total of 71.8% of participants expressed having witnessed acts of violence against other members of the health team during the studied period.

A logistic regression model was developed to explore which socio-demographic variables or characteristics were associated with experiencing some type of violence (Table 3). According to this model, the HCP most exposed to violence were nurses (odds ratio [OR] 1.90 CI 95% 1.33-2.72; $P < 0.001$), doctors (OR 2.11, CI 95% 1.55-2.89; $P < 0.001$), and administrative staff (OR 3.53, CI 95% 1.46-8.53; $P = 0.005$) while the physiotherapists showed a non-significant trend towards experiencing violence less frequently. Women more frequently reported violence (OR 1.56, CI 95% 1.33-1.83; $P < 0.001$) as well as those who worked with patients with COVID-19 (OR 3.66, CI 95% 3.02-4.44; $P < 0.001$) and those members of the health team who worked in the public care system (OR 1.86, CI 95% 1.52-2.28; $P < 0.001$). Conversely, a lower probability of violence was observed at older ages (OR 0.95, CI 95% 0.94-0.96; $P < 0.001$). We also reported differences in the frequency of acts of violence among the participants according to their country of residence (Table 3).

The developed model showed adequate goodness of fit in the Hosmer-Lemeshow test ($P = 0.81$) and a good predictive capacity assessed with a ROC curve (area under ROC curve = 0.74) (Table S3 and Figure S1, Supplementary Material).

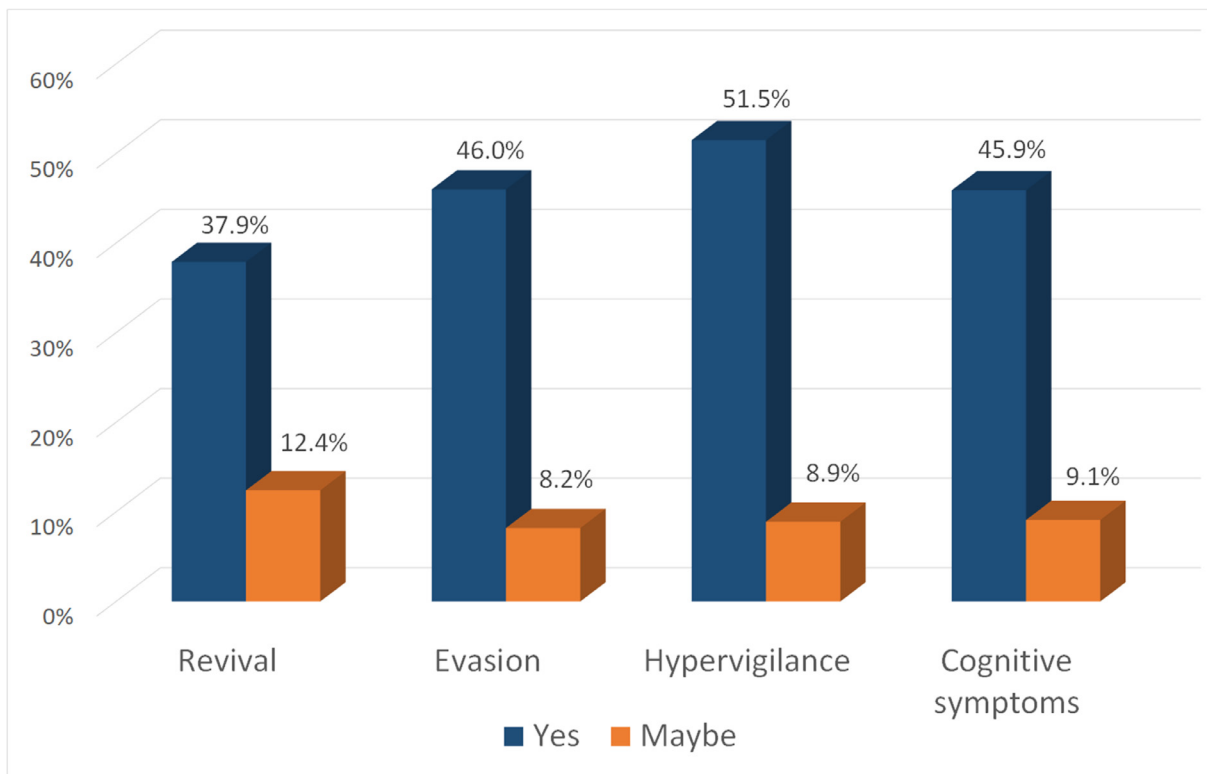


FIG 1. Symptoms experienced by the participants after suffering an act of violence. (Color version of figure is available online.)

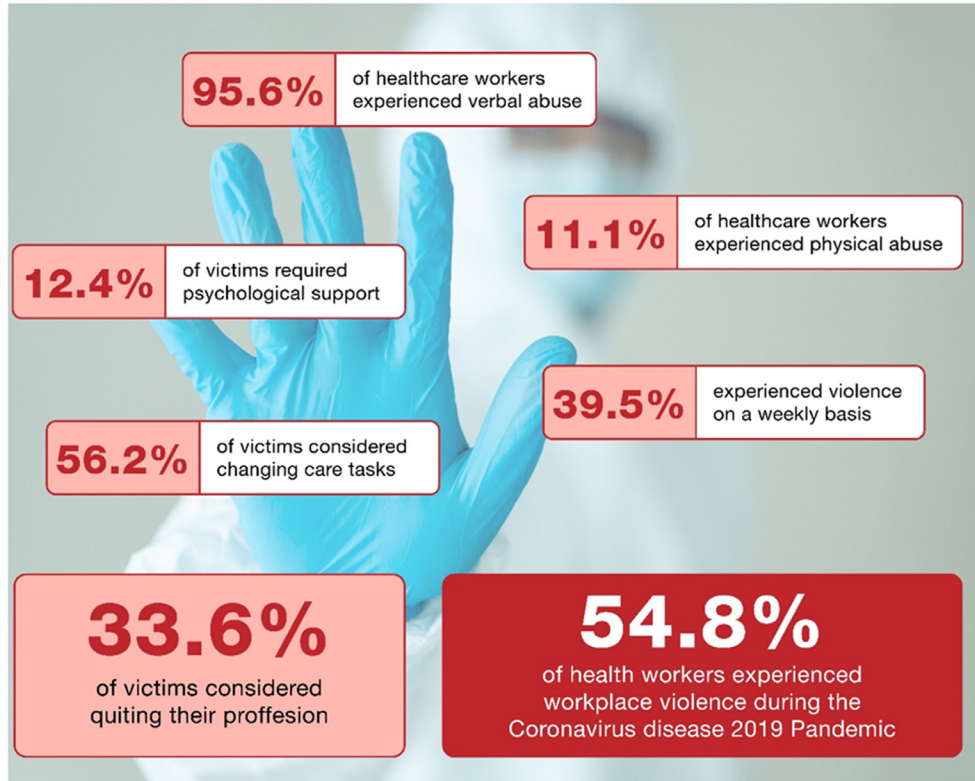


FIG 2. Central illustration, of violence, and aggression toward health care providers during the COVID-19 pandemic. (Color version of figure is available online.)

TABLE 2. Psychosomatic symptoms after referred for the participants, according to the type of violence suffered

Symptoms	Physical violence (n = 233)	Verbal and other violence (n = 1867)	P
Revival symptoms	64.0%	48.6%	<0.0001
Evasion symptoms	64.8%	52.9%	0.001
Hypervigilance	71.7%	59.0%	<0.0001
Cognitive symptoms	66.1%	53.5%	<0.0001
Required psychological care	20.9%	12.5%	0.001

Discussion

The main findings of our study are as follows: (1) a high prevalence of violence towards HCP is occurring in Latin America during the COVID-19 pandemic, especially verbal abuse; (2) more than 1 in 10 participants reported having suffered physical violence; (3) victims of physical violence experienced more cognitive and psychosomatic symptoms than those who experienced verbal abuse; (4) the most vulnerable subjects to experiencing WPV were young woman, especially who work as physicians, nurses, or administrative staff, and (5) about half of the victims of violence experienced psychosomatic symptoms, with a similar proportion

TABLE 3. Regression model to explore the characteristics associated with suffering some type of violence

Variable	OR	CI 95%	P
Female sex	1.56	1.33 - 1.83	<0.0001
Health team member*			<0.0001
Doctor	2.11	1.55 - 2.89	<0.0001
Nurses	1.90	1.33 - 2.72	0.005
Administrative staff	3.53	1.46 - 8.53	0.077
Physiotherapists	0.64	0.39 - 1.05	
Age	0.95	0.94 - 0.96	<0.0001
Workplace†			
Public	1.86	1.52 - 2.28	<0.0001
Public & private practice	1.47	1.21 - 1.79	<0.0001
Work with COVID-19 patients	3.66	3.02 - 4.44	<0.0001
Country of residence‡			
Argentina	1.34	1.10 - 1.63	0.004
Ecuador	1.15	0.86 - 1.55	0.344
Mexico	0.55	0.40 - 0.77	<0.0001
Colombia	0.66	0.45 - 0.98	0.038
Less than 10 y from graduation	0.83	0.67 - 1.02	0.079

* compared with other member of the health system.

† compared with health team members that works in private practice only.

‡ compared with health team members.

of subjects considering changing their care tasks, while a third of those who suffered attacks considered abandoning their profession (*Central illustration*).

In 2020, a meta-analysis including 65 studies with 61,800 health care professionals found a prevalence of WPV of 19.3%. There was extremely high heterogeneity in this analysis with a prevalence of violence in studies ranging from 3% to 88%.⁸ The authors found a higher frequency of acts of violence against nursing staff than against physicians, but they did not report differences by gender,⁸ contrary to what we found in our study. Another systematic review of health personnel from Spain found that the most frequent form of aggression was verbal with the main causes being waiting times and delays, and this information is underreported.⁶ Interestingly, despite these observations being made prior to the COVID-19 pandemic, their findings are very similar to our survey.

Although the exact epidemiology of the violent episodes against front-line workers during COVID-19 pandemic has not been established, multiple reports have exposed different types of violence¹⁷ and discrimination against specific populations during this period.¹⁸ The violence against medical personnel has increased during the past few years, and studies from countries such as India suggest that approximately 75% of doctors may experience violence at least once during their practice.¹⁹ The current COVID-19 pandemic has magnified a problem that had been growing progressively in different latitudes.²⁰⁻²³

Muñoz Del Carpio-Toia et al. performed a cross-sectional online survey of 200 physicians in Peru during the COVID-19 pandemic. Of the respondents, 84.5% suffered some type of violence with the primary aggressor typically being a family member or caregiver (43% of reported cases). A multi-logistic regression showed that female doctors (OR = 2.48, 95% confidence interval [CI] = 1.06-5.83) and those working in COVID-19 wards (OR = 5.84, 95% CI = 1.60-21.28) were the most likely to experience violence.²² These results are similar to our findings, however, the incidence of violence was significantly higher in the previously mentioned study as compared to ours (84.5% Vs 54.8%). This may be because only physicians working in COVID hospitals participated in their survey while in our study the invitation was not restricted.

The relationship between the WPV and COVID-19 was recently highlighted in a study from the Mayo Clinic which showed that during the pandemic the rate of violent incidents in the emergency department increased to 2.53 incidents per 1000 visits, compared to 1.13 incidents per 1000 visits during the prior 3 months.²¹

In our study, older practitioners had a lower risk of violence and verbal aggression was much more likely than physical violence. These findings are consistent with the results of a study from Brazil which, after an adjusted logistic regression model, demonstrated that less than 20 years of experience was associated with a higher risk of violence.²⁵ In the same study, the nursing staff suffered more violence; this represents a significant difference from our study where the administrative staff was at higher risk (OR 3.20, $P < 0.0001$). The discrepancy can be explained as in previous studies the non-medical staff was not considered in the survey.²⁴

Our survey revealed a major problem related to WPV. The negative psychological consequences of HCP after a violent episode are significant and lead even to consideration of quitting practice in the third part of responders. This issue has been pointed out previously.²⁵⁻²⁷ Accordingly, Gillespie et al. found that almost 60% of emergency department workers experienced posttraumatic stress symptomatology after verbal or physical aggression.²⁵ On the other hand, Shi et al. evaluated Chinese healthcare workers who suffered physical violence.²⁷ In this study, nearly 1 in 3 participants experienced post-traumatic stress disorder symptoms. A study by Nam et al. evaluated 422 health care workers who experienced verbal or physical violence in a training general hospital in South Korea.²⁶ They found that WPV was significantly associated with lower empathy with patients. Additionally, authors reported higher post-traumatic stress symptom severity among victims of verbal as compared to physical violence. A possible explanation for this observation is that victims of verbal violence made less frequent complaints about it while receiving less institutional protection, similar to our findings. This highlights the importance of not ignoring the deleterious consequences of any type of violence.

The COVID-19 pandemic is still ongoing. Explanations for the potential increase in violence to health care workers throughout include fear and panic, misinformation about COVID-19, poor levels of health education, diminished health care quality, difficulties in timely access due to services, and increase workload, and emotional stress in health practitioners.^{17,27-30} Potential strategies to mitigate the progression of this problem include protecting health workers through legislation, improved communications with patients and families, critical analysis of information on social media, facilitating patients' access through telemedicine strategies, and improving access to primary settings. All of these strategies can help to alleviate the pressure on frontline health workers as well as the stress related to acute care and subsequently violent episodes.¹⁷

Our survey has limitations that should be taken into account when interpreting the results. First, due to the sampling used and given the large number of countries involved, it was not feasible to calculate a total possible sample to evaluate the response rate. This could have generated a response bias among those individuals who have suffered episodes of violence. However, almost half of the participants did not report experiencing violence, which attenuates this potential bias. Second, although health personnel from 19 countries participated in the survey, nearly 3-quarters of the respondents were from 3 countries. Third, although different members of the health system participated in the survey, most of the respondents were physicians and nurses. This limits the generalizability of our findings to other team members. Fourth, our survey was not pilot tested to gauge the accuracy of responses. However, because the participants had an adequate level of education, there is no clear evidence to suggest that the answers were biased in any direction. Finally, due to the heterogeneity of the participants included and the different scenarios where the respondents work, the results of the logistic regression model must be interpreted with caution. Nevertheless, our findings are consistent with previous literature, both in the context of the COVID-19 pandemic and with previous studies.

To the best of our knowledge, our study is the largest health WPV survey performed during the COVID-19 pandemic, and the first international study that took the information at a continental level from HCP with different roles on the front line working with COVID-19 patients.

Conclusion

Our survey detected a high prevalence of violence against health personnel in Latin America during the COVID-19 pandemic. Although most of the victims experienced verbal violence, 1 in 10 participants reported some type of physical aggression during this time. The staff who works regularly with COVID-19 patients and their relatives, younger members of the health team, and women were found to be especially vulnerable to verbal violence.

The frequency of psychosomatic symptoms after suffering WPV was significant. Furthermore, some participants considered changing their care tasks or changing their profession due to this reason.

Authorship Details

Conception and design of the project: S.G.Z., L.P., R.L.S., G.V., A.S.L., and A.B. Data collection: L.P., A.F.M.A., D.E.G., G.P., M.P., D.X.C.

A., E.J.Z., R.N.M., L.T.C., K.L. Data analysis, and interpretation: S.G.Z., L.P., D.E.G., G.P., M.P., D.X.C.A., M.A., A.F.M.A., A.B. Drafting the article: S.G.Z., L.P., M.P., D.X.C.A., M.P., A.F.M.A., K.L. Drafting the tables and figures: S.G.Z., D.E.G., G.P., M.P., D.X.C.A., M.P., M.A., E.J.Z., R.N.M., L.T.C. Drafting central illustration: L.P., A.F.M.A., K.L., A. B. Critical revision of the article: S.G.Z., A.F.M.A., E.J.Z., R.L.S., G.V., A.S.L., and A.B. Final approval of the version to be published: All authors have read and agreed to the published version of the manuscript.

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Supplementary materials

Supplementary material associated with this article can be found in the online version at doi:[10.1016/j.cpcardiol.2022.101296](https://doi.org/10.1016/j.cpcardiol.2022.101296).

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