

# Investigating the Role of Emotional Exhaustion on Self-Compassion in Nurses with the Mediation of Empathy during the Outbreak of COVID-19

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Received September 9, 2023; Accepted November 15, 2023; Online Published December 15, 2023

## Abstract

**Background:** The outbreak of COVID-19 has put more pressure on the medical staff.

**Objectives:** The current study was performed to determine the role of emotional exhaustion on self-compassion in nurses via the mediation of empathy during the outbreak of COVID-19.

**Methods:** The present study was a descriptive and analytical study conducted on 150 nurses working in Al-Zahra and Kashani hospitals in Isfahan, Iran in 2021. The data were collected by three standard questionnaires of Emotional exhaustion (Chen), Self-compassion (Neff), and Empathy (Davis) and were analyzed in SPSS version 24 and LISREL8 software.

**Results:** The results of the study revealed that the three variables of self-compassion, empathy and emotional exhaustion are not significantly different according to the demographic characteristics of nurses ( $P > 0.05$ ). There was a direct and significant relationship between empathy and emotional exhaustion ( $P < 0.05$ ). Ultimately, the proposed model has a good fit and in the direct and indirect relationships of the model, the role of empathy as a mediator between emotional exhaustion and self-compassion is confirmed.

**Conclusion:** In line with the obtained results, it is suggested that considering the spread of a deadly infectious disease, appropriate educational measures and strategies should be implemented to promote or boost the spirit of empathy among health sector employees, especially nurses.

**Keywords:** Emotional Exhaustion, Self-Compassion, Empathy, Nurse, COVID-19

## 1. Background

In today's stressful world, having some expertise and personal attributes like the capability to control negative emotions, self-adaptation, self-awareness and self-compassion are crucial to manage tensions.<sup>1</sup>

Health care professionals such as doctors and nurses are prone to experience burnout and emotional exhaustion due to their job position.<sup>2</sup> Taking this into account, it is essential to comprehend individual variables that may protect an individual from emotional exhaustion.<sup>3</sup> Job burnout has a large structure and is defined in diverse ways, the most widely utilized definition recently accepted by the World Health Organization (WHO) is the definition of Maslach et al. (2018). They define "burnout" as a syndrome characterized by three basic variables: emotional exhaustion, depersonalization, and personal success.<sup>4</sup>

Although burnout and its variables may result from repeated demands to care and be compassionate toward others, it is also relevant to environmental stressors such

as office demands and overcrowding. Burnout and self-compassion can be observed as two distinct constructs.<sup>5</sup>

Self-compassion is a subject that has received much attention in psychology today. Based on Neff's definition, self-compassion involves self-kindness, mindfulness, and feelings of shared humanity. Self-kindness refers to a benevolent attitude toward oneself, not self-criticism and self-judgment. Mindfulness involves being aware of one's inner experiences from an open, accepting, non-judgmental perspective rather than being entangled or over-identified with thoughts and feelings. Lastly, the common component of humanity refers to the understanding of suffering and pain as universal aspects of human common experience.<sup>6</sup>

Self-compassion is a concept relevant to empathy, induced by repeated exposure to psychological trauma, while burnout and its variables are not necessarily the result of compassion and empathy alone.<sup>7</sup>

Empathy in healthcare has impacted the overall quality

of patient care over the past decade and it is associated with a positive influence on the patient experience and a variety of patient-reported outcomes—particularly reduced patient symptom burden, and with the improved quality of life—which is identified as a standard of care.<sup>8</sup>

Over the outbreak of the COVID-19, empathy was considered more than ever, and nurses were recognized as one of the key factors in the development and implementation of policies relevant to patient care standards during the pandemic.<sup>9</sup>

Over the above-mentioned period, the nurses experienced negative and positive emotions concurrently. Negative emotions included fatigue, distress and helplessness, and positive emotions embraced psychological adjustment and professional responsibility. In the initial phase of this epidemic, negative emotions predominated, while positive emotions deliberately appeared.<sup>10</sup>

## 2. Objectives

Considering the above-mentioned statements and since the concepts of self-compassion, empathy and emotional exhaustion (one of the job burnout variables) were required more than ever during the COVID-19 epidemic; consequently, the present study aims to determine emotional exhaustion and self-compassion in nurses with the mediation role of empathy during the outbreak of COVID-19.

## 3. Methods

This descriptive-analytical study, investigated the mediating role of empathy during the outbreak of COVID-19 between the two variables of emotional exhaustion and self-compassion in nurses. The studied population included all the nurses working at Al-Zahra and Kashani hospitals in Isfahan (Iran) in 2021, who had taken care of these patients during the COVID-19 epidemic in the related departments. Based on the total number of nurses, Morgan Table and conditions for entering the study, 150 nurses participated in the study based on a simple random sampling.

The inclusion criteria included nurses who had been working in the COVID-19 ward for six months or more and had consent to enter the study. The refusal of the nurses to participate in the study was one of the exclusion criteria.

After receiving the required licenses and code of ethics, the researcher visited the hospitals where the study was conducted, including Al-Zahra (S) and Kashani hospitals to identify working nurses according to the entry criteria. Nurses were given the necessary explanations about the study and its objectives, and after receiving their informed consent, the questionnaire was distributed among them. Data were collected by standard questionnaire. In cases where the nurses had questions about the questionnaire, the researcher answered them. Meanwhile, since some of

the nurses were not able to attend and take the questionnaires in person, the questionnaires were placed on the Porsline.ir website. For the nurses that the researcher was not able to use the link, the questionnaire was sent via SMS or in notification software and after providing explanations about the objectives of the study, they were requested to click on the attached link and answer the questions if they were satisfied. Consequently, clicking on the link indicated the informed consent of the nurses. Finally, the researchers promised to maintain the confidentiality of information and response of the research participants.

The utilized questionnaires were of standardized type and as follows:

### 3.1. Emotional Exhaustion

Emotional exhaustion was measured by Chen et al.'s questionnaire.<sup>11</sup> This test has 21 five-multiple choice questions, and the scoring method of this scale is based on a five-point Likert scale. Its choices are rated from 1 = very low to 5 = very high, so that 1 indicates the lowest level of fatigue and 5 indicates the highest level of fatigue. This questionnaire has three subscales (depersonalization, personal failure, and emotional exhaustion), each of which is determined by a number of questions. The reliability of Chen's questionnaire was calculated as 91% and the reliability of the questionnaire in Sotoudeh's study (2006)<sup>12</sup> was calculated as 0.82. Higher scores of this questionnaire indicate higher emotional exhaustion. The average limit of this questionnaire is 42.

### 3.2. Self-Compassion

This scale was made by Neff et al.,<sup>13</sup> which includes 26 items and six subscales, which respectively include: 1- Self-kindness (5 items), 2- Self-judgment (5 items), 3- Human commonalities. (4 items), 4-Isolation (4 items), 5- Mindfulness (4 items) and 6-Increased identification (4 items). It is scored on a 5-point Likert scale from 1 = completely disagree to 5 = completely agree. Items 1, 2, 4, 6, 8, 11, 13, 16, 18, 20, 21, 24, and 25 have reverse scoring.

The average scores of six components are added up and a total score of self-compassion is obtained, and the negative subscales, i.e. self-judgment, isolation, and increased identification, are scored in reverse. The average limit of the questionnaire equals 52.

In Khosravi et al.'s research (2012), the alpha coefficient for the overall score of the scale was 0.76. Meanwhile, Cronbach's alpha coefficients for the subscales of self-kindness, self-judgment, human commonality, isolation, mindfulness, and extreme identification were 0.81, 0.79, 0.84, 0.85, 0.80, and 0.83, respectively. The validity of the questionnaire has also been reported as favorable.

### 3.3. Empathy

This scale was prepared by Mark Davis in 1983.<sup>14</sup> This questionnaire contains 21 questions, and both examines and evaluates the level of empathy in people. This questionnaire includes three components of empathic concern, perspective-taking and personal turmoil. The scoring of this questionnaire is based on a 5-point scale and is scored from 5 = completely agree to 1 = completely disagree. To get the overall score of the questionnaire, the total score of each question was calculated together. Higher scores indicate more empathy existed in the respondent and vice versa. If the subject gets a score between 21 and 42, it will indicate a weak level of empathy. A score between 42 and 63 indicates average empathy and a score above 63 indicates high empathy. Cronbach's alpha coefficient for all four subscales was reported between 0.71 and 0.77. Test-retest validity was also reported between 0.62 and 0.80 after a four-week period. In Iran, Feyzabadi et al. (2007)<sup>15</sup> applied Cronbach's alpha coefficient for the subscale of empathic concern as 0.68, for fantasy 0.70, perspective-taking 0.68 and for personal turmoil as 0.70. Checking the validity of this questionnaire with the help of confirmatory factor analysis and using LISREL software demonstrated that the mentioned questionnaire has a good fit in the target society.

### 3.4. Statistical Analysis

The collected data were analyzed using SPSS version 24 statistical software and at a significance level of less than 0.05. In order to describe the data in quantitative variables, the mean and standard deviation were employed and in qualitative variables, frequency distribution, and percentage were used. Pearson correlation and regression tests were employed to analyze the data. Meanwhile, structural equation modeling analysis was utilized in LISREL version 8 software.

### 4. Results

In Table 1, the demographic attributes of nurses and the investigated variables are displayed descriptively. Ninety-seven of the nurses (64.7%) were women, the average age of all nurses was  $39.58 \pm 7.93$  years and their work experience was  $11.63 \pm 3.89$  years.

The average score of emotional exhaustion in nurses was  $65.5 \pm 13.40$ , the average score of self-compassion was  $60.14 \pm 9.43$ , and the average score of empathy was  $66.81 \pm 11.73$ . In emotional exhaustion, a higher score indicates higher emotional exhaustion. The maximum score in this scale is 105, which can be seen that the average emotional exhaustion score of nurses in this study is lower than average.

**Table 1.** Demographic Characteristics and Description of Variables Investigated in Nurses

Variables	Number (Percentage)
Gender	Male Female
	53 (35.3) 97 (64.7)
Age (Mean $\pm$ Standard Deviation)	$39.58 \pm 7.93$
Work Experience (Mean $\pm$ Standard Deviation)	$11.63 \pm 3.89$
Emotional Exhaustion (Mean $\pm$ Standard Deviation)	$40.5 \pm 13.40$
Self-Compassion (Mean $\pm$ Standard Deviation)	$60.14 \pm 9.43$
Empathy (Mean $\pm$ Standard Deviation)	$66.81 \pm 11.73$

**Table 2.** Correlation between Variables and its Subscales

Variables (r)	1	2	3	4	1	2	3	4	5	6	7	1	2	3	4
Depersonalization	-								0.195	-0.252		0.326			
Lack of Personal Success		-			0.287				-0.167		0.199				
Emotional Exhaustion			-		-0.287									-0.283	0.350
<b>Emotional Exhaustion</b>				-		0.172			-0.242			0.191		0.252	0.210
Self-Kindness															
Self-Judgment												0.189	-0.220		
Human Commonality															
Isolation															
Mindfulness															
Extreme Assimilation															
<b>Self-Compassion</b>														0.242	
Empathic Concern															
Perspective															
Personal Turmoil															
<b>Empathy</b>															

A higher score on self-compassion indicates higher self-compassion. The maximum score in this scale is 130. It can be observed that the average score of self-compassion in this study is slightly higher than the average.

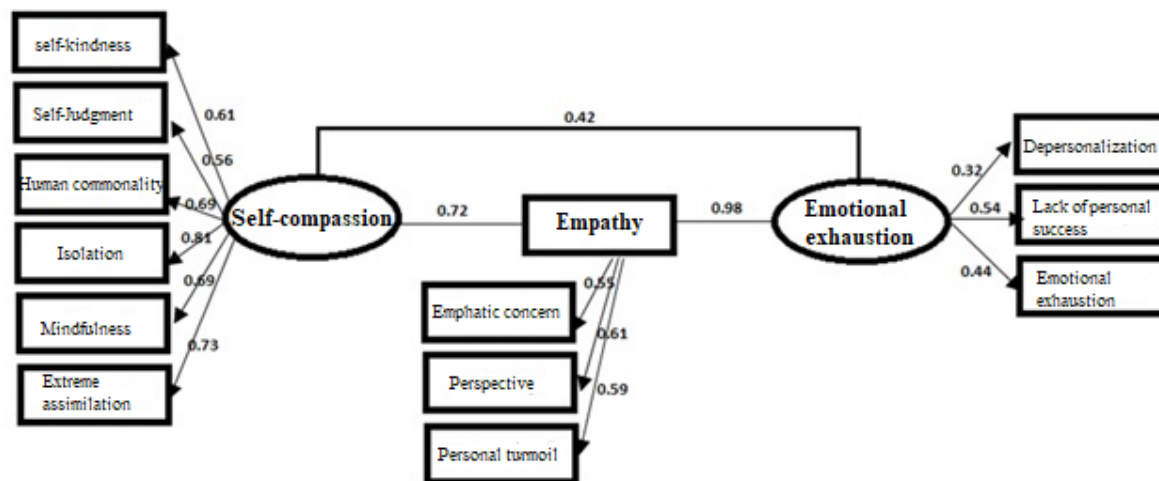
The empathy score was equal to 66.81, which was higher than 63 based on the instructions of the questionnaire, thus the empathy level of the nurses was high. The correlation between the variables and its

subscales has been displayed in Table 2. As it can be observed, there is a direct and significant relationship between empathic concern and self-judgment ( $P = 0.021$ ,  $r = 0.189$ ), an inverse and significant relationship between perspective-taking and self-judgment ( $P = 0.007$ ,  $r = -0.220$ ) and between perspective-taking and self-compassionate, there was a direct and significant relationship ( $P = 0.003$ ,  $r = 0.242$ ).

A negative and significant relationship was observed between depersonalization and mindfulness ( $P = 0.002$ ,  $r = -0.252$ ) and a direct and significant relationship was observed between depersonalization and isolation ( $P = 0.017$ ,  $r = 0.195$ ).

There was a direct and significant relationship between lack of personal success and self-judgment ( $P = 0.0001$ ,  $r = 0.287$ ) and that of self-compassion ( $P = 0.015$ ,  $r = 0.199$ )

and with that of isolation ( $P = 0.041$ ,  $r = -0.167$ ), there was an inverse and significant relationship. There was an inverse and significant relationship between emotional exhaustion subscale and self-judgment ( $P = 0.0001$ ,  $r = -0.287$ ). There was a direct and significant relationship between emotional exhaustion and human commonality ( $P = 0.036$ ,  $r = 0.172$ ) and an inverse and significant relationship with mindfulness ( $P = 0.003$ ,  $r = -0.242$ ).



**Figure 1.** The model of the role of emotional exhaustion on self-compassion with the mediation of empathy during the outbreak of COVID-19.

**Table 3.** Model Fit Indices

Fit Indices	X <sup>2</sup>	X <sup>2</sup> /df	RMSEA	GFI	AGFI	CFI	NFI
Desired limit		1-5	<0.05	>0.9	>0.9	>0.9	>0.9
Obtained estimate	31.32*	2.27	0.03	0.97	0.95	0.97	0.96

\*  $P < 0.001$

There was a direct and significant relationship between depersonalization and empathic concern ( $P = 0.0001$ ,  $r = 0.326$ ) and empathy ( $P = 0.001$ ,  $r = 0.268$ ).

There was an inverse and significant relationship between the emotional exhaustion subscale with perspective-taking ( $P = 0.0001$ ,  $r = -0.283$ ) and a direct and significant relationship with personal turmoil ( $P = 0.0001$ ,  $r = 0.350$ ).

There was a direct and significant relationship between emotional exhaustion with empathic concern ( $P = 0.020$ ,  $r = 0.191$ ), personal turmoil ( $P = 0.002$ ,  $r = 0.252$ ) and empathy ( $P = 0.010$ ,  $r = 0.210$ ).

In order to test the considered conceptual model, that is, to investigate the role of emotional exhaustion on self-compassion in nurses with the mediation of empathy during the outbreak of COVID-19, the structural equation modeling was utilized. Emotional exhaustion has the role of exogenous variable, empathy has the role of mediating variable and self-compassion has the role of endogenous

variable. The final model has been displayed in Figure 1.

Goodness of fit indices were applied to check the fit of the model, which has been presented in Table 3.

According to Table 3, the model indicators were compared with the provided fit criteria. As it can be observed, the first index of fit, i.e. chi-square, was suitable ( $P = 32.31$ ). Chi-square ratio to degree of freedom (2.41), goodness of fit (0.97), adjusted goodness of fit (0.95), comparative fit (0.97), normalized fit (0.96) and root mean square error of approximation (0.07) were acceptable for accepting the model indicating the fit of the model at a good level. Therefore, the fit of the model was confirmed. In Table 4, paths and their standardized coefficients have been displayed in the final model. The standardized coefficient of the direct path of empathy to emotional exhaustion; empathy to self-compassion and self-compassion to emotional exhaustion was significant. In order to investigate indirect relationships, Bootstrap was utilized.

**Table 4.** Direct Relationship Measurement Parameters in the Model

Paths	Unstandardized Estimate	Standardized Estimate	Standard Error	Critical Ratio	P
Emotional exhaustion to self-compassion	0.34	0.37	0.05	4.23	0.049
Self-compassion to empathy	-0.41	-0.48	0.20	-9.69	0.021
Empathy to emotional exhaustion	-0.29	-0.39	0.50	-8.76	0.0001

**Table 5.** Indirect Relationship Measurement Parameters in the Model

Path	Estimate	Upper Limit	Lower Limit	Significance Level
The relationship of emotional exhaustion to self-compassion mediated by empathy	-0.24	-0.07	-0.12	0.036

**Table 6.** Regression Analysis of Demographic Variables and Three Variables (emotional exhaustion, self-compassion and empathy)

Variables	Emotional Exhaustion			Self-Compassion			Empathy		
	<i>B</i>	<i>P</i>	CI 95%	<i>B</i>	<i>P</i>	CI 95%	<i>B</i>	<i>P</i>	CI 95%
Age	0.035	0.799	(-0.209–0.335)	-0.034	0.728	(-0.22–0.15)	0.025	0.836	(-0.21–0.25)
Gender	-1.029	0.667	(-5.4–3.89)	-0.787	0.637	(-4.07–2.5)	3.910	0.052	(-0.03–7.85)
Job Records	-1.134	0.637	(-5.89–3.51)	2.597	0.123	(-0.71–5.9)	-1.058	0.606	(-5.10–2.98)

In Table 5, the results related to indirect relationships have been displayed. The path of emotional exhaustion to self-compassion with the mediation of empathy (-0.24) is significant and since the upper and lower limit of the indirect relationship does not include zero, therefore the mediation role of empathy is confirmed.

In Table 6, regression analysis of demographic variables and three variables (emotional exhaustion, self-compassion, and empathy) have been demonstrated. As it can be seen, the three variables of self-compassion, empathy, and emotional exhaustion are not significantly different based on the demographic characteristics of nurses ( $P>0.05$ ).

## 5. Discussion

The results of the study revealed that the three variables of self-compassion, empathy and emotional exhaustion do not have significant differences based on the demographic characteristics of nurses. In this study, the average score of emotional exhaustion of nurses was lower than average, the average score of self-compassion was slightly higher than average, and the level of empathy of nurses was high. There was a direct and significant relationship between empathy and emotional exhaustion. Finally, the proposed model has a good fit and in the direct and indirect relationships of the model, the role of empathy as a mediator between emotional exhaustion and self-compassion is confirmed.

In this regard, several studies have been performed and although they are not structurally similar to the present study, they have investigated some aspects relevant to this study. Yaghoubi and Akrami<sup>16</sup> after examining 250 students in Isfahan, showed that self-compassion had a positive relationship with perspective-taking and a negative relationship with personal turmoil. This is while no significant relationship was observed with empathic concern. In the present study, there was a direct relationship between self-relational judgment and empathic concern, and a negative and significant relationship with perspective-taking. Finally, there was a direct and significant relationship between perspective taking and self-compassion. The results of both studies were not consistent with each other. The lack of alignment can be caused by the difference in the study execution time and the examined sample. The current study was conducted during the outbreak of COVID-19 and the population

sample included nurses working in this department.

Raab<sup>17</sup> showed that empathy and self-compassion have a meaningful relationship with each other, and mindfulness training can help bring these two variables closer to each other. In the present study, empathy alone had no significant relationship with self-compassion and had a mediating role between self-compassion and emotional exhaustion. The disparity of results can be traced back to the worldwide spread of COVID-19. Thus, after the outbreak of this deadly disease, the attention of the health sector providers to empathy in care taking increased.

Gerber and Anaki's study<sup>18</sup> after examining 109 nurses showed that self-compassion is a potential factor against the challenge of job burnout in the health care system. In the present study, self-compassion had a significant relationship with the mediation of empathy and emotional exhaustion, which is one of the pillars of job burnout.

Fernández<sup>10</sup> surveyed 506 health care workers in Spain. The results revealed that during the COVID-19 pandemic, empathy and mindfulness were the main predictors of emotional exhaustion and job burnout. The results of this study were consistent with this study. In the present study, there was a negative and significant relationship between emotional exhaustion and mindfulness. Meanwhile, empathy and emotional exhaustion had a direct and meaningful relationship.

Bluth and Blanton<sup>19</sup> surveyed 90 students in America. The results indicated that there is an inverse relationship between self-compassion and emotional exhaustion. In the present study, which was conducted during the outbreak of COVID-19 among nurses, no significant relationship was observed between these two variables.

After examining 280 nurses in Portugal, Duarte et al.,<sup>20</sup> showed that empathic concern and personal turmoil were positively and significantly related to self-compassion. In the present study, a direct and significant relationship was observed between self-compassion and perspective taking, but there was no significant relationship between empathic concern and personal turmoil.

Rodríguez-Nogueira et al.,<sup>21</sup> examined 471 Spanish physical therapists, and the results showed that there is a significant relationship between job burnout and compassion dimensions. In the present study, there was a significant and direct relationship between emotional exhaustion and empathy, which is one of the components of job burnout.

Sturzu et al.,<sup>22</sup> conducted a study in France on 241 healthcare workers. The results showed that those with empathic concern had lower levels of job burnout. Meanwhile, depersonalization had a significant relationship with empathy. The results of two studies were similar and in the present study there was a direct and meaningful relationship between empathic concern and emotional exhaustion and between depersonalization and empathy. Furthermore, Samra (2018) after examining doctors in the United Kingdom, stated that job burnout can reduce empathy by creating a sense of depersonalization, which was in line with the results of the present study.

In a study in Lebanon, Hashem and Zeinoun<sup>23</sup> stated that there is an inverse and significant relationship between emotional exhaustion and self-compassion, but in the current study, no significant relationship was observed between these two variables, thus the two studies were not aligned with each other.

After examining 208 healthcare workers in South Korea, Jang et al.<sup>24</sup> stated that there is a negative and significant correlation between burnout and self-compassion subscales. On the other hand, isolation and mindfulness were significantly related to job burnout. In the present study, there was a direct relationship between emotional exhaustion and human commonality and a negative and significant relationship with mindfulness. Furthermore, Martínez-Rubio et al.<sup>25</sup> after examining 644 psychologists and nursing undergraduate students from two Spanish universities stated that there is a significant correlation between job burnout and mindfulness which was in line with the finding of the present study.

### 5.1. Study Limitation

One of the limitations of this study is the inaccuracy of nurses in answering questions due to lack of time. In order to solve this problem, nurses were given the opportunity to answer the questionnaires within two days, and the answers were recorded in the system. In fact, there was no need for the respondents to answer the questions in a specified time

### 6. Conclusion

According to the results obtained from the study, empathy can have a positive effect on the relationship between self-compassion and emotional exhaustion as a mediating factor. In this regard, it is suggested that appropriate educational measures and solutions be implemented in order to improve or enhance the spirit of empathy among health sector employees, especially nurses. In the meantime, the role of the spread of a deadly infectious disease in the world should not be ignored, because considering the difference in the results of the studies, the spread of COVID-19 has definitely exerted an influence on the relationship between these variables.

### Research Highlights

#### What Is Already Known?

One of the most significant resources of any organization, particularly healthcare organizations, is human resources that must be provided with appropriate conditions for their activities.

#### What Does This Study Add?

Empathy can have a positive effect on the relationship between self-compassion and emotional exhaustion.

### Acknowledgments

We acknowledge all those who contributed toward conducting.

### Author Contributions

ABBJ contributed as the main author with the concept of planning the study. ZG and SS contributed to study design, personnel selection, and data collection. DM and ABBJ performed the statistical analysis and helped write the manuscript. MNI mentored the edition of the final version. All authors read and approved the final manuscript.

### Conflict of Interest Disclosures

All authors declared that they have no conflict of interest.

### Ethical Approval

The current study was approved by the Isfahan University of Medical Sciences Ethics Committee with the code of IR.MUI.MED.REC.1401.249. Written consent was obtained from the families of patients to enter this study.

### Funding/Support

None.

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