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The impact of the COVID-19 pandemic on the psychological health of midwives

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ABSTRACT

Objective. The SARS-CoV-2 pandemic has changed the therapeutic relationship between women and midwives and these changes have been perceived as stressors. The aim of this work is to investigate the effect of these stressors on midwives through an online questionnaire.
Materials and Methods. The VRS tool was used, and statistical analysis was performed using Stata.
Results. Significant differences were found in the somatization cluster and in subjective stress cluster.
Conclusions. The analysis shows that there is a need to implement resilience-enhancing factors such as communication, sharing of distress and the presence of support.

INTRODUCTION

The World Health Organization declared the new coronavirus epidemic (COVID-19) as a global pandemic on 11 March 2020 [1, 2].
SARS-CoV-2, which causes Coronavirus Disease 2019 (COVID-19), has emerged as a major threat to human health worldwide [3, 4]; it is transmitted mainly through infected respiratory droplets and through close contact with infected people [3]. Recent studies have shown that SARS-CoV-2 can remain active for days on surfaces under controlled experimental conditions [5, 6].

There are two modes of transmission of COVID-19: direct and indirect [7]. Direct mode includes transmission through aerosols and/or in the form of respiratory droplets; other body fluids and secretions, such as faeces, saliva, urine, semen and tears. Indirect transmission may occur via fomites or surfaces (*e.g.*, furniture and fixtures) present in the immediate environment of an infected patient and objects used on the infected person (*e.g.*, stethoscope or thermometer) [8, 9].
In order to address and try to stop the exponential growth of infections and to avoid an overload of the National Health System, it was necessary to

apply very restrictive measures, even going so far as to impose a lockdown [10].
In healthcare settings, procedures have been put in place to secure those most at risk of infection with SARS-CoV-2 [11]. The most effective preventive measures to be applied both in the community and in the health sector include frequently practicing hand hygiene with soap and water or, if these are not available, with alcohol-based solutions/gels [12]. Additional precautions include the correct use of PPE and adequate awareness and training in the methods of use, dressing, undressing and disposal [13]. The PPE necessary for healthcare professionals include the surgical mask or FFP2 in specific care contests [14], disposable gown/disposable apron/coveralls, gloves, goggles/safety glasses and mask/face shield [11, 12]. Additional preventive measures to be observed are: always respecting the rules on physical distance, both with colleagues and with users; clean all the equipment used, in compliance with the recommended procedures; use the appropriate PPE according to the setting and care procedures in which you operate, wear and remove PPE safely, take breaks and maintain appropriate hydration [11-14].
Midwives are responsible for assisting and supporting the delivery mothers in uncomplicated pregnancies [15].
The need to apply some anti-COVID-19 measures has changed the way in which the therapeutic relationship is established between women and midwives, and the delivery care provided by obstetricians [11, 12, 16, 17].
In the event of a suspected or confirmed infection, a multidisciplinary team must be alerted for assistance to the woman, including gynaecologist, anaesthetist-resuscitator, obstetrician, neonatologist, paediatric nurse and infectious disease specialist [11]. The mode of delivery should not be influenced by the presence of COVID-19, unless the woman's respiratory conditions require urgent delivery [14]. The choice of delivery method should be discussed with the woman, taking into consideration her preferences and any obstetric and anaesthetic indications [11, 14].
Each change has been perceived as a stress factor that not only the users but also the operators themselves had to deal with [18-20].
It has been also shown that professionals working in wards in contact with COVID-19 patients have higher levels of depressive symptoms and post-traumatic stress syndrome (PTSS) than those working in other units [21-24].

The aim of this study is to evaluate the subjective stress in a sample of midwives during the period of the COVID-19 pandemic and to analyse how much it has influenced the midwives-woman care relationship.

MATERIALS AND METHODS

An observational and cross-sectional study has been carried out. The survey was conducted on a sample consisting of 652 midwives engaged using a questionnaire disseminated through online platforms (Facebook/Instagram from April to October 2020). The questionnaire submitted to the midwives is composed of the following variables:

- socio-demographic data: age, gender, region where she/he carries out his professional activity, city where she/he works, academic qualifications obtained, years of service, employment status, work environment.
- data regarding one's work experience during the COVID-19 pandemic:
  a. whether or not the obstetrician assisted a woman who was positive for COVID-19;
  b. the perceived level of influence of the epidemic on the quality of the midwife-woman relationship;
  c. how many protocols and procedures put in place made the daily professional commitment more strenuous;
  d. the feelings most expressed by pregnant women;
  e. the detected level of interference of protective devices in the capacity for acceptance and empathy;
  f. how much the epidemic influenced the psycho-emotional experience of pregnancy and childbirth in women.

The RSA (Rapid Stress Assessment) tool was also used, a test that breaks down the stress assessment into five areas:

1. Anxiety (items 1 - 5 - 10).
2. Depression (items 2 - 4 - 7).
3. Somatisation (items 9 - 12 - 14).
4. Aggression (items 3 - 6 - 8).
5. Social support (items 11 - 13 - 15).

Each cluster corresponds to 3 items, for a total of 15. Of the 15 items, the first 9 refer to the individual's mood at the moment of compilation, while the remaining 6 measure longitudinal variables referring

to the previous 6 months. Social support does not represent a psychopathological dimension: it is considered an essential factor in the response to stressors and is assessed as a negative scale, so that the partial score quantifies the lack of support, which makes its use possible alongside the other scales.
The 15 items have a four-position response format (not at all, slightly, quite a bit, a lot) which was scored from 0 to 3 points. Three statements (7 - 11 - 13) are considered in reverse (from 3 to 0 points), as they measure characteristics opposite to the dimension to which they belong. From the count, 5 partial scores are obtained, each of which goes from a minimum of 0 to a maximum of 9 points, corresponding to the individual dimensions explored. These, added together, constitute the total score of the questionnaire, from 0 to 45 points, which quantifies the degree of response to stressors. The total score obtained indicates the subjective level of stress. The assessment of stress depends on the stimulus, the subjective interpretation of the stimulus-environment relationship and the type of response.
Statistical analysis was carried out using Excel and Minitab. In order to highlight the presence of statistically significant differences resulting from the presentation or not of a certain condition within our sample, Student's t-test was used. The significance threshold was set at 95%, with a P-value < 0.05. The null hypothesis considered is "the averages are equal", the alternative hypothesis "the averages are not equal".

RESULTS

The sample is composed of 652 midwives with a mean age of 31.5 years with a standard deviation of ± 7.919, from 21 to 35 years (80%), from 36 to 50 years (15%) and over 50 years (5%). All midwives in the sample are female.

The regions of midwifery were divided into 4 groups:
1. North (61%).
2. South and Islands (13%).
3. Centre (23%).
4. Abroad (3%).

64% have a University Degree or Diploma, 12% have a Master's Degree, 22% have a 1st level Master, 1% a 2nd level Master and 1% other qualifications.

At the time of the questionnaire 21% had less than 1 year of service, 39% from 2 to 5 years, 18% from 6 to 10 years and 22% more than 10 years of service. 78% of the midwives in our sample work in a public hospital, 10% in private practice/in home services, 7% in a private clinic and 6% in a clinic. 78% of the midwives in our sample are public employees, 11% are private employees, 11% are freelancer. Only 268 midwives attended a COVID-19 positive woman. As many as 485 midwives believe that the COVID-19 epidemic affects the quality of your relationship between the midwife and a pregnant/giving birth woman quite a bit and slightly. 85% of the midwives in our sample believes that the protocols and procedures implemented in this emergency have made everyday life quite a bit and a lot more tiring and/or difficult. About 480 midwives believe that the protective devices used interfered a little and a bit with their ability to welcome the people in their care and to empathise.
Regarding the anxiety cluster, the comparison between midwives who are between 36 and 50 years old and midwives who are older than 50 gave a statistically significant result: midwives between 36 and 50 years demonstrated a higher level of anxiety than midwives over the age of 50 (**Table 1**).
In comparing the midwives who had contact with a COVID-19 positive woman, with those who had no contact, a statistically significant difference was found in the somatisation cluster: midwives who had contact with a COVID-19 positive woman show a higher level of somatisation than the midwives who had no contact with her (**Table 2**).
Also, with regard to the somatisation cluster, it was found that midwives between 21 and 35 years old had a higher level of somatisation than midwives over 50 years old (**Table 3**). The same applies to midwives between 36 and 50 years old compared to midwives over 50 years old (**Table 4**).
Midwives working in Northern Italy also show more somatisation than those working in Central Italy. In addition, the midwives employed in private and public hospitals show greater somatisation than those working in freelance (**Table 5**).
Also, regarding the somatisation cluster, it was found that midwives employed in public hospitals show a higher level of somatisation than freelancers (**Table 6**) and that midwives working in public hospitals show a higher level of somatisation than those working in the private hospitals (**Table 7**).
Regarding the aggression cluster, public employed midwives show a higher degree of aggression than freelance midwives (**Table 8**).

Table 1. *Cluster anxiety: comparing 36-50 years old vs > 50 years old.*

Variable/Sample	n	Average	D.S.	
Anxiety (midwives 36-50 years old)	96	3.61	± 2.10	
Anxiety (midwives > 50 years old)	31	2.71	± 2.15	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
0.905	(0.018; 1.792)	2.05	49	0.046

Table 2. *Cluster somatization: comparing contact with positive vs no-contract.*

Variable/Sample	n	Average	D.S.	
Somatisation (contact with COVID-19 positive person)	268	4.28	± 1.98	
Somatisation (no contact with COVID-19 positive person)	384	3.84	± 2.05	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
0.442	(0.128; 0.756)	2.77	586	0.006

Table 3. *Cluster somatization: comparing 21-35 years old vs > 50 years old.*

Variable/Sample	n	Average	D.S.	
Somatization (midwives 21-35 years old)	525	4.09	± 2.03	
Somatization (midwives > 50 years old)	31	2.87	± 1.84	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
1.222	(0.527; 1.917)	3.57	34	0.001

Table 4. *Cluster somatization: comparing 36-50 years old vs > 50 years old.*

Variable/Sample	n	Average	D.S.	
Somatization (midwives 36-50 years old)	96	4.01	± 1.99	
Somatization (midwives > 50 years old)	31	2.87	± 1.84	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
1.139	(0.362; 1.917)	2.94	54	0.005

Table 5. *Cluster somatization: comparing North vs Centre.*

Variable/Sample	n	Average	D.S.	
Somatization (North)	397	4.12	± 2.06	
Somatization (Centre)	146	3.75	± 1.82	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
0.377	(0.017; 0.737)	2.06	290	0.040

Table 6. *Cluster somatization: comparing public employee vs freelancers.*

Variable/Sample	n	Average	D.S.	
Somatization (public employee midwives)	507	4.14	± 2.00	
Somatization (freelance midwives)	71	3.03	± 1.95	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
1.110	(0.618; 1.602)	4.48	91	0.000

Table 7. *Cluster somatization: comparing public employees vs clinical employees.*

Variable/Sample	n	Average	D.S.	
Somatization (midwives in public hospitals)	507	4.18	± 2.00	
Somatization (midwives in private hospitals)	43	4.28	± 2.09	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
-0.096	(-0.760; 0.568)	-0.29	48	0.773

Table 8. *Cluster aggression: comparing public employees vs freelancers.*

Variable/Sample	n	Average	D.S.	
Aggression (public employee midwives)	507	2.78	± 2.19	
Aggression (freelance midwives)	71	2.25	± 2.01	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
0.522	(0.011; 1.032)	2.03	94	0.045

Table 9. *Cluster aggression: comparing North vs South.*

Variable/Sample	n	Average	D.S.	
Aggression (North)	397	2.85	± 2.25	
Aggression (South)	87	2.31	± 2.29	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
0.544	(0.008; 1.079)	2.01	124	0.047

Table 10. *Cluster social support: comparing 21-35 vs 36-50 years old.*

Variable/Sample	n	Average	D.S.	
Social Support (midwives 21-35 years old)	525	4.65	± 1.52	
Social Support (midwives 36-50 years old)	96	4.31	± 1.31	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
0.333	(0.038; 0.628)	2.23	146	0.027

Furthermore, midwives working in Northern Italy show higher levels of aggression than midwives who carry out their profession in Southern Italy (**Table 9**). On the other hand, about the social support cluster, midwives between 21 and 35 years feel the lack of social support to a greater extent than those between 36 and 50 years old (**Table 10**).

Also, the comparison between midwives working in public sector and freelancers gave a statistically significant result in the social support cluster. Pub-

Table 11. *Cluster social support: comparing public employees vs freelancers.*

Variable/Sample	n	Average	D.S.	
Social Support (public employee midwives)	507	4.67	± 1.52	
Social Support (freelance midwives)	71	4.10	± 1.26	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
0.570	(0.245; 0.895)	3.48	101	0.001

Table 12. *Cluster subjective stress: comparing public employees vs freelancers.*

Variable/Sample	n	Average	D.S.	
Subjective stress (public employee midwives)	507	19.17	± 7.06	
Subjective stress (freelance midwives)	71	16.58	± 6.23	
Difference	**95% CI for Difference**	**T-value**	**DF**	**P-value**
2.590	(0.997; 4.183)	3.23	97	0.002

lic employees feel the lack of support more strongly (**Table 11**).
With regard to the subjective stress cluster, the comparison gave a statistically significant result for public employees and freelance midwives. Public employees have a higher level of subjective stress than freelance colleagues (**Table 12**).
In the last cluster analysed, that of depression, there were no significant differences between the groups analysed.

DISCUSSION

The sample examined was small, comprised only of women, and was subject to bias in the administration and completion of the questionnaire.
During the SARS-CoV-2 pandemic, great efforts and unprecedented measures were taken in maternal-fetal care to reduce the risks of infection, avoid possible vertical transmission, or reduce the burden of infection in severe cases, and mental health care should be a central point during patient management in order to prevent possible consequences [25].
The most detected manifestation of stress within our sample is somatisation.
Somatisation is a phenomenon whereby an individual experiences a variable level of psychological distress through physical symptoms, without these complaints having an organic basis. It is a response to stressful triggers and can manifest in the form of various symptoms such as headaches, gastro-intestinal complaints, back pain and joint pain [26, 27]. People who somatise have a higher risk of becoming depressed or anxious in subsequent years, beyond baseline levels of depression or anxiety symptoms [28].
This phenomenon emerged above all in midwives: those working in hospitals, those who had contact with a woman who is positive for COVID-19, those under 50 years of age and those working in Northern Italy. This is because those working in hospitals and, especially in contact with COVID-19 positive patients, were subjected to more intense stress [21, 22, 29-32]. This is even more true for a field such as midwifery, where a special relationship should be established with the woman about to give birth, made of empathy, and understanding in order to experience the moment of birth in a positive way [22].
Midwives working in Northern Italy were more involved because the beginning of the pandemic the most affected cities were mostly in Northern Italy [33].
Statistically significant differences were found in almost all clusters considered, between midwives employed in the public sector and freelance midwives. This is because midwives who are public employees have to manage a heavier workload, whereas freelancers can manage their work commitments more freely [23, 34]. Taken together, these results confirm that the impact of the pandemic on the psychological health of healthcare workers is enormous. The interviewees also show a pervasive state of tension that could lead to the development or worsening of symptoms of burnout and psychological distress, which also emerged from the study by Giusti *et al*. [18]. Constant contact with COVID-19 patients and the psychological aspects of their care are correlated with burnout levels [18, 29, 34].
Although midwives were subjected to multiple stressors, they demonstrate sufficient compensation and a high level of resilience [31, 35, 36].
The study described has some limitations: the sample recruited is very small with a higher prevalence of midwives residing in Northern Italy and composed of only women. Several studies, using the RSA scale, show that the female population has a greater ability to perceive, evaluate and describe their emotional reactions to stressors [37, 38].

CONCLUSIONS

Obstetricians, as well as all healthcare personnel, found themselves facing the COVID-19 pandemic.

The heavy workload, the constant worry about themselves and their loved ones, working in close contact with COVID-19 positive patients, and having to face death from the virus every day negatively affected the health care personnel. It turns out that resilience can be a protective factor and that people with the highest level of resilience are better able to cope with a critical situation, facing adversity in a positive way. Resilience factors can be cultivated and improved. Some of them are related to temperament and personal traits (energy, talents, curiosities, *etc*.), others to the type of relationships experienced in childhood (quality of attachment, enhancement, development of social and cognitive skills), still others to the group, the culture, the ethical dimension, the space for inner reflection or spirituality.
Therefore, to develop resilience, it is necessary to adopt a constructive attitude, to accept the difficulties in order to be able to re-elaborate them and deal with them in the most appropriate way without getting carried away by them.
Healthcare professionals constantly subjected to a greater burden of stress, now more than ever due to the COVID-19 pandemic, should therefore be helped in the development of this ability, which is essential in order to cope with numerous difficulties every day, without allowing these to take over causing negative effects on the mind and body.
Implementing resilience-enhancing factors, such as communication, sharing of suffering and access to support, in the context of the health professions should be a priority at this time, not only because it is essential to better manage work, but also because it would have a completely positive effect on overall well-being.

COMPLIANCE WITH ETHICAL STANDARDS

Authors contribution

All authors made substantial contributions to the concept and design, analysis and interpretation of data, and drafting and revisions.

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Study registration

N/A.

Disclosure of interests

The authors declare that they have no conflict of interests.

Ethical approval

N/A.

Informed consent

N/A.

Data sharing

Data are available under reasonable request to the corresponding author.

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