

A Survey Among Italian Pregnant Women and New-mothers During the COVID-19 Pandemic Lockdown.

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Abstract

In response to the COVID-19 pandemics, drastic measures for social distancing have been introduced also in Italy. The purpose of this study was to describe some aspects of lifestyle, access to health services, and mental wellness of Italian pregnant women and new-mothers during the lockdown.

We carried out a web-based survey to assess how pregnant women and new-mothers were coping with the lockdown. Expected outcomes were categorized in different analysis domains: psychological well-being and support, physical exercise, dietary habits, access to care, delivery and obstetric care, neonatal care and breastfeeding.

We included 742 respondents (response rate 86.2%), 603 were pregnant (81.3%) and 139 (18.7%) had delivered during lockdown. We found a high score for anxiety and depression in 62.7% of pregnant women and 61.9% of new-mothers. During the lockdown, 61.9% of pregnant women reduced their physical exercise, and 79.8% reported to eat in a healthier way. 94.2% of new-mothers reported to have breastfed their babies during hospital staying. Regarding the impact of restrictive measures on breastfeeding, no impact was reported by 56.1% of new-mothers, a negative impact by 36.7%.

The higher prevalence of anxiety and depressive symptoms in pregnant women and new-mothers should be a public health issue. Clinicians might also consider to recommend and encourage “home” physical exercise. On the other hand, most women improved their approach towards healthy eating during the lockdown and a very high breastfeeding rate was reported soon after birth: these data are an interesting starting point to develop new strategies for public health.

Introduction

Since severe acute respiratory syndrome SARS-CoV-2 started to spread across several countries, the World Health Organization declared that the outbreak was a public health emergency of international concern (1).

Based on the Chinese experience (2), starting from March 9th, 2020, drastic measures have been introduced also in Italy: citizens are banned from leaving their home unless for daily needs that cannot be postponed. As a consequence, a sudden and radical change in habits and lifestyles of the whole population, a minimization of socialization and changes in both interpersonal relationships and organization of work occurred.

Hospital activity has radically changed: many Departments were closed in order to create COVID-19 dedicated hospital wards, the rest of the clinical activity was downsized and contacts with patients were reduced to the minimum. Measures such as re-adaptation of care priorities and several restrictions will presumably lead to changes in the health of the population in the coming months or years.

There are still many unanswered questions regarding the effect of lockdown measures on pregnant women (3) (4). Healthcare workers are facing an important challenge in terms of reshaping obstetric care in order to avoid unnecessary exposure to patients, without renouncing the required attention. Although obstetric units have not diminished their working activity, there have been changes in territorial and hospital care. Some activities whose usefulness is established by evidence, have undergone through major downsizing. The pre-birth courses have been officially stopped; some screening tests have been performed much less frequently, due to reduced patient access to the tests, or due to difficulties in providing the services. Family members and partners presence during important moments, such as ultrasound screens and hospitalization, has been reduced for safety reasons.

Most of the pregnant women and new-mothers found themselves unable to leave their home, often with other children to look after, not able to count on any domestic help (5). On the other hand, some women may have welcomed the chance of working from home or in some cases counting on a larger presence of their partner.

It can be assumed that these changes may have an influence on pregnancy, puerperium and newborn management that obstetricians should consider (4). While published studies on the possible effects of COVID-19 disease in pregnant women and infants are increasing (6), there are only few studies (7) (8) (9) dealing with the psychological effect of the pandemic on pregnant women. To the best of our knowledge, there are still no studies in literature about how mothers are coping with the lockdown and highlighting the needs of this population group in that period.

The purpose of this study is to describe some aspects of lifestyle, access to health services and mental wellness of Italian pregnant women and new-mothers during the lockdown.

Materials And Methods

Study Design, setting and participants

We carried out a cross-sectional survey by using an anonymous online questionnaire. The survey addressed both pregnant women and women who gave birth during the lockdown. As the Italian government recommended to minimize face-to-face interaction, the questionnaire was web based; individuals were offered the opportunity to participate through social media (pages of Facebook and Instagram dedicated to new-mothers and pregnant women) and through newspapers sections for women issues.

Individuals were directed via an electronic link to an online survey platform. Duplicate entries were avoided by asking people to provide their e-mail address at the end of the survey; duplicate entries having the same e-mail address were eliminated before analysis and the first entry was kept. The survey was not displayed a second time once the responder had filled it in, but the link to pass it on to others was available. Therefore, snowball sampling technique, where existing study subjects recruit future subjects among their acquaintances, was also used. The survey period lasted for 4 weeks through the lockdown period, from April 9th, 2020 to May 3rd, 2020.

Ethical considerations

The survey was preceded by a fact sheet including information on what the research was about, the reason for conducting the research, how the data will be used, how privacy of data will be maintained, information in case the respondents changed their mind during the survey, along with contact details for further information. Afterward, the consent to participate was required to proceed with the survey. The participation in the survey was voluntary and anonymous. Approval was obtained from the local Ethical Committee (Comitato Etico Interaziendale Novara CE 71/20), which conformed to the principles embodied in the Declaration of Helsinki.

Variables and data sources

Expected outcomes of the baseline analysis concerned different topics that could be influenced by the lockdown measures, and were categorized in different analysis domains, related to pregnancy and puerperium.

About pregnancy the analyzed domains were 1- psychological well-being and support; 2- physical exercise; 3- dietary habits; 4- access to care. About puerperium the analyzed domains were 5- psychological well-being and support; 6- delivery and obstetric care; 7- neonatal care and breastfeeding.

Due to the lack of validated questionnaires about this topic, authors reviewed previous and current surveys (10) on the impacts of outbreaks and included additional questions related to pregnancy and birth (11) (12) (13). To investigate the psychological impact we used the Patient Health Questionnaire for Depression and Anxiety (the PHQ-4)(14). The questionnaire was tested in a sample of voluntary pregnant women and new-mothers, with different characteristics (age, education, parity) who reviewed the questionnaire individually and provided verbal feedback, and it was also submitted to a panel of experts (psychologist, midwife, epidemiologist), for content validity and construct coherence. Completion time was 15 minutes.

The survey consisted of a common part including sociodemographic and psychological questions, addressing both pregnant women and new-mothers, followed by a specific part dedicated either to pregnant women or women who gave birth during the lockdown, each divided into sub-sections of questions, addressing the different analysis domains.

Statistical analysis

We analyzed frequency distributions of variables separately for pregnant women and new-mothers, calculated means and standard deviations for continue variables. T-test was used to study the differences between categories in the continuous variable (expressed as mean and SD), while for the categorical variables (expressed as number and percentage of the total) the reference test was chi-square (χ^2). Level of significance was set with $p < 0.05$. Poisson regression multivariate models were used to calculate prevalence ratios and relative 95% confidence intervals. Statistical analysis was performed using Stata Statistical Software: Release 15. StataCorp LLC.

Results

We received responses from 861 women (Fig. 1). Eight (0.9%) women did not give their consent to participate, while 111 (12.9%) were excluded because either not pregnant or not having given birth during the restrictive measures. We included 742 respondents from 107

different cities in Italy, who had completed the questionnaires (completion rate: 96%). Overall, 603 respondents were pregnant (81.3%) and 139 (18.7%) respondents had delivered in the lockdown period.

Sociodemographic, living, housing and psychological characteristics of pregnant women and new-mothers

Data are reported in Table 1. The overall response rate for these items was >99%.

Table 1
Socio-demographic characteristics, housing and living conditions

	Parameter	Category	Number (N = 603) %		Number (N = 139) %	
Socio-demographic characteristics	Age	From 18 to 34	381	63.2%	82	59.0%
		From 35 to 48	222	36.8%	57	41.0%
	Education	Less than Bachelor	230	38,2%	37	26.6%
		More than bachelor	372	61,8%	102	73.4%
	Area of residence	North	486	80,6%	125	89.9%
		Centre	65	10,8%	12	8.6%
		South	49	8,1%	2	1.4%
		Abroad	3	0,5%		
	City or village	City or suburbs of a city	285	47,4%	60	43,2%
		Village	316	52,6%	79	56,8%
	Economical resources	Not much adequate	312	52,0%	72	52,6%
		Very adequate	288	48,0%	65	47,4%
	Working conditions	Workers	456	75,7%	108	78,3%
Not workers		146	24,3%	30	21,7%	
Housing	House size	Less than 100 sm	389	64.5%	94	67,6%
		More than 100 sm	468	35.5%	45	32,4%
	Satisfaction with the house	Not much	233	38.6%	54	38,8%
		Satisfied	370	61.4%	85	61,2%
	Presence of a garden	Yes	253	42.0%	53	38,4%
		No	350	58.0%	85	61,6%
	Adequacy of electronic devices	Not much adequate	137	22.7%	41	29,5%
		Very adequate	466	77.3%	98	70,5%
Social-living	Presence of partner	Always at home	312	51.7%	70	50,4%
		At home but still going to work	277	45.9%	65	46,8%
		Not co-living	14	2.3%	4	2,9%
	Other children at home	No	408	67.7%	99	71,2%
		Yes	195	32.3%	40	28,8%
	Someone else co-living	No	559	92.7%	123	88,5%
		Yes	44	7.3%	16	11,5%
	Contacts with other people	No	379	62.8%	71	51,4%
		Yes	224	37.2%	67	48,6%
	Adherence to the restrictions	From little to average	111	18.4%	26	18,7%
		High	492	81.6%	113	81,3%
Psychological well being	Depression and anxiety score	Normal to mild	225	37.3%	53	38,1%

Parameter	Category	Number (N = 603) %		Number (N = 139) %	
and support People supporting (more than one choice available)	Moderate to severe	378	62.7%	86	61,9%
	Partner	502	83.2%	121	87,1%
	Mother	395	65.5%	92	36,7%
	Sister/brothers	233	38.6%	51	61,2%
	Friends	287	47.6%	60	43,2%
	Gynecologist	83	13.6%	10	7,2%
	Midwife	68	13.6%	27	19,4%
	Other women in pregnancy	112	18.6%	42	30,2%
	Internet pages	40	6.6%	8	5,7%

Pregnant women were aged 18 to 48 years with a mean of 33.1 ± 4.3 , 61.8% of the sample had at least a bachelor's degree, 48.0% of the sample said money were highly sufficient to their needs. The PHQ-4 score ranged from moderate to severe for 62.7% of women. 83.5% of women recognize the partner as the person who is supporting them during the lockdown.

New-mothers were aged 25 to 41 years with a mean of 33.6 ± 4.0 , 73.4% had at least a bachelor's degree, 47.4% of the sample said money were highly sufficient to their needs. Similar to pregnant women, also for 61.9% of new-mothers the PHQ-4 score ranged from moderate to severe and the partner was the most cited as the person supporting them (87.1%). Most of respondents were living in Northern Italy.

Changes in the life of pregnant women during the lockdown

Table 2 describes some aspects of pregnant women's life and how the social distancing measures changed their habits (supporting people, dietary habits, physical exercise, and access to care). The overall response rate for these items was > 96%. Many women (79.1%) declared the greater presence of the partner positively influences the pregnancy. Besides, 74.3% of them was afraid of delivering alone and 44.3% said the current situation generates stress about the future. About physical exercise, the reported minutes of weekly physical activity were significantly decreased during quarantine (145.9 minutes 95% CI 137.4–154.5 before versus 105.7 minutes 95% CI 96.8–114.6 during the lockdown, $p < 0.05$). Specifically, 61.9% of women during the lockdown reduced their physical exercise. Concerning dietary habits, according to 79.8% of women, restrictions gave them the chance to eat healthier.

Table 2
Changes in the life of pregnant women during the lockdown

	Parameter	Category	N = 603	%
Other psychological aspects	Influence of partner at home	Positive influence	447	79,1%
		Negative influence	11	1,9%
		No influence	107	18,9%
	Influence of children at home	Positive influence	52	26,7%
		Negative influence	72	36,9%
		No influence	71	36,4%
	Fear of delivering alone	Low	149	25,7%
		High	431	74,3%
Stress about future	Low to average	336	55,7%	
	High	267	44,3%	
Physical exercise	Weekly exercise before the restrictions	More than 2 hours	270	58,4%
		Less than 2 hours	192	41,6%
	Weekly exercise after the restrictions	More than 2 hours	140	30,3%
		Less than 2 hours	322	69,7%
	Changes pre-post lock-down of weekly minutes	As before	88	17,4%
		More than before	105	20,7%
		Less than before	313	61,9%
	Restrictions gave you the chance to practice more	Yes	87	14,4%
		No	516	85,6%
	Not walking outside: influence on your wellenss	Low	487	80,9%
High		115	19,1%	
Dietary habits	Restrictions gave you the chance to eat more healthy	Yes	481	79,8%
		No	122	20,2%
Access to care	Participation to online pre birth course	Currently participating	151	25,1%
		About to start	10	1,7%
		Not participating	440	73,2%
	Access to emergency room	Give up to go to ER	72	11,9%
		No evenience	531	88,1%
	How did you solve the problem (N = 72)	Phone call with Gynecologist	34	47,2%
		Phone call with midwife	17	23,6%
		Visit to private Gynecologist	14	19,4%
		Others	7	9,7%
	Have you skipped any planned visit?	Yes	159	26,4%
No		444	73,6%	

Parameter	Category	N = 603	%
Have you skipped any planned exam or vaccine?	Yes	112	18,7%
	No	486	81,3%

Regarding the access to health-care services, only 25.1% of women in our sample was attending an online pre-birth course and 11.9% of them avoided to go to an ob-gyn emergency room because of the fear of contagion, preferring a phone contact with a gynecologist or a midwife. 26.4% of our sample skipped some planned visit and 18.7% of them skipped planned exams or vaccines.

The experience of delivering during the lockdown for new-mothers

Table 3 describes the experience of delivery and of baby management during the lockdown. The overall response rate for these items was > 99%. The mean gestational age at the time of delivery was 39.4 ± 1.3 weeks (range 36–42 weeks). 84.2% of the partners had the possibility to assist during labor. 75.3% of women declared they were afraid of giving birth during the COVID-19 pandemic and they reported that the reality was as they expected in 50.8% of cases, better than expected in 36.2%.

Table 3
The experience of delivering during the lockdown for new-mothers

	Parameter	Category	N = 139	%
Delivery and obstetrics care	Delivery mode	Vaginal Eutocic	96	69,1%
		Vaginal dystocic	22	15,8%
		Cesarean section	21	15,1%
	Presence of partner during delivery	Yes	117	84,2%
		No	22	15,8%
	Afraid of receiving worst assistance because of the pandemic	Yes	60	44,1%
		No	76	55,9%
	Reality versus expectations for you	As expected	70	50,7%
		Better	50	36,2%
		Worst	18	13,0%
Neonatal care and breastfeeding	Required intensive neonatal care	Yes	15	10,8%
		No	124	89,2%
	Afraid of receiving a worse neonatal assistance	Yes	36	26,0%
		No	102	74,0%
	Reality versus expectations for your baby	As expected	83	59,7%
		Better	42	30,2%
		Worst	14	10,1%
	Influence of restrictions on neonatal management	No influence	43	30,9%
		Negative influence	85	61,2%
		Positive influence	11	7,9%
	Breastfeeding during hospital stay	Yes	131	94,0%
		No	8	6,0%
	Type of nutrition	Exclusive breastfeeding	98	70,5%
		Formula feeding	38	27,3%
		Human donor milk	3	2,2%
	Continued breastfeeding after discharge	Yes	132	95,0%
		No	7	5,0%
	Still breastfeeding at the time of survey	Yes	126	90,6%
		No	13	9,4%
	Influence of restrictions on breastfeeding	No influence	78	56,1%
Negative influence		51	36,7%	
Positive influence		10	7,2%	

Parameter	Category	N = 139	%
Who supported you for breastfeeding after the discharge (more than one choice available)	Midwife	40	28.8%
	Partner	27	19.4%
	Relative or friend	18	12.9%
	Pediatrician	4	2.9%
	No support	74	53.2%

Overall, 61.1% of the new-mothers stated that the restrictive measures had a negative impact on their baby management, 28.1% declared they had no impact. Most of the respondents reported to have breastfed their babies during hospital staying (94.2%), and about two-thirds of them started breastfeeding within the first two hours after delivery (64.7%). During hospital staying, 70.5% of the babies were exclusively breastfed, 27.3% received formula feeding, and 2.2% received human donor milk. The majority of the new-mothers declared to have continued to breastfed their babies when discharged at home (95.0%), and most of them (91.7%) stated they were still breastfeeding the babies at the time of the survey, reporting exclusive breastfeeding in 85.0% of cases and mixed with formula feeding in 5.8%.

No impact of restrictive measures on breastfeeding was reported by 56.1% of the new-mothers, a negative impact by 36.7% and a positive one by 7.2%. After hospital discharge, the respondents reported having received no support for breastfeeding in 53.2% of cases. In our sample, only 3 women (2.2%) had a confirmed SARS-CoV-2 infection: all of them were separated from their newborns maintaining the possibility to feed them with expressed breast milk.

Adjusted analysis for pregnant women

Table 4 shows χ^2 and prevalence across independent variables and three crucial outcomes in the pregnant women group: PH4 score from moderate to severe, difficulties in healthy eating and reduction in physical exercise.

Table 4
chi 2 and Poisson analysis for pregnant women main outcomes

		Anxiety and depression			Difficulties in healthy eating				Reduction in physical exercise				
		PH4 Moderate to Severe		Chi2 p value	PR (IC 95%)	Yes		Chi2 p value	PR (IC 95%)	Yes		Chi2 p value	PR (IC 95%)
Age	Less than 34	237	62,2%			168	44,1%			201	62,4%		
	From 35	141	63,5%	0,75	1.06 (0.86– 1.31)	100	45,0%	0,82	1.09 (0.84– 1.40)	112	60,9%	0,73	0.98 (0.77– 1.23)
Education	Less than Bachelor	158	68,7%			127	55,2%			112	63,3%		
	More than Bachelor	219	58,9%	0,02	0.91 (0.73– 1.13)	140	37,6%	< 0,001	0.7 (0.54– 0.90)	200	61,0%	0,61	0.96 (0.76– 1.21)
Satisfaction with economical resources	Not much adequate	224	71,8%			153	49,0%			162	64,8%		
	Very adequate	151	52,4%	< 0,001	0.75 (0.61– 0.94)	115	39,9%	0,02	0.92 (0.71– 1.19)	150	59,3%	0,20	0.91 (0.73– 1.14)
Satisfaction with your home	Not much	172	73,8%			119	51,1%			129	65,5%		
	Very much	206	55,7%	< 0,001	0.82 (0.66– 1.01)	149	40,3%	0,01	0.85 (0.66– 1.09)	184	59,5%	0,18	0.92 (0.73– 1.17)
Partner supporting	No	78	77,2%			60	59,4%			52	66,7%		
	Yes	300	59,8%	< 0,001	0.81 (0.63– 1.04)	208	41,4%	< 0,001	0.72 (0.54– 0.97)	261	61,0%	0,34	0.91 (0.68– 1.23)
Contacts With other people	No	240	63,3%			156	41,2%			199	62,2%		
	Yes	138	61,6%	0,67	1.00 (0.81– 1.24)	112	50,0%	0,03	1.24 (0.97– 1.59)	114	61,3%	0,84	0.99 (0.78– 1.25)
Availability of free time	Less than before	102	65,0%		1.05 (0.77– 1.43)	77	49,0%		1.26 (0.87– 1.84)	87	70,2%		1.12 (0.79– 1.57)
	As before	71	65,7%			45	41,7%			55	63,2%		
	More than before	204	60,7%	0,51	1.01 (0.77– 1.34)	145	43,2%	0,38	1.14 (0.81– 1.60)	169	57,7%	0,05	0.92 (0.67– 1.26)
Other children at home	No	251	61,5%			167	40,9%			218	59,6%		
	Yes	127	65,1%	0,39	1.00 (0.80– 1.25)	101	51,8%	0,01	1.20 (0.93– 1.55)	95	67,9%	0,09	1.16 (0.90– 1.48)
Trimester	First	38	69,1%			16	29,1%			39	90,7%		
	Second	112	56,3%		0.84 (0.58– 1.22)	77	38,7%		1.35 (0.79– 2.32)	100	58,1%		0.65 (0.45– 0.94)

	Anxiety and depression				Difficulties in healthy eating				Reduction in physical exercise			
Third	224	64,9%	0,08	0.95 (0.67– 1.35)	173	50,1%	< 0,001	1.69 (1.01– 2.83)	172	59,9%	< 0,001	0.67 (0.47– 0.95)

The prevalence of women with anxiety or depressive moderate to severe score was significantly higher in the group of women with a lower educational attainment and not satisfied with their economic resources and house. Additionally, it was also significantly lower in women who could count on the support of their partner. Finally, there is a trend showing a higher score in the first trimester.

While for most women restrictions gave them the chance to eat healthier, 20.2% of women reported difficulties in healthy eating. Likewise, a lower educational attainment, dissatisfaction with economic resources and house, and the lack of partner supporting are significantly associated to more difficulties in healthy eating during the lockdown. Furthermore, difficulties in healthy eating also directly correlated with having contacts with other people during the lockdown, having children at home and being in the third trimester of pregnancy.

Lastly, during the lockdown there was a significant reduction in physical activity, but this data is transversal to all the respondents and there are no significant differences between groups, except for two variables: women who had reduced the activity are those who during the lockdown had less free time than before, and who were in the first trimester.

Discussion

This study describes how pregnant women managed to cope with the lockdown in Italy. We found a high score for anxiety and depression, despite it cannot be compared to the same score on the same population before the pandemic. Our survey also suggests that the lockdown made it more difficult for pregnant women to exercise for 150 minutes per week in accordance with the ACOG guidelines (15), and we can assume that a reduction in physical exercise will affect the quality of life of pregnant women, as demonstrated in previous studies (16). On the other side it seems that staying at home facilitated the approach to healthy eating, for the group with the partner's support and a better socio-economic status. This is an interesting data that deserves more investigations and it is a starting point to develop new strategies for public health.

Among women who gave birth during the pandemic, although three-fourths of the respondents declared to be afraid of giving birth during such a complex period, the overall experience was as expected or better than expected for 87% of the population. Despite more than half of the new-mothers reported a negative influence on the baby's management and more than one-third of them reported a negative influence on their breastfeeding experience, the breastfeeding rate is consistent or even better than the ones before the pandemic (17), suggesting a slight discrepancy between expectations/perceptions and actual facts, probably due to the anxiety and depression characteristics found in our sample. More than half of new-mothers received no support for breastfeeding after hospital discharge; however almost all of the respondents have continued to breastfed their babies when discharged at home. It could be inferred that, in the impossibility to rely on external support, new-mothers have empowered their internal resources with satisfying results.

The high level of anxiety and depression is consistent with other studies (8) (9). The prevalence in the first trimester is confirmed (9) while, differently from another study (8) in our survey this data was not correlated with age, primiparity and area of living. The correlation with economic difficulties and education is consistent with the literature (16), and some studies suggest that COVID 19 pandemic may even worsen the social inequalities (18). Regarding the fact that a reduction of face to face visits could have occurred to women during the restrictions; a recent survey shows that patients are actually open to alternative models of prenatal care, including remote monitoring(19). Future survey could be done in the same population in order to find out if some changes are considered positively. According to a Cochrane review (20) communicating results of medical investigations by mobile phone messaging may make little or no difference to women's anxiety overall or in women with positive test results, but may reduce anxiety in women with negative test results. We cannot exclude that this method will be more largely implemented in future times, after the COVID-19 emergency and the lesson it gave us about face-to-face contact.

A higher prevalence of anxiety and depressive symptoms in pregnant and new-mother populations should be a public health issue, and screening for perinatal depression and anxiety should be considered during a pandemic. Under the circumstances of social distancing and isolation, psychological hotlines and online counseling would be a smart strategy to manage perinatal mental illness. The same

strategy would be useful to help new-mothers with the baby management. Healthcare professionals, should also ensure patients feel supported by continuing their routine prenatal care through tele-medicine visits (21). Clinicians might also consider recommending and encouraging “home” physical exercise, especially in women in the first trimester, who might be the most worried about the sudden change of their lives.

Isolation, increased stress, and sedentary lifestyle in pregnancy can also lead to adverse pregnancy outcomes, such as preterm birth, gestational diabetes and low birth weight (22)(23). This survey is also a baseline questionnaire for those women who gave consent to be contacted, and they will be followed up as a cohort in order to identify possible complications. In a further part of our project, we are going to describe in greater detail how the lockdown influenced neonatal outcomes.

The first limitation of the present study is related to the non-random sampling: women are enrolled by newspaper advertisements, social media and the snow-ball method; the completeness checks process was not exhaustive. A second limitation is the lack of validated questionnaire designed to capture such a delicate and unique moment. Third, the assessment of depressive and anxiety symptoms through a short scale which relied on a self-reported measure and does not provide a diagnosis. Although these limits, this is the first study to assess some aspects of the lifestyle of pregnant women and new-mothers during the lockdown in Italy. Besides, the web-based method is a strength because it gave us the opportunity to interview a geographically dislocated population during a short time in the lock-down period.

Given the unicity of this SAR-CoV2 pandemic we tried to give an overview of the experience of Italian pregnant women and new-mothers during the lockdown. Next steps will be to incorporate those findings in political choices. The WHO Executive Board recognizes the need to include women in decision making for outbreak preparedness and response, however there is still inadequate women's representation in national and global COVID-19 policy spaces (24). It is also important that health professionals commit themselves to help pregnant women and new-mothers to overcome these difficult times.

Declarations

- Ethics approval and consent to participate:

the consent to participate was required and the participation in the survey was voluntary and anonymous. Approval was obtained from the local Ethical Committee (Comitato Etico Interaziendale Novara CE 71/20), which conformed to the principles embodied in the Declaration of Helsinki.

- Consent for publication: Not applicable
- Availability of data and materials:

The datasets generated and/or analysed during the current study are not publicly available due to privacy reasons but are available from the corresponding author on reasonable request.

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The authors declare that they have no competing interests

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Alice MONZANI, Conceptualization, Data Curation, writing-original draft

Silvia CARISTIA, Formal analysis, Review & Editing

Gianluigi FERRANTE, Review & Editing, Visualization,

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Figures

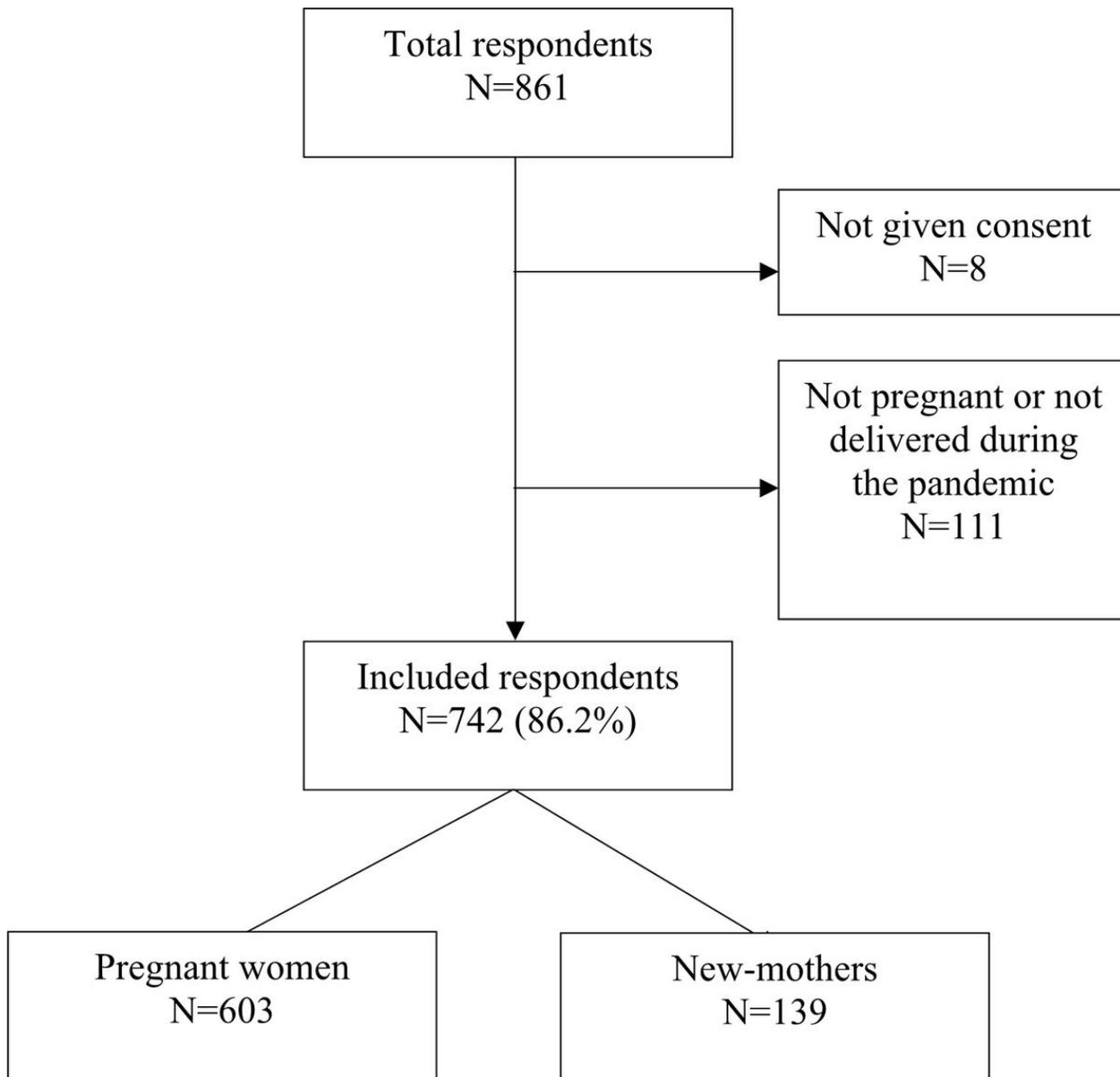


Figure 1

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