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Prevalence and factors associated with anxiety, depression and burnout in gynecology and obstetrics residents during the Covid-19 pandemic.

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Objective: To determine the prevalence of anxiety, depression and burnout in residents of Gynecology and Obstetrics during COVID-19 pandemic in Brazil and its associated factors.

Methods: Cross-sectional study involving all regions of Brazil, through the application of a sociodemographic questionnaire, the Hospital Anxiety and Depression Scale (HAD) and the Maslach Burnout Inventory (MBI-HSS) instrument. Multivariate analysis was performed after adjusting the Poisson model

Results: Among the 719 participating medical residents, screening was positive for anxiety in 75.7% and for depression in 49.8% of cases. Burnout syndrome was evidenced in 41.3% of the physicians studied. Those with depression are more likely to have anxiety (OR 0.797; 95%Cl 0.687 - 0.925) and burnout syndrome (OR 0.847 95%Cl 0.74 - 0.97). Residents with anxiety (OR 0.805; 95%Cl 0.699 - 0.928) and burnout (OR 0.841; 95%Cl 0.734 - 0.963) are more likely to have depression.

Conclusion: High prevalence of anxiety, depression and burnout were found in residents of Gynecology and Obstetrics in Brazil, in addition to important correlations between anxiety-depression and depression-burnout.

Key words: mental health, medical residency, gynecology, obstetrics, COVID-19.

Multivariate regression.

Female gender Married or stable union Married or stable union 0,956 0,83 - 1,10 0,535 R1 0,918 0,78 - 1,08 0,314 R2 0,964 0,82 - 1,13 0,655 R3 0,991 0,88 - 1,22 0,891 Non smoker 0,911 0,67 - 1,24 0,550 No regular physical activity 1,021 0,89 - 1,17 0,765 Inadequate supervision 0,960 0,84 - 1,10 0,563 Use of psychoactive medication 0,912 0,79 - 1,06 0,223 Work hours > 60 hours/week 0,958 0,81 - 1,13 0,620 North region 0,956 0,65 - 1,41 0,821 Northeast region 1,060 0,75 - 1,49 0,741 Southeast region 0,978 0,98 - 0,72 0,883 South region 1,019 0,797 0,69 - 0,92 0,003 Burnout 0,908 0,78 - 1,06 0,215 Depression Age > 28 years 1,045 0,92 - 1,18 0,496 Married or stable union 0,985 0,86 - 1,12 0,819 No regular physical activity 0,944 0,83 - 1,07 0,361 Inadequate supervision 0,985 0,86 - 1,12 0,819 No regular physical activity 0,944 0,83 - 1,07 0,361 Inadequate supervision 0,985 0,86 - 1,12 0,819 No regular physical activity 0,944 0,83 - 1,07 0,361 Inadequate supervision 0,985 0,84 - 1,08 0,467 Use of psychoactive medication 0,928 0,81 - 1,06 0,273 Work hours > 60 hours/week 0,978 0,978 0,84 - 1,08 0,273 Southeast region 0,979 0,81 - 1,16 0,273 Northeast region 0,979 0,81 - 1,18 0,825 South region 1,014 0,82 - 1,25 0,894 Anxiety 0,805 0,70 - 0,93 0,003 Burnout 0,985 0,70 - 0,93 0,003		Variable	OR	CI	adjusted p
Married or stable union R1 R1 R2 R1 R2 R3	Anxiety				
R1			•	•	•
R2 R3			•	,	•
R3			•	•	•
Non smoker 0,911 0,67 - 1,24 0,550 No regular physical activity 1,021 0,89 - 1,17 0,765 Inadequate supervision 0,960 0,84 - 1,10 0,563 Use of psychoactive medication 0,912 0,79 - 1,06 0,223 Work hours > 60 hours/week 0,958 0,81 - 1,13 0,620 North region 0,956 0,65 - 1,41 0,821 Northeast region 0,978 0,98 - 0,72 0,883 South region 0,978 0,98 - 0,72 0,883 South region 0,978 0,98 - 0,72 0,883 South region 0,977 0,69 - 0,92 0,003 Burnout 0,908 0,78 - 1,06 0,215 Depression 0,977 0,69 - 0,92 0,003 Married or stable union 0,985 0,86 - 1,12 0,819 No regular physical activity 0,944 0,83 - 1,07 0,361 Inadequate supervision 0,955 0,84 - 1,10 0,467 Use of psychoactive medication 0,958 0,81 - 1,06 0,273 Work hours > 60 hours/week 0,978 0,84 - 1,14 0,779 Northeast region 0,972 0,76 - 1,25 0,823 Southeast region 0,979 0,81 - 1,18 0,825 South region 1,014 0,82 - 1,25 0,823 Southeast region 0,944 0,83 - 1,07 0,923 Surmout 0,841 0,73 - 0,96 0,013 Burnout Not having kids 1,062 0,85 - 1,32 0,587 Depending on third-party resources 1,053 0,93 - 1,19 0,405 R2 0,991 0,86 - 1,14 0,898 R3 1,052 0,991 0,77 - 1,20 0,536 Work hours > 60 hours/week 0,967 0,83 - 1,10 0,663 Northeast region 0,960 0,77 - 1,20 0,793 South east region 0,960 0,77 - 1,22 0,503 South east region 0,960 0,77 - 1,20 0,793 South east region 0,960 0,77 - 1,20 0,793 South region 0,960 0,77 - 1,20 0,793 South region 0,960 0,77 - 1,20 0,793 South region 0,960 0,77 - 1,20 0,975 Anxiety			•	,	•
No regular physical activity			•	•	·
Inadequate supervision			•	,	·
Use of psychoactive medication Work hours > 60 hours/week North region North region North region Northeast region Noregular physical activity Northeast region			•	,	· ·
Work hours > 60 hours/week		·	•	,	· ·
North region			•	,	•
Northeast region		Work hours > 60 hours/week	•	•	•
Southeast region 0,978 0,98 - 0,72 0,883 South region 1,019 0,74 - 1,40 0,907 Depression 0,797 0,69 - 0,92 0,003 Burnout 0,908 0,78 - 1,06 0,215 Depression 0,908 0,78 - 1,06 0,215 Depression 0,908 0,78 - 1,06 0,215 Depression Age > 28 years 1,045 0,92 - 1,18 0,496 Married or stable union 0,985 0,86 - 1,12 0,819 No regular physical activity 0,944 0,83 - 1,07 0,361 Inadequate supervision 0,955 0,84 - 1,08 0,467 Use of psychoactive medication 0,928 0,81 - 1,06 0,273 Work hours > 60 hours/week 0,978 0,84 - 1,14 0,779 Northeast region 0,972 0,76 - 1,25 0,823 Southeast region 0,979 0,81 - 1,18 0,825 South region 1,014 0,82 - 1,25 0,894 Anxiety 0,805 0,70 - 0,93 0,003 Burnout 0,841 0,73 - 0,96 0,013 Depending on third-party resources 1,053 0,93 - 1,19 0,405 R2 R3 1,052 0,91 - 1,22 0,503 No regular physical activity 0,952 0,84 - 1,07 0,426 Inadequate supervision 0,928 0,84 - 1,05 0,227 Use of psychoactive medication 0,960 0,84 - 1,09 0,536 Northeast region 0,967 0,83 - 1,12 0,663 Northeast region 0,969 0,77 - 1,36 0,864 Mid-west region 0,969 0,77 - 1,26 0,864 Mid-west region 0,969 0,77 - 1,22 0,793 South region 0,996 0,79 - 1,28 0,975 Anxiety 0,914 0,78 - 1,06 0,234			•	,	0,821
South region			•	•	•
Depression Burnout Depression Burnout Depression Burnout Depression Burnout Depression Depression Depression Age > 28 years 1,045 0,92 - 1,18 0,496 Married or stable union 0,985 0,86 - 1,12 0,819 No regular physical activity 0,944 0,83 - 1,07 0,361 Inadequate supervision 0,955 0,84 - 1,08 0,467 Use of psychoactive medication 0,928 0,81 - 1,06 0,273 Work hours > 60 hours/week 0,978 0,84 - 1,14 0,779 Northeast region 0,972 0,76 - 1,25 0,823 Southeast region 0,979 0,81 - 1,18 0,825 South region 1,014 0,82 - 1,25 0,894 Anxiety 0,805 0,70 - 0,93 0,003 Burnout Depending on third-party resources 1,053 0,93 - 1,19 0,405 R2 0,991 0,86 - 1,14 0,898 R3 1,052 0,91 - 1,22 0,503 No regular physical activity 0,952 0,84 - 1,07 0,426 Inadequate supervision 0,928 0,84 - 1,05 0,227 Use of psychoactive medication 0,960 0,84 - 1,09 0,536 Northeast region 0,967 0,83 - 1,12 0,663 Northeast region 0,967 0,83 - 1,12 0,663 Northeast region 0,934 0,66 - 1,31 0,693 South region 0,996 0,77 - 1,22 0,793 South region 0,996 0,77 - 1,22 0,793 South region 0,996 0,79 - 1,28 0,975 Anxiety 0,914 0,78 - 1,06 0,234		Southeast region	•	,	0,883
Burnout		South region	1,019	0,74 - 1,40	0,907
Age > 28 years		Depression	0,797	•	0,003
Age > 28 years Married or stable union No regular physical activity No regular physical activity No pet a composition No regular physical activity Nore physical activity Not having kids Not having kids Nore gular physical activity Nore physical physical activity Nore physical phys		Burnout	0,908	0,78 - 1,06	0,215
Married or stable union 0,985 0,86 – 1,12 0,819 No regular physical activity 0,944 0,83 – 1,07 0,361 Inadequate supervision 0,955 0,84 – 1,08 0,467 Use of psychoactive medication 0,928 0,81 – 1,06 0,273 Work hours > 60 hours/week 0,978 0,84 – 1,14 0,779 Northeast region 0,972 0,76 – 1,25 0,823 Southeast region 0,979 0,81 – 1,18 0,825 South region 0,979 0,81 – 1,18 0,825 South region 1,014 0,82 – 1,25 0,894 Anxiety 0,805 0,70 – 0,93 0,003 Burnout 0,841 0,73 – 0,96 0,013 Burnout Not having kids 1,062 0,85 – 1,32 0,587 Depending on third-party resources 1,053 0,93 – 1,19 0,405 R2 0,991 0,86 – 1,14 0,898 R3 1,052 0,91 – 1,22 0,503 No regular physical activity 0,952 0,84 – 1,07 0,426 Inadequate supervision 0,928 0,84 – 1,07 0,426 Inadequate supervision 0,960 0,84 – 1,09 0,536 Work hours > 60 hours/week 0,967 0,83 – 1,12 0,663 Northeast region 1,025 0,77 – 1,36 0,864 Mid-west region 0,934 0,66 – 1,31 0,693 Southeast region 0,996 0,79 – 1,28 0,975 Anxiety 0,914 0,78 – 1,06 0,234	Depression				
No regular physical activity			1,045	0,92 - 1,18	0,496
Inadequate supervision		Married or stable union	0,985	0,86 - 1,12	0,819
Use of psychoactive medication		No regular physical activity	0,944	0,83 - 1,07	0,361
Work hours > 60 hours/week 0,978 0,84 - 1,14 0,779 Northeast region 0,972 0,76 - 1,25 0,823 Southeast region 0,979 0,81 - 1,18 0,825 South region 1,014 0,82 - 1,25 0,894 Anxiety 0,805 0,70 - 0,93 0,003 Burnout 0,841 0,73 - 0,96 0,013 Burnout Not having kids 1,062 0,85 - 1,32 0,587 Depending on third-party resources 1,053 0,93 - 1,19 0,405 R2 0,991 0,86 - 1,14 0,898 R3 1,052 0,91 - 1,22 0,503 No regular physical activity 0,952 0,84 - 1,07 0,426 Inadequate supervision 0,928 0,84 - 1,05 0,227 Use of psychoactive medication 0,960 0,84 - 1,09 0,536 Work hours > 60 hours/week 0,967 0,83 - 1,12 0,663 Northeast region 0,934 0,66 - 1,31 0,693 South region 0,969 0,77 - 1,22 0,793 South region <t< td=""><td></td><td>Inadequate supervision</td><td>0,955</td><td>0,84 - 1,08</td><td>0,467</td></t<>		Inadequate supervision	0,955	0,84 - 1,08	0,467
Northeast region		Use of psychoactive medication	0,928	0,81 - 1,06	0,273
Southeast region 0,979 0,81 – 1,18 0,825 South region 1,014 0,82 – 1,25 0,894 Anxiety 0,805 0,70 – 0,93 0,003 Burnout 0,841 0,73 – 0,96 0,013 Burnout Not having kids 1,062 0,85 – 1,32 0,587 Depending on third-party resources 1,053 0,93 – 1,19 0,405 R2 0,991 0,86 – 1,14 0,898 R3 1,052 0,91 – 1,22 0,503 No regular physical activity 0,952 0,84 – 1,07 0,426 Inadequate supervision 0,928 0,84 – 1,07 0,426 Inadequate supervision 0,960 0,84 – 1,09 0,536 Work hours > 60 hours/week 0,967 0,83 – 1,12 0,663 Northeast region 0,960 0,77 – 1,36 0,864 Mid-west region 0,934 0,66 – 1,31 0,693 Southeast region 0,969 0,77 – 1,22 0,793 South region 0,996 0,79 – 1,28 0,975 Anxiety 0,914 0,78 – 1,06 0,234		Work hours > 60 hours/week	0,978	0,84 - 1,14	0,779
South region 1,014 0,82 - 1,25 0,894 Anxiety 0,805 0,70 - 0,93 0,003 Burnout 0,841 0,73 - 0,96 0,013 Burnout Not having kids 1,062 0,85 - 1,32 0,587 Depending on third-party resources 1,053 0,93 - 1,19 0,405 R2 0,991 0,86 - 1,14 0,898 R3 1,052 0,91 - 1,22 0,503 No regular physical activity 0,952 0,84 - 1,07 0,426 Inadequate supervision 0,928 0,84 - 1,05 0,227 Use of psychoactive medication 0,960 0,84 - 1,09 0,536 Work hours > 60 hours/week 0,967 0,83 - 1,12 0,663 Northeast region 0,934 0,66 - 1,31 0,693 Southeast region 0,969 0,77 - 1,22 0,793 South region 0,996 0,79 - 1,28 0,975 Anxiety 0,914 0,78 - 1,06 0,234		Northeast region	0,972	0,76 - 1,25	0,823
Anxiety Burnout 0,805 0,70 – 0,93 0,003 0,841 0,73 – 0,96 0,013 Burnout Not having kids 1,062 0,85 – 1,32 0,587 Depending on third-party resources 1,053 0,93 – 1,19 0,405 R2 0,991 0,86 – 1,14 0,898 R3 1,052 0,91 – 1,22 0,503 No regular physical activity 0,952 0,84 – 1,07 0,426 Inadequate supervision 0,928 0,84 – 1,05 0,227 Use of psychoactive medication 0,960 0,84 – 1,09 0,536 Work hours > 60 hours/week 0,967 0,83 – 1,12 0,663 Northeast region 0,934 0,66 – 1,31 0,693 Southeast region 0,969 0,77 – 1,22 0,793 South region 0,996 0,79 – 1,28 0,975 Anxiety 0,914 0,78 – 1,06 0,234		Southeast region	0,979	0,81 - 1,18	0,825
Burnout Not having kids		South region	1,014	0,82 - 1,25	0,894
Not having kids		Anxiety	0,805	0,70 - 0,93	0,003
Not having kids 1,062 0,85 - 1,32 0,587 Depending on third-party resources 1,053 0,93 - 1,19 0,405 R2 0,991 0,86 - 1,14 0,898 R3 1,052 0,91 - 1,22 0,503 No regular physical activity 0,952 0,84 - 1,07 0,426 Inadequate supervision 0,928 0,84 - 1,05 0,227 Use of psychoactive medication 0,960 0,84 - 1,09 0,536 Work hours > 60 hours/week 0,967 0,83 - 1,12 0,663 Northeast region 1,025 0,77 - 1,36 0,864 Mid-west region 0,934 0,66 - 1,31 0,693 South east region 0,969 0,77 - 1,22 0,793 South region 0,996 0,79 - 1,28 0,975 Anxiety 0,914 0,78 - 1,06 0,234		Burnout	0,841	0,73 - 0,96	0,013
Depending on third-party resources 1,053 0,93 - 1,19 0,405 R2 0,991 0,86 - 1,14 0,898 R3 1,052 0,91 - 1,22 0,503 No regular physical activity 0,952 0,84 - 1,07 0,426 Inadequate supervision 0,928 0,84 - 1,05 0,227 Use of psychoactive medication 0,960 0,84 - 1,09 0,536 Work hours > 60 hours/week 0,967 0,83 - 1,12 0,663 Northeast region 1,025 0,77 - 1,36 0,864 Mid-west region 0,934 0,66 - 1,31 0,693 South east region 0,969 0,77 - 1,22 0,793 South region 0,996 0,79 - 1,28 0,975 Anxiety 0,914 0,78 - 1,06 0,234	Burnout				
R2 R3 R3 No regular physical activity No regular physical activity R5 R6 R7 R7 R8		Not having kids	1,062	0,85 - 1,32	0,587
R3 1,052 0,91 – 1,22 0,503 No regular physical activity 0,952 0,84 – 1,07 0,426 Inadequate supervision 0,928 0,84 – 1,05 0,227 Use of psychoactive medication 0,960 0,84 – 1,09 0,536 Work hours > 60 hours/week 0,967 0,83 – 1,12 0,663 Northeast region 1,025 0,77 – 1,36 0,864 Mid-west region 0,934 0,66 – 1,31 0,693 Southeast region 0,969 0,77 – 1,22 0,793 South region 0,996 0,79 – 1,28 0,975 Anxiety 0,914 0,78 – 1,06 0,234		Depending on third-party resources	1,053	0,93 - 1,19	0,405
No regular physical activity 0,952 0,84 - 1,07 0,426 Inadequate supervision 0,928 0,84 - 1,05 0,227 Use of psychoactive medication 0,960 0,84 - 1,09 0,536 Work hours > 60 hours/week 0,967 0,83 - 1,12 0,663 Northeast region 1,025 0,77 - 1,36 0,864 Mid-west region 0,934 0,66 - 1,31 0,693 Southeast region 0,969 0,77 - 1,22 0,793 South region 0,996 0,79 - 1,28 0,975 Anxiety 0,914 0,78 - 1,06 0,234		R2	0,991	0,86 - 1,14	0,898
Inadequate supervision 0,928 0,84 - 1,05 0,227 Use of psychoactive medication 0,960 0,84 - 1,09 0,536 Work hours > 60 hours/week 0,967 0,83 - 1,12 0,663 Northeast region 1,025 0,77 - 1,36 0,864 Mid-west region 0,934 0,66 - 1,31 0,693 Southeast region 0,969 0,77 - 1,22 0,793 South region 0,996 0,79 - 1,28 0,975 Anxiety 0,914 0,78 - 1,06 0,234		R3	1,052	0,91 - 1,22	0,503
Use of psychoactive medication 0,960 0,84 – 1,09 0,536 Work hours > 60 hours/week 0,967 0,83 – 1,12 0,663 Northeast region 1,025 0,77 – 1,36 0,864 Mid-west region 0,934 0,66 – 1,31 0,693 Southeast region 0,969 0,77 – 1,22 0,793 South region 0,996 0,79 – 1,28 0,975 Anxiety 0,914 0,78 – 1,06 0,234		No regular physical activity	0,952	0.84 - 1.07	0,426
Work hours > 60 hours/week 0,967 0,83 - 1,12 0,663 Northeast region 1,025 0,77 - 1,36 0,864 Mid-west region 0,934 0,66 - 1,31 0,693 Southeast region 0,969 0,77 - 1,22 0,793 South region 0,996 0,79 - 1,28 0,975 Anxiety 0,914 0,78 - 1,06 0,234		Inadequate supervision	0,928	0,84 - 1,05	0,227
Northeast region 1,025 0,77 – 1,36 0,864 Mid-west region 0,934 0,66 – 1,31 0,693 Southeast region 0,969 0,77 – 1,22 0,793 South region 0,996 0,79 – 1,28 0,975 Anxiety 0,914 0,78 – 1,06 0,234		Use of psychoactive medication	0,960	0,84 - 1,09	0,536
Mid-west region 0,934 0,66 – 1,31 0,693 Southeast region 0,969 0,77 – 1,22 0,793 South region 0,996 0,79 – 1,28 0,975 Anxiety 0,914 0,78 – 1,06 0,234		Work hours > 60 hours/week	0,967	0,83 - 1,12	0,663
Southeast region 0,969 0,77 – 1,22 0,793 South region 0,996 0,79 – 1,28 0,975 Anxiety 0,914 0,78 – 1,06 0,234		Northeast region	1,025	0,77 - 1,36	0,864
South region 0,996 0,79 – 1,28 0,975 Anxiety 0,914 0,78 – 1,06 0,234		Mid-west region	0,934	0,66 - 1,31	0,693
South region 0,996 0,79 – 1,28 0,975 Anxiety 0,914 0,78 – 1,06 0,234		Southeast region	0,969	0,77 - 1,22	0,793
Anxiety 0,914 0,78 – 1,06 0,234			0,996	0,79 - 1,28	0,975
		•	0,914	0,78 - 1,06	•
			0,847	0,74 - 0,97	•

OR: odds ratio; CI confidence interval; R1: first-year resident physician; R2: second-year resident physician; R3: third-year resident physician

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