

Common mental disorders in adult women: identifying the most vulnerable segments

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Abstract *This study aimed to evaluate the socio-economic and demographic factors, behaviors and morbidities related to common mental disorders in adult women. This was a cross-sectional population-based study with cluster sample. We analyzed 848 women from a household survey held in Campinas, in 2008/2009. We used the Self-Reporting Questionnaire (SRQ-20) to evaluate common mental disorders. We estimated prevalence ratios by Poisson regression in hierarchical model of three steps, considering the weights relating to the sampling design. The prevalence of common mental disorders was 18.7%. The hierarchical model showed that older women, with low education level, housewives, separated or widowed, who did not consume fruit/vegetables daily, who slept six or fewer hours per night, who presented several chronic diseases and health problems, and with report of some type of violence were more vulnerable to common mental disorders and, therefore, should be treated with priority by health services. Early diagnosing women with common mental disorders, as well as accompanying and treating them, contribute for reducing the impacts on female quality of life.*

Key words *Women's health, Mental disorders, Mental health, Prevalence, Health surveys*

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Introduction

According to the World Health Organization (WHO), one in four people will develop some mental disorder during life¹. Characterized by depressive symptoms, anxiety state, and a set of nonspecific somatic complaints², common mental disorders (CMD) is higher in women than in men³. Mental disorders are the main source of disability-adjusted life years (DALYs) for women between 15 and 24 years⁴. It is expected that, until 2020, depression will be the leading cause of DALYs in women with reproductive age in developing countries, in front of health problems directly related to pregnancy, childbirth, and postpartum⁵. The harms of mental disorders on quality of life are due to the functional impairment with loss of productivity at work and social isolation, and lead to increased use of health services^{6,7}, which produces high costs for the health system and for individuals and their families, and also less measurable costs, as the individual and family group suffering.

A meta-analysis that evaluated 174 publications, from 1980 to 2013, of 63 countries of high, medium, and low income, 17.6% of adults showed common mental disorders in the past 12 months, and in women this prevalence was 19.7%. The authors highlighted that, regardless of the economic situation of the country, women showed higher prevalence of mood and anxiety disorders than men³.

The higher female vulnerability to mental disorders may be due to changes in the endocrine system that occur in the premenstrual, postpartum, and menopause period; small differences in the brain, with some features more common in the brains of women than of men⁸; and gender inequalities, which have consequences going from overload of domestic work⁹ to high rates of violence affecting women¹⁰. In addition to biological and social factors that can collaborate for the difference in the percentages of mental disorders between men and women, some risk factors seem to be common to both, such as psychosocial conditions and support, socioeconomic status, lifestyle, and health situation¹¹.

Although it is understood that women present greater vulnerability, we need more understanding about the socioeconomic conditions, lifestyle, and comorbidities associated with mental disorders, particularly among women. Few Brazilian studies have investigated the common mental disorder specifically in the female population. According to a systematic review from

1997 to 2009 on common mental disorders in the adult Brazilian population, the authors identified only three specific studies with women, all carried out in northeastern Brazil, which evaluated the prevalence of CMD in the last year according to labor market integration, with results higher than the world's, ranging from 28.1 to 36.8%¹².

Even though there are specific areas of mental disorders, such as depression and anxiety disorder, this article focuses on CMD, measured by the Self-Reporting Questionnaire (SRQ-20), widely used in population-based health surveys. The aim of this study was to determine the prevalence of CMD among women of the city of Campinas and to identify the association of this disorder with socioeconomic and demographic variables, health-related behaviors, health status, and morbidities. Knowing the segments of women more vulnerable to common mental disorders allows the planning of actions focused on women's health that minimize the harm to the quality of life in all the female life cycle, as well as the expenses of the public health system.

Methods

This was a cross-sectional population-based study that used data from the *Campinas Municipal Health Survey* (ISACamp), conducted between 2008 and 2009.

The sampling process of ISACamp 2008/2009 involved two stages. In the first stage, 50 census tracts were selected in the urban area of the city of Campinas with probability proportional to the number of households. System selection was performed, in which the tracts were previously ordered by the percentage of heads-of-families with university degrees. In the second stage of the sample, after preparation of updated list of the household addresses, household were selected from 50 previously selected census tracts.

The sample size was defined considering an estimated proportion of 0.50, with a maximum error of 4 to 5 percentage points, with a 95% confidence interval (95%CI), and a design effect of 2, resulting in 1000 individuals for each of the three age brackets: adolescent (10 to 19 years), adult (20 to 59 years), and elderly (60 years or more). Expecting an 80% response rate, the sample size was corrected 1,250 individuals in each bracket. Based on the probability of family members from each age bracket living in the household, according to data from the 2000 National Population Census (Instituto Brasileiro de Geografia e Es-

estatística; <http://www.ibge.gov.br>), 2,150,700, and 3,900 households were selected, respectively, for interviews with adolescents, adults, and elderly. All household residents belonging to the selected age bracket were interviewed (further details of the sampling plan can be found at: http://www.fcm.unicamp.br/fcm/sites/default/files/plano_de_amostragem.pdf). In this study, we only analyzed data on female adults 18 to 64 years of age, totaling 848 women in the sample.

The information on demographic, socioeconomic factors, health-related behaviors, health conditions, and use of health services was obtained by a structured questionnaire, previously tested, applied by trained and supervised interviewers. The interviews were conducted directly with the woman selected.

The variables analyzed in this study were:

- *Common mental disorders:* the presence of CMD was assessed by the Self-Reporting Questionnaire 20 (SRQ-20), developed by the World Health Organization for the tracking of suspect cases of CMD in developing countries. The questions were related to the past 30 days. SRQ-20 consists of 20 questions. The responses are dichotomous and, for each affirmative answer, one point is assigned, totalizing 20 points in the case of all responses being positive. We considered as possible cases of CMD women who scored six or more points¹³.

- *Demographic and socioeconomic variables:* age bracket (18 to 29; 30 to 49, and 50 to 64); self-reported skin color/race (white, black, and brown. We excluded yellow skin color/race because of the low number of women, $n = 4$); religion (Catholic, Protestant, without religion, and others); education level (in years of study and categorized into: 0 to 8, 9 to 12, and 13 or more years); occupation (paid workers, unemployed, retired, housewives, and students. We classified as paid workers the women who declared exercising a paid activity, even if at the time of research they were temporarily away due to illness or retirement but continued working being paid; as unemployed those who were not working, but declared to be looking for a job; as retired those who no longer were paid workers and who received the salary of social security or pension plan; as housewives those who did not practice any remunerated activity and declared to be housewives; and as students those who exercised no remunerated activity and only dedicated themselves to studies); *per capita* monthly family income (calculated as times the monthly minimum wages (MW) and categorized into: \geq

2 MW and < 2 MW); marital status (married, living together/cohabitating, separated/divorced/widowed, and single); number of children (none, 1 to 2, and 3 or more); number of household members (1 to 2, 3 to 4, and 5 or more); presence of housemaid (yes or no); and number of household assets (11 or more, 6 to 10, or 5 to 0).

- *Health-related behaviors:* risk of alcohol consumption evaluated by the Alcohol Use Disorder Identification Test (AUDIT), composed of ten items, considered positive with 8 points or more¹⁴; frequency of alcohol consumption (does not drink, ≤ 1 times/week, and ≥ 2 times/week); smoking habit (never smoked, smoker, and former smoker. We considered non-smokers those who reported never having smoked, former smokers those who smoked more than 100 cigarettes during life, but had ceased consumption, and smokers those who reported current cigarette use); leisure-time physical activity (active/insufficiently active, and inactive), evaluated by the International Physical Activity Questionnaire (IPAQ), translated and submitted to validation study in Brazil¹⁵. The WHO¹⁶ considered as active the women who practiced at least 150 minutes of moderate physical activity or 75 minutes of vigorous physical activity per week, in sessions at least 10 minutes long, as insufficiently active those who practiced physical activity below this level, and inactive those that did not practice leisure physical activity; consumption of fruits or vegetables (daily and non-daily), according to the Ministry of Health¹⁷; and average daily duration of sleep (≥ 7 hours and ≤ 6 hours).

- *Health status and morbidities:* chronic diseases (no or yes), reported as having been diagnosed by a physician or other health professional, according to a checklist: arterial hypertension, diabetes, heart disease, rheumatism/arthritis/arthrosis, asthma/bronchitis/emphysema, tendinitis/repetitive strain injury (RSI)/work-related musculoskeletal disorder (WRMD), and circulatory problem; number of chronic diseases reported among those related (none, 1, 2, 3, and 4 or more); reported health problems (no or yes): headache/migraine, back pain/back problem, allergy, dizziness/vertigo, insomnia, and urinary problem; number of self-reported health problems among those related (2 or less, 3, 4, and 5 or more); occurrence of accident and episode of violence in the last year (no or yes); body mass index (BMI), calculated with self-reported weight and height information (eutrophic: $\text{BMI} \geq 18.5$ to $< 25 \text{ kg/m}^2$; low weight: $\text{BMI} < 18.5 \text{ kg/m}^2$; overweight: $\text{BMI} \geq 25$ to $< 30 \text{ kg/m}^2$; and obesity:

BMI ≥ 30 kg/m²); and self-rated health (excellent, very good, good, and bad/very bad).

In this study, the dependent variable was common mental disorders, evaluated by SRQ-20. The independent variables were the demographic and socioeconomic indicators, behaviors, and health conditions and morbidities; age (continuous) was used for control of confounding in the bivariate analyses and kept in the final model.

The associations between variables were measured by the Chi-square test with 5% significance. Multiple Poisson regression models with robust variance were used to estimate the adjusted prevalence ratios and their 95% confidence intervals (95%CI). We conducted a hierarchical model of Poisson regression in three steps. In the first step of the model, we introduced the socioeconomic and demographic variables with $p < 0.20$ in the bivariate analysis; those that presented $p < 0.05$ in the association with CMD remained in the model. In the second step, in addition to the variables that remained in the previous step, we added health-related behaviors with $p < 0.20$ and kept those with $p < 0.05$. In the third step, we included the number of chronic diseases, the number of health problems, BMI, and accidents and violence suffered in the past year, keeping in the model variables that presented a significance level lower than 5% ($p < 0.05$). The statistical analyses performed with the program Stata version 11.0, module *svy* (Stata Corp., College Station, USA), and considered the sample weights and the design effect. This research project was approved by the institutional Review Board of the School of Medicine at University of Campinas (UNICAMP). All survey participants signed the informed consent form.

Results

The sample of this study consisted of 848 women aged between 18 and 64 years. The prevalence of CMD among adult women in the city of Campinas, measured by SRQ-20, was 18.7% (95%CI: 14.2-23.2).

In Table 1, after age adjustment, the prevalence ratios of CMD were significantly higher in women with 30 years or more, which reported black race/color, with up to twelve years of education level, housewives, with *per capita* monthly family income of less than two minimum wages, separated/divorced/widowed, and who had three or more children, compared to the respective reference categories.

Among health-related behaviors, women who smoked, physically inactive, who did not consume fruits or vegetables daily, and that slept 6 hours or less per night presented prevalence ratios of CMD significantly higher after the age adjustment (Table 2).

Table 3 presents the prevalence of CMD according to chronic diseases, reported health problems, accidents and violence, body mass index, and health self-evaluation. After age adjustment, women with medical diagnosis of arterial hypertension, heart disease, rheumatism/arthritis/arthritis, asthma/bronchitis/emphysema, tendonitis/RSI/WRMD, and circulatory problem, and who reported headache, back pain, dizziness/vertigo, insomnia, and urinary problem had higher prevalence of CMD. Among chronic morbidities, the higher prevalence of mental disorders were observed in women with circulatory problem (PR = 2.58), tendonitis/RSI/WRMD (PR = 2.52), and rheumatism/arthritis/arthritis (PR = 2.48). Regarding health problems, women with insomnia stood out by presenting 4.07 times more prevalence of CMD compared to those who did not mention this problem, followed by women with urinary problem (PR = 2.79) and by those who reported dizziness/vertigo (PR = 2.69). We observed a significant increase in the prevalence of CMD with the increasing number of chronic diseases and health problems. Having four or more chronic diseases increased in 7.69 times the occurrence of CMD and reporting five or more health problems accounted for 2.86 times more mental disorders. Women who have suffered violence in the previous year showed a significantly higher prevalence of CMD (PR = 2.82) in relation to the absence of this situation. Obese women presented 1.67 times more CMD than eutrophic women. Those who have self-rated health as good or bad/very bad presented, respectively, 2.80 times and 10.16 times more prevalence of common mental disorders, in comparison to the segment of adult women who self-rated health as excellent.

In the hierarchical of multiple Poisson regression model, we found higher prevalence of CMD in women from 30 to 49 years, with up to 12 years of education level, housewives, separated/divorced/widowed, who did not consume fruits or vegetables daily, who slept six hours or less per night, which had one or more chronic disease, four or more reported health problems, and suffered some kind of physical or psychological violence in the previous year (Table 4).

Table 1. Prevalence (%) and prevalence ratios (PR) of common mental disorders (SRQ-20) according to socioeconomic and demographic characteristics among women 18 to 64 years of age. ISACamp 2008/2009, Campinas, São Paulo State, Brazil.

Variables	n*	Prevalence (%)	Adjusted PR ^a (95%CI)
Age bracket (years)		0.0055**	
18 to 29	234	11.8	1
30 to 49	257	20.0	1.69 (1.04-2.74)
50 to 64	357	25.4	2.15 (1.40-3.31)
Total	848	18.7	
Skin color/race		0.1444**	
White	617	17.0	1
Black	66	25.9	1.54 (1.01-2.34)
Brown	159	22.7	1.40 (0.89-2.21)
Religion		0.3936**	
Catholic	453	16.1	1
Protestant	278	21.5	1.40 (0.96-2.03)
Without religion	64	23.6	1.61 (0.84-3.08)
Others	50	18.1	1.17 (0.54-2.50)
Education level (years)		< 0.0001**	
13 or more	200	7.7	1
9 to 12	220	19.6	2.68 (1.70-4.23)
0 to 8	427	25.5	2.99 (1.77-5.04)
Occupation		0.0024**	
Paid workers	423	14.3	1
Unemployed	38	17.6	1.34 (0.55-3.26)
Retired	101	32.7	1.82 (0.96-3.44)
Housewives	245	27.2	1.79 (1.16-2.75)
Students	34	11.2	0.98 (0.37-2.61)
Per capita monthly family income (MW)		0.0178**	
≥ 2	259	13.0	1
< 2	589	21.4	1.68 (1.11-2.53)
Marital status		0.0067**	
Married	377	17.4	1
Living together/cohabitating	103	18.4	1.20 (0.74-1.94)
Separated/divorced/widowed	146	33.0	1.75 (1.12-2.74)
Single	222	13.8	0.96 (0.52-1.76)
Number of children		< 0.0001**	
None	224	10.2	1
1 to 2	366	18.2	1.68 (1.00-2.81)
3 or more	258	28.9	2.51 (1.38-4.56)
Number of household members (people)		0.7123**	
1 to 2	263	19.8	1.05 (0.68-1.64)
3 to 4	368	17.3	1
5 or more	217	20.2	1.22 (0.84-1.77)
Presence of housemaid		0.1040**	
Yes	80	10.9	1
No	768	19.5	1.93 (0.91-4.09)
Number of household assets		0.4345**	
11 or more	145	17.0	1
6 to 10	457	20.9	1.32 (0.84-2.06)
5 to 0	245	16.1	1.06 (0.58-1.94)

*Number of individuals in the unweighted sample; **Chi-squared test; value of p. ^aPoisson multiple regression model. Adjustment variable: age. Minimum wage in force: January-April/2008: BRL 415.00; May/2008 to April/2009: BRL 450.00.

Table 2. Prevalence (%) and prevalence ratios (PR) of common mental disorders (SRQ-20) according to health-related behavior among women 18 to 64 years of age. ISACamp 2008/2009, Campinas, São Paulo State, Brazil.

Variables	n*	Prevalence (%)	Adjusted PR ^a (95%CI)
Risk of alcohol consumption (AUDIT)		0.2503**	
No	822	18.3	1
Yes	24	30.5	1.79 (0.78-4.11)
Frequency of alcohol consumption		0.7064**	
Does not drink it	688	19.4	1
1 time/week or less	123	16.3	0.87 (0.54-1.42)
2 times/week or more	35	16.2	0.81 (0.34-1.93)
Smoking habit		0.0147**	
Never smoked	633	15.6	1
Smoker	129	27.9	1.70 (1.17-2.47)
Former smoker	85	25.0	1.51 (0.88-2.57)
Leisure-time physical activity (IPAQ)		0.0424**	
Active/Insufficiently active	244	12.1	1
Inactive	604	21.0	1.86 (1.08-3.21)
Consumption of fruit/vegetables		0.0262**	
Diary	226	11.3	1
Non-diary	622	21.1	2.18 (1.24-3.85)
Daily sleep duration (hours)		< 0.0001**	
≥ 7	678	14.7	1
≤ 6	165	34.2	2.20 (1.51-3.21)

*Number of individuals in the unweighted sample; **Chi-squared test: p-value. ^aPoisson multiple regression model. Adjustment variable: age.

Discussion

The prevalence of common mental disorders in adult women in the city of Campinas was within the range found by a systematic review on the prevalence of mental disorders in the female Brazilian population, which went from 19% to 34%¹², and very close to the value found by a meta-analysis, which evaluated people from 16 to 65 years around the world and found that 19.7% of women presented some common mental disorders in the past year³.

As the literature points out, there are many social factors involved in the mental health and well-being of women along their lives^{18,19}. However, this study concluded that, in all the social determinants of health, some have greater significance than others for women's mental health. Analyzing the socioeconomic and demographic indicators related to CMD, we observed that age, self-reported skin color/race, education level, occupation, *per capita* monthly family income, marital status, and number of children were statistically associated with these disorders. However, only education level and occupation remained significant when adjusting all variables. Women

with up to 8 years of study showed a prevalence of CMD 2.67 times higher than those with 13 years or more. But, what makes education stand out in the association with mental health in front of other socioeconomic indicators? According to studies, access to education generates cognitive skills, assertiveness, and capacity to make decisions, which contribute to independence, fertility control, feeding quality, and economic well-being, factors that affect physical and mental health^{20,21}. For some authors, the most plausible hypothesis is that individual financial resources provided by paid work are fundamental in the association between education and health²¹. Although the independent effect of each social determinant is controversial, this study found no association between CMD and income after the adjustment of socioeconomic and demographic variables. A justification for this result would be that the variable used was the *per capita* monthly family income, since a significant part of women has no income, for not working outside the home.

Congruent to the arguments presented is the fact that, along with education, occupation was another social determinant of great impor-

Table 3. Prevalence (%) and prevalence ratios (PR) of common mental disorders (SRQ-20) according to morbidities and health status among women 18 to 64 years of age. ISACamp 2008/2009, Campinas, São Paulo State, Brazil.

Variables	n*	Prevalence of CMD (%)	p**	Adjusted PR ^a (95%CI)
Arterial hypertension	213	30.7	0.0016	1.62 (1.07-2.47)
Diabetes	69	32.9	0.0090	1.48 (0.98-2.25)
Heart disease	52	38.4	0.0019	1.85 (1.20-2.86)
Rheumatism/arthritis/arthrititis	94	48.8	< 0.0001	2.48 (1.59-3.88)
Asthma/bronchitis/emphysema	37	41.6	0.0328	2.16 (1.05-4.41)
Tendonitis/RSI/WRMD	62	45.3	< 0.0001	2.52 (1.70-3.72)
Circulatory problem	138	43.1	< 0.0001	2.58 (1.76-3.78)
Number of chronic diseases			< 0.0001	
None	405	9.5		1
1	214	23.7		2.58 (1.66-3.99)
2	110	31.1		3.52 (1.90-6.49)
3	66	36.6		4.19 (2.56-6.88)
4 or more	53	65.5		7.69 (4.53-13.06)
Headache/migraine	279	29.4	< 0.0001	2.29 (1.77-2.97)
Back pain/back problem	308	27.2	< 0.0001	1.76 (1.29-2.41)
Allergy	259	23.0	0.0844	1.40 (0.98-2.00)
Dizziness/vertigo	126	43.7	< 0.0001	2.69 (1.74-4.16)
Insomnia	175	48.5	< 0.0001	4.07 (2.88-5.77)
Urinary problem	47	51.0	< 0.0001	2.79 (1.89-4.14)
Number of health problems			< 0.0001	
2 or less	294	11.7		1
3	268	13.1		1.08 (0.56-2.08)
4	170	27.2		2.22 (1.46-3.38)
5 or more	116	36.9		2.86 (1.63-5.01)
Accident (past year)	56	23.7	0.2902	1.25 (0.78-1.99)
Violence (past year)	41	47.2	0.0002	2.82 (1.87-4.26)
BMI			0.0165	
Eutrophic	403	15.0		1
Low weight	47	10.4		0.70 (0.28-1.78)
Overweight	245	21.1		1.29 (0.84-1.98)
Obesity	153	28.0		1.67 (1.02-2.70)
Self-rated health			< 0.0001	
Excellent	129	6.7		1
Very good	176	6.8		0.98 (0.35-2.72)
Good	476	19.7		2.80 (1.26-6.20)
Bad/Very bad	67	74.6		10.16 (4.43-23.28)

* Number of individuals in the unweighted sample; ** Chi-squared test: p-value. ^a Poisson multiple regression model. Adjustment variable: age. BMI: body mass index.

tance on women's mental health after the adjustments^{9,22,23}. Housewives showed 67% more CMD than paid workers. Together, the increase in female education and the participation of women in the labor market have caused women to be less financially dependent on their spouses. Beyond the financial aspect provided by paid work, occupations, such as schooling, can also enable to women greater autonomy and decision-making

power, which cooperates with self-esteem and confidence, and consequently improves the satisfaction with life²⁴. Occupation stands out in particular for providing a supportive social network in the work environment that facilitates self-control in situations of tension and stress²⁵. The results of this study show that housewives present more mental health harms than paid workers, which leads us to believe that some characteris-

Table 4. Hierarchical Poisson regression model among women 18 to 64 years of age. ISACamp 2008/2009, Campinas, São Paulo State, Brazil.

Variables	First Step		Second Step		Third Step	
	PR (95%CI)	p-Value	PR (95%CI)	p-Value	PR (95%CI)	p-Value
Age bracket (years)						
18 to 29	1		1		1	
30 to 49	1.76 (1.07-2.91)	0.028	1.62 (1.02-2.57)	0.042	1.40 (0.84-2.34)	0.194
50 to 64	1.66 (0.97-2.82)	0.061	1.45 (0.85-2.47)	0.169	1.05 (0.53-2.08)	0.884
Education level (years)						
13 or more	1		1		1	
9 to 12	2.55 (1.54-4.20)	< 0.001	2.72 (1.66-4.47)	< 0.001	2.50 (1.60-3.92)	< 0.001
0 to 8	2.67 (1.50-4.74)	0.001	2.95 (1.66-5.23)	< 0.001	2.15 (1.32-3.52)	0.003
Occupation						
Paid workers	1		1		1	
Unemployed	1.35 (0.60-3.02)	0.462	1.59 (0.72-3.48)	0.241	1.90 (0.84-4.31)	0.120
Retired	1.77 (0.95-3.28)	0.071	2.06 (1.01-4.20)	0.048	1.75 (0.83-3.68)	0.135
Housewives	1.67 (1.09-2.56)	0.018	1.61 (1.05-2.47)	0.029	1.83 (1.24-2.71)	0.003
Students	1.86 (0.56-6.22)	0.306	2.29 (0.76-6.85)	0.137	2.56 (0.87-7.53)	0.087
Marital status						
Married	1		1		1	
Living together/cohabitating	1.16 (0.72-1.88)	0.535	1.10 (0.70-1.73)	0.658	1.09 (0.70-1.71)	0.686
Separated/divorced/widowed	1.67 (1.07-2.60)	0.025	1.61 (1.05-2.48)	0.029	1.23 (0.84-1.84)	0.280
Single	1.29 (0.75-2.20)	0.349	1.11 (0.68-1.83)	0.658	1.11 (0.72-1.72)	0.615
Consumption of fruit/vegetables						
Diary			1		1	
Non-diary			1.95 (1.12-3.37)	0.019	1.81 (1.07-3.06)	0.028
Daily sleep duration (hours)						
≥7			1		1	
≤6			2.66 (1.87-3.78)	< 0.001	2.05 (1.51-2.80)	< 0.001
Number of chronic diseases						
None					1	
1					2.22 (1.47-3.35)	0.001
2					2.35 (1.36-4.07)	0.003
3					2.48 (1.61-3.84)	< 0.001
4 or more					3.86 (2.28-6.52)	< 0.001
Number of health problems						
2 or less					1	
3					0.90 (0.49-1.69)	0.760
4					1.59 (1.04-2.44)	0.032
5 or more					1.94 (1.21-3.12)	0.007
Violence (past year)						
No					1	
Yes					2.28 (1.52-3.43)	< 0.001

tics linked to domestic work, as well as stereotypes, can be harmful to mental and emotional aspects. Some authors consider that the routine, everyday monotony of a housewife, and devaluation of domestic work are singular and impactful factors in the harm for mental health²⁴⁻²⁷.

The association between marital status and mental health is widely researched^{28,29}. Separated, divorced, or widowed women showed a prevalence of mental disorders 67% higher than married women, a result supported by a longitudinal research conducted in Canada. According to that

study, both men and women who were separated or widowed presented significantly higher levels of stress than those who remained married within the period of two years³⁰. A meta-analysis with 126 articles published in the last 50 years stated that the quality of marital relationship is related to health indicators. The report of satisfaction with marriage was associated with better biological markers such as lower blood pressure, lower risk of cardiovascular disease and even of mortality among adults²⁸. For the authors, satisfaction with marriage is a consequence of social support. Social support can mitigate the stressful effects of everyday life. In marriage, individuals share a wide variety of activities, including meals, house-keeping activities, taking care of their children, leisure, rest, and financial resources, often to a greater degree than those who live together but are not married. The absence of support from the spouse may be cause for conflict, dissatisfaction with the marriage, psychological distress, and physical health impairment.

Concerning health-related behaviors, nutrition's role in mental disorders has been increasingly recognized in the scientific literature^{31,32}. This study found prevalence 95% higher of CMD in women who did not consume fruits or vegetables daily than in women who daily consumed these foods. This result is backed up by other international cross-sectional studies, which verified association between low intake or deficiency of zinc, magnesium, and folic acid (found in high levels in fruits and vegetables) and depression and dysthymia in women, after adjustment for socioeconomic and behavior variables^{33,34}. However, we have to argue that an unbalanced diet can also reflect the impairment of self-care, which is an attitude more prevalent in women with mental disorders. But, according to a systematic review on iron and zinc supplementation and depressive symptoms in premenopausal women from ten randomized clinical trials, seven studies have shown improvements in mood, memory, and cognition of women after the supplementation of iron and zinc³⁵, revealing that the absence of these minerals can impair mental health.

Other behavior associated with CMD among women was sleep duration. It is known that sleep-related problems are among the signs that can characterize some mental disorder a priori³⁶. As expected, women who reported sleeping six or fewer hours per day showed a prevalence of CMD 2.66 times higher than those who reported sleeping seven or more hours. A study conducted with older people, also with data from ISACamp

2008/2009, pointed out a similar result. Lima et al.³⁷ found that women who slept five hours or less per day presented worse mental health, with emotional aspects and vitality harmed in relation to women who slept from seven to eight hours. There are several reports in the literature that the pattern of short sleep is associated with harms to mental health, such as depression, anxiety, mood change, tension, and fatigue^{38,39}. According to Faubel et al.⁴⁰, women who had a short sleep pattern presented worse health-related quality of life, especially about emotional aspects, showing the association between health status, functionality of the body, physical and mental well-being, and performance of social activities.

It is common for mental disorders to be accompanied by somatic diseases^{11,19,31}, and the severity of mental disorders may be related with the associated comorbidities. Women who reported four or more chronic diseases presented 3.86 times more CMD prevalence than those who reported not having diseases. With exception to diabetes and allergies, this study identified association between CMD and all morbidities and health problems surveyed. Results of the World Mental Health, a global research with adults from seventeen countries, carried out by the WHO, reveal association between mental disorders and diabetes, asthma, arterial hypertension, arthritis, ulcers, heart disease, back problems, migraine, obesity, and multiple aches⁴¹. Among the researched chronic diseases, circulatory problems were those that presented more relevance in the prevalence of CMD, and the affected women had 2.58 times more mental disorders. In a study with women, without prior cardiovascular diseases, depressive symptoms significantly increased the risk of developing some cardiovascular disease and of mortality⁴². By analyzing data from studies presented in a multidisciplinary conference on the subject, researchers showed that chronic stress, depression, and anxiety can increase rates, complications, and mortality by cardiovascular disease as they may negatively affect self-care and cause persistent changes in hormonal activity and deregulation of the hypothalamic-pituitary-adrenal axis⁴³. However, despite the evidence of the causality between mental disorders and morbidities, as has been pointed out by some studies, there is a need for further investigations. One study shows that chronic diseases can cause increase in mental disorders as they affect quality of life, because they interfere in social relations, habits, and routines⁴⁴.

Finally, another factor associated with CMD was violence against women, which stood out for

being one of the factors with greater impact^{10,45}. Women who have suffered some type of violence in the year preceding the interview presented 2.28 more common mental disorders compared to those who did not report having suffered it. According to the World Health Organization, violence is the main cause associated with depression in women⁴⁶. A study conducted with 468 women victims of sexual violence in the metropolitan region of Campinas pointed depressive and anxious symptoms and sleep changes in more than half of the women evaluated⁴⁷. In a multicentric research in 10 countries, including Brazil, the authors have verified positive association between violence and CMD, evaluated by SRQ-20, in addition to the association between violence and suicidal thoughts and attempts⁴⁸. According to Kumar *et al.*¹⁰, violence against women is an extremely complex phenomenon, which represents a serious threat to women's mental health, and is deeply rooted in gender relations based on power, involving issues of sexuality, self-identity, and also social institutions.

Some of the limitations of this study result from the cross-section design, which does not allow causal inferences, and also from the total number of interviewees that, although appropriate to estimate most prevalence, is insufficient for some less frequent categories of some variables. Regarding the instrument used, SRQ-20 underwent validation study in the Brazilian urban population⁴⁹ and is notable for being widely used in population-based surveys due to its simple appli-

cation, which can be by autofill or interview conducted by lay and trained interviewers, as was the case of this research. However, we highlight that SRQ-20 does not establish diagnostic categories as in the International Classification of Diseases – 10 (ICD-10) and Diagnostic and Statistical Manual – V (DSM-V), being, therefore, a means of tracking suspected cases of common mental disorders.

This study highlights that older women with low education level, housewives, separated or widowed, with inadequate food diet, which sleep little, are sick, and suffer violence are part of the more vulnerable segments to common mental disorders and, thus, should be treated with priority by health services. Is needed in the evaluation conducted by the health care professional attention to the socioeconomic conditions of women, and an understanding of the risk factors specific to mental problems in the history of the life of each woman (such as the lifestyle, the prior presence of morbidities, and the history of violence). Given the association between CMD and chronic diseases, health problems, and violence, and the clinical consequences of comorbidities, worsening even more mental disorders, these risk factors must be objects of research and worked in the prevention of CMD and in its diagnosis in clinics and hospitals. Early diagnosing women with CMD, as well as accompanying and treating them, can reduce the impacts of mental disorders on quality of life, minimizing suffering and adverse outcomes in the health of women and their families, and the costs to health services.

Collaborations

C Senicato prepared the proposal for the article, conducted the literature search, performed the statistical analyses and writing of the article. RCS Azevedo participated in the review of the article. MBA Barros supervised in the design and conception of the research and guided the design, statistical analyses, and writing of the article.

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