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Severity indicators of maternal depression: impact on behavioral problems of schoolchildren*

Indicadores de gravidade da depressão materna: impacto para problemas comportamentais de escolares

Indicadores de gravedad de la depresión materna: impacto en los problemas de conducta de los escolares

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This is a cross-sectional study conducted in the city of Ribeirão Preto aims to systematize clinical indicators associated with the severity of recurrent depression in mothers of school-aged children and assess the impact of these indicators on their children's behavior, as well as to identify whether there is interference of social determinants associated with the sociodemographic conditions of families. Data collection considered the period from 2007 to 2013, 100 mothers with school-age children were evaluated and divided into Depression Group and Comparison Group with 50 dyads each. Sociodemographic questionnaire, Questionnaire on Patient Health-9, Structured Clinical Interview and Capacity and Difficulties Questionnaire were used. It was found that, regardless of social vulnerabilities, the severity of depression was configured as a risk factor for more behavioral problems in children in general ($p<0.001$; $R^2a=0.138$), internalizing (emotional symptoms - $p<0.001$; $R^2a=0.186$ - and relationship problems - $p<0.001$; $R^2a=0.141$) and externalizing (conduct problems - $p = 0.044$; $R^2a=0.031$). The evaluation of specific clinical indicators of depression can be used as a complement in the systematic screening of depression at different levels of health care, expanding the quality of evaluations and the care for maternal and child mental health.
Descriptors: Depression; Child; Behavior; Mental health; Severity of ilness index.

Este é um estudo transversal realizado na cidade de Ribeirão Preto que tem como objetivo sistematizar indicadores clínicos associados à gravidade da depressão recorrente em mães de crianças em idade escolar e avaliar o impacto desses indicadores para o comportamento dos filhos, bem como, identificar se há interferência de determinantes sociais associados às condições sociodemográficas das famílias. A coleta de dados considerou o período de 2007 a 2013, avaliando-se 100 mães com filhos em idade escolar, divididos em Grupo Depressão e Grupo Comparação com 50 díades cada. Utilizou-se Questionário sociodemográfico, Questionário sobre a Saúde do Paciente-9, Entrevista Clínica Estruturada e, Questionário de Capacidades e Dificuldades. Verificou-se que, independente de vulnerabilidades sociais, a gravidade da depressão se configurou como fator de risco para mais problemas de comportamento das crianças no geral ($p<0,001$; $R^2a=0,138$), internalizantes (sintomas emocionais - $p<0,001$; $R^2a=0,186$ - e problemas de relacionamento - $p<0,001$; $R^2a=0,141$) e externalizantes (problemas de conduta - $p=0,044$; $R^2a=0,031$). A avaliação de indicadores clínicos específicos da depressão pode ser utilizada como complemento no rastreamento sistemático da depressão em diferentes níveis de atenção em saúde, ampliando a qualidade das avaliações e os cuidados à saúde mental materna-infantil.
Descritores: Depressão; Criança; Comportamento; Saúde mental; Índice de gravidade de doença.

Este es un estudio transversal realizado en la ciudad de Ribeirão Preto que tiene como objetivo sistematizar los indicadores clínicos asociados a la gravedad de la depresión recurrente en madres de niños en edad escolar y evaluar el impacto de estos indicadores en el comportamiento de sus hijos, así como identificar la interferencia de determinantes sociales asociados a las condiciones sociodemográficas de las familias. La recopilación de datos consideró el período de 2007 a 2013, evaluando a 100 madres con hijos en edad escolar, divididos en Grupo Depresión y Grupo Comparación con 50 díadas cada una. Se utilizaron Cuestionario sociodemográfico, Cuestionario sobre la salud del Paciente-9, Entrevista Clínica Estructurada y Cuestionario de Capacidad y Dificultades. Se verificó que, independientemente de las vulnerabilidades sociales, la gravedad de la depresión se configuró como un factor de riesgo para más problemas de comportamiento de los niños en general ($p <0.001$; $R^2a = 0.138$), internalizantes (síntomas emocionales - $p <0.001$; $R^2a = 0.186$ - y problemas de relación - $p <0.001$; $R^2a = 0.141$) y externalizantes (problemas de conducta - $p = 0.044$; $R^2a = 0.031$). La evaluación de indicadores clínicos específicos de la depresión se puede utilizar como un complemento en la detección sistemática de la depresión en diferentes niveles de atención médica, ampliando la calidad de las evaluaciones y la atención de la salud mental materna e infantil.
Descriptores: Depresión; Niño; Conducta; Salud mental; Índice de severidad de la enfermedad.

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INTRODUCTION

The depressive disorder stands out among mental disorders due to its incidence and recurrence, configuring an experience of clinically significant suffering or impairment with an impact of functioning in different areas of the individual's life, with high mortality associated especially with suicide[1].

Data from the World Health Organization (WHO) highlight that depression is the disorder that, alone, contributes to the most dysfunctional outcomes, with an estimated prevalence of 4.4% of the world population[2] and a resulting number of suicide deaths in about 800 thousand people a year worldwide[3]. The incidence of depression is higher in women (5.1%) compared to men (3.6%)[2]. This psychopathology is up to three times more frequent in women, especially in those aged between 18 and 29 years of age[1], that is, of childbearing age.

The relevance of the study of depression in women who are mothers is related to the prevalence of the disorder specifically in relation to this condition, which demands attention in mental health, including basic health units (BHU). Depression cases are not being treated only in secondary mental health devices, but also in primary care, with a quarter of the demand related to this disorder being monitored in BHU in Brazil[4], which shows the relevance of mental health actions in various services.

Considering the recurrent characteristic of depressive disorder, the greater vulnerability of women, especially at childbearing age, it is considered that the dysfunctional affective functioning associated with the disorder has an impact not only for the person affected, but also for people living with she. In the case of women / mothers, it is relevant to consider the possible influences of maternal depression on the development of their children.

Living with maternal depression can cause socio-emotional damage [5] for the school-age child. Studies show a predominance of more symptoms related to internalizing behaviors [6,7], as well as internalizing and externalizing symptoms[8,9], in addition to damage to cognitive ability[9] and social skills[10].

The impact of depression is broadened, in general, in view of its association with other conditions of vulnerability, which show a family and social scenario that is also dysfunctional. Thus, it is relevant that this psychopathology is studied in association with social determinants that contribute to this disorder.

According to WHO[11], the losses experienced by the woman/mother, her children and her family tend to be related to the mothers' low educational level, lower income, worse material and economic conditions of the family, in addition to less social support. Empirical and literature review studies[12-14] assessing the impact of maternal depression and cumulative risk conditions for child development support WHO's understanding and expand the development scenario to include factors internal to the family, related to the quality of interactions and the bonds established between parents and children[12] and in conjugality, such as single parenting[13] and marital conflicts[14].

The recognition of the impact of depression on the family and children's development context signals the need to broaden the understanding of the clinical and evolutionary manifestations of this disorder. The importance of examining the severity of symptoms in the face of the condition of recurrence and its impact on the children's developmental outcomes is highlighted.

Depressive episodes are characterized by a set of persistent symptoms, associated with sad or irritable mood, apathy and loss of interest/pleasure, as well as other cognitive impairments and somatic changes, which tend to be repeated in most cases[1]. The course of this disorder can be variable, with periods of remission of symptoms occurring between depressive episodes or an increase in the severity of symptoms depending on the number of occurrences of the episodes. The low recovery rates of an episode, a condition that would favor a significant decrease in symptoms and dysfunctionality, are associated with the number of previous episodes, psychotic experiences and other indicators of severity[1].

It is noteworthy that the greater the severity of the disorder, the greater the functional impairment and the resulting psychological distress, these being the indicators that guide the treatment to be offered to the person affected by the disorder. Each depressive episode can be assessed according to its severity, ranging from mild, moderate and severe, according to the number of symptoms diagnosed and the level of functional impairment triggered. The greater severity of depressive episodes is associated with the greater number of symptoms, the intensity of these symptoms and the triggered suffering, which tends not to be manageable by the person himself, and the marked interference of these symptoms in the person's social and professional functioning[1].

The present study aims to systematize clinical indicators associated with the severity of recurrent depression in mothers of school-aged children and to assess the impact of these indicators on their children's behavior, as well as to identify whether there is interference from social determinants associated with the sociodemographic conditions of families.

METHOD

This is a study with a cross-sectional, predictive correlational design, developed in the city of Ribeirão Preto, appreciated and approved according to the CEP-HCFMRP Process No. 6395/2011. The ethical precautions recommended by the Declaration of Helsinki and Brazilian regulations regarding research with human beings were adopted, guaranteeing the voluntariness of the participants and signing the Free and Informed Consent Term (ICF) to start the data collection.

Mother-child dyads from a medium-sized city in the interior of the state of São Paulo participated in this study. They were divided into two groups:

Depression Group: mother-child dyads, in which mothers had a history of recurrent depression, with at least one moderate or severe episode in the previous two years and without symptoms in the previous six months, attended at public outpatient mental health services, where Classification International Diseases and Health-Related Problems - CID-1015 was adopted; Comparison Group: mother-child dyads, whose mothers did not have a history of depression or any psychiatric disorder, which were identified at a Family Health Unit of the City Health Department.

Cases of the Depression Group were excluded in which the woman had diagnoses of major depression with a single episode and exclusively with mild episodes in the last two years; mothers who had moderate or severe episodes in the last six months and who had comorbidities with other psychiatric disorders.

In addition, mothers and children with apparent disabilities and/or current symptoms or history of other serious chronic diseases were excluded, such as: cancer, HIV / AIDS, heart disease, nephropathy, hepatopathy, leprosy, multiple sclerosis, Parkinson's, active tuberculosis and irreversible and disabling paralysis. These diseases were listed based on article 151 of Law 8,213 / 91 (Social Security Benefit Plans), which has a list of diseases considered serious and disabling and chronic non-communicable diseases in Brazil[16].

The identification of women occurred through the records of mental health services for the Depression Group and, in the Comparison Group, a list of cases was captured by the health service.

As for the instruments used, indicators related to the mothers' mental health, sociodemographic conditions of the families and behavioral problems of the children were included, by applying the following instruments to women:

General questionnaire: designed for the study, allowing the survey of sociodemographic characteristics of the participants and their families, namely: ages of mother and child; mother's marital status; schooling of mother, father and child; maternal and paternal profession/occupation; family composition; housing conditions; family income; and socioeconomic level. This Questionnaire also evaluated conditions of pregnancy, history of

family depression, domestic violence, presence of chronic diseases and disabilities on the part of mothers and children.

Patient Health Questionnaire-9 (PHQ-9): instrument for tracking current depressive symptoms, validated by Spitzer, Kroenke and Williams[17] and Kroenke, Spitzer and Williams[18], with good psychometric indicators in the Brazilian reality[19]. This questionnaire consists of nine items answered in view of the presence and frequency of signs and symptoms of depression in the last two weeks, with the total score ranging from zero to [27]. It was considered as a positive indicator of signs and symptoms of Major Depression greater than or equal to 1017[18], being answered by the mothers of the Comparison Group in order to exclude women with a positive indicator.

Structured Clinical Interview for DSM-IV (SCID): semi-structured interview for diagnostic evaluation, translated and adapted for the Brazilian population by Del-Ben[20] and Del-Ben et al[21]. For the Depression Group, the General Review, SCID I (modules A, B, C, D, E and F) and SCID II were used, aiming at the application of the inclusion criteria of mothers, that is, the diagnostic confirmation of the disorder recurrent depressive disorder and the exclusion of comorbidities. In addition to the diagnostic information, SCID made it possible to collect information about the clinical profile of this group, namely: severity of depressive episodes, number of recurrences of such episodes, number of hospitalizations, presence of psychotic symptoms, suicidal ideation, suicide attempt, current use of antidepressants and periods of occurrence of depressive episodes, with a special focus on the child's exposure to maternal depression. The mothers of the Comparison Group responded to the SCID-NP version (non-patient edition) in order to identify those with past or current psychiatric disorders, who were excluded from the study.

Skills and Difficulties Questionnaire (SDQ): a free-use instrument (website: www.sdqinfo.com), developed by Goodman[22] for tracking behavioral problems in children and adolescents (aged four to 16) in the six previous months. This Questionnaire was translated and adapted to the Brazilian reality by Fleitlich, Cortázar and Goodman[23] and presents three versions of application (parents, teachers and young people from 11 years old), and in this study the version for parents was used. The aforementioned Questionnaire consists of 25 items, which are divided into four difficulty scales (emotional symptoms, conduct problems, hyperactivity and relationship problems with colleagues) and a capacity scale (prosocial behavior) with five items each. Each item has three answer alternatives, namely: true, more or less true and false, whose score varies between zero, one and two. The maximum score on each scale is 10 points. The total score of difficulties is obtained by the sum of the scores on the four scales of difficulties, ranging from zero to 40. The higher the score on the scales of difficulties or the total score, the more behavioral problems in the specific or in general evaluated areas appear, respectively. For the Skills scale, the higher the score obtained, the more prosocial resources the child has. The score on each scale and on the total difficulty score also makes it possible to be classified into three categories: normal, borderline and abnormal. It presents good psychometric indicators[24].

The collection with the dyads of both groups (Depression and Comparison) was carried out, in a single moment, between the years 2007 and 2013, in the health services where the mothers were seen or in their homes, according to their preference. We sought to guarantee privacy and secrecy in all the places mentioned. All mothers who met the selection criteria and agreed to participate in the study were contacted personally, at a previously scheduled time, with emphasis on the voluntary nature of participation and the possibility of giving up at any time, with no harm whatsoever to themselves or their children.

The evaluations started only after the mothers had read and signed the informed consent form. The evaluations were carried out in individual sessions, face to face, by previously trained researchers, aiming to make data collection homogeneous. The mothers answered the general questionnaire, the semi-structured interview, the PHQ-9 in the case of mothers in the Comparison Group, and the SDQ.

The data related to sociodemographic characteristics were analyzed descriptively, comparing the Depression Group and the Comparison Group using the Chi-Square Test or Fisher's Exact Test (categorical variables) and Student's t Test (continuous variables). For decision making regarding the adopted tests, the Komolgorov-Smirnov normality test was performed. Statistical analyzes were performed using the IBM SPSS Statistic software, version 24 for Windows.

The severity of maternal depression was based on data from SCID when diagnosing depression, which is characterized by the criteria established by the DSM. Thus, seven indicators that are theoretically and clinically associated with the severity of Recurrent Depressive Disorder were listed and weight to each of them was attibuted. A brief scale of items ranging from zero to two points was elaborated and the sum of the scores on the seven items allowed the identification of a total score.

In view of the possibility of cumulative items, higher scores indicate the presence of greater severity of the disorder in question, thus considering depression as a scalar variable. Chart 1 presents the list of variables, the criteria used and the score attributed to each criterion, composing a scale in which cumulative severity indicators were considered.

Chart 1. Criteria used for coding and score of each variable included, relative to the clinical profile of mothers with recurrent depression.

Variables	Used Criteria	Score
Gravity of the Last Episode	Moderate	1
	Severe	2
Psychotic Symptoms *	Absent	0
	Present	1
Psychiatric Hospitalizations *	Absent	0
	Present	1
Suicidal ideation	Absent	0
	Present	1
Suicide attempt *	Absent	0
	Present	1
Number of recurrences *	Two crises	0
	Three or more crises	1
Maternal perception of the current situation	Positive and Positive with regression	0
	Positive or Negativrewith damages	1
	Total (Maximum Score = 8)	

Note: * Refers to the indicator evaluated throughout the history of Recurrent Depressive Disorder

Such items supported the assessment of the severity of maternal depression, based on the severity of the last depressive episode (moderate or severe), presence of psychotic symptoms, psychiatric hospitalizations, ideation and attempted suicide, number of recurrences of these episodes (two, three or more than three well-defined episodes), and maternal perception regarding their current mental health condition (positive, with relapses, negative and with losses).

From the scores associated with the severity of depression, prediction analyzes were performed. Univariate linear regression analysis[25] was performed to verify the effect of maternal depression on the behavior problems of schoolchildren, assessed by the total score of difficulties and scores on the four subscales of problems of the SDQ. In such analyzes, the score for the sum of the indicators of severity of depression was considered. In order to resolve possible weights of sociodemographic variables, bivariate logistic regression analysis[25] was carried out for information regarding the predictive effect of such isolated variables for children's behavior problems. The significance level was set at 5% ($p \geq 0.05$).

RESULTS

One hundred dyads of mothers with their children participated, 50 in the Depression Group and 50 in the Comparison Group. The mothers were between 25 and 45 years old. Children of both sexes were aged between seven and 12 years old (school age) and lived with their biological mother.

The children had a mean age of 9.9 years (range: seven years and three months to 12 years and nine months; SD = 1.68), which were homogeneously distributed between age groups and gender for both groups. As for education, all children were attendeding elementary school, with the majority (61%) in the early years (1st to 5th year), with a similar distribution for both groups. No statistically significant differences were identified for the children's socio-demographic variables, which showed a balanced distribution between the groups, according to the inclusion criteria of the study (Table 1).

The mothers had a mean age of 36.3 years (range between 25 and 45 years, SD = 5.04). There was a homogeneous distribution, with the average age of mothers in the Depression Group being 36.6 years (SD = 5.16) and that of the Comparison Group of 35.9 years (SD = 4.94). Regarding occupation, there was a predominance of mothers who reported being performing some paid professional activity in both groups (Depression - 54% and Comparison - 72%). The majority (87%) of mothers had one to three children, ranging from one to five children, although 20% of mothers in the Depression Group and 6% in the Comparison Group had four to five children. For these variables, there was no statistically significant difference between the groups (Table 1)

For the other maternal sociodemographic variables, statistically significant differences were identified between the Depression and Comparison groups. Most mothers (56%) reported having more than eight years of study, with 62% of mothers in the Depression Group having up to eight years of study and 74% of mothers in the Comparison Group more than eight years. Regarding marital status, 66% of the mothers in the Depression Group said they were without a partner (single, separated, separated or widowed), being exclusive caregivers of their families and 94% of the mothers in the Comparison Group reported having a partner (married or in union) consensual), living in two-parent families (Table 1).

As for the sociodemographic characteristics of the families, statistically significant differences were identified in the comparison between the groups. With regard to socioeconomic classification, it was found that most families (58%) were classified as belonging to classes A and B (Depression Group - 38% and Comparison Group - 78%). The predominance of families (59%) with monthly income greater than or equal to three minimum wages was identified, corresponding to 46% of the families in the Depression Group and 72% of those in the Comparison Group (Table 1).

The significant differences were identified when comparing the groups regarding sociodemographic conditions. The Depression Group was characterized as having: less maternal education, predominance of single-parent family constitution and families with less favored socioeconomic classification. These conditions were considered as possible social determinants in the data analysis, since the collection did not guarantee the homogeneity of the groups regarding these characteristics (Table 1).

Table 1. Sociodemographic profile and comparisons between variables referring to the characteristics of children, mothers and families for the groups Depression (n=50) and Comparison (n=50). Ribeirão Preto, 2007 to 2013.

	Grups		Total (n = 100)			
	Depression (n = 50)	Comparison (n = 50)				
	f (%)	f (%)	f (%)	OR	IC (95%)	p-valor*
Children						
Age						
7 to 9	24 (48,00)	26 (52,00)	50 (50,00)	1,000	Reference	0,841
10 to 12	26 (52,00)	24 (48,00)	50 (50,00)	1,174	(0,535 ; 2,572)	
Sex						
Masculine	24 (48,00)	26 (52,00)	50 (50,00)	1,000	Reference	0,841
Feminine	26 (52,00)	24 (48,00)	50 (50,00)	1,174	(0,535 ; 2,572)	
Schooling						
1º to 5º grades	29 (58,00)	32 (64,00)	61 (61,00)	1,000	Reference	0,682
6º to 8º grades	21 (42,00)	18 (36,00)	39 (39,00)	1,287	(0,575 ; 2,881)	
Mothers						
Age						
25 to 35	23 (46,00)	26 (52,00)	49 (49,00)	1,000	Reference	0,689
36 to 45	27 (54,00)	24 (48,00)	51 (51,00)	1,271	(0,580 ; 2,789)	
Schooling						
≤ 8 years old	31 (62,00)	13 (26,00)	44 (44,00)	4,644	(1,981 ; 10,883)	**0,001**
>8 years old	19 (38,00)	37 (74,00)	56 (56,00)	1,000	Reference	
Marital Status						
Without a partner	33 (66,00)	3 (6,00)	36 (36,00)	30,410	(8,242 ; 112,209)	**< 0,001**
With a partner	17 (34,00)	47 (94,00)	64 (64,00)	1,000	Reference	
Occupation						
Wage earner	27 (54,00)	36 (72,00)	63 (63,00)	1,000	Reference	0,098
Benefit + no job	23 (46,00)	14 (28,00)	37 (37,00)	2,190	(0,954 ; 5,028)	
Number of children						
1 to 3	40 (80,0)	47 (94,0)	87 (87,00)	1,000	Reference	0,074
4 to 5	10 (20,0)	3 (6,0)	13 (13,00)	3,917	(1,008 ; 15,220)	
Families						
Socioeconomic Class						
A e B	19 (38,00)	39 (78,00)	58 (58,00)	1,000	Reference	**< 0,001**
C e D	31 (62,00)	11 (22,00)	42 (42,00)	5,785	(2,400 ; 13,942)	
Monthly income***						
<3 minimum wage	26 (52,00)	14 (28,00)	40 (40,00)	3,156	(1,369 ; 7,276)	**0,019**
≥ 3 minimum wage	23 (46,00)	36 (72,00)	59 (59,00)	1,000	Reference	

Note: f = frequency; % = Percentage; * p-value referring to the Chi-Square test / p ≤ 0.05; OR = Odds Ratio; CI (95%) = 95% confidence interval; ** Obtained according to the Brazil Economic Classification Criterion developed by the Brazilian Association of Research Companies - ABEP; *** Calculated in minimum wage, in force at the time of the interview.

It was found that all mothers in the Depression Group were diagnosed with Recurrent Depressive Disorder, and for the majority (76%) the most severe depressive episode was classified as moderate and 24% had a severe episode (7% with psychotic symptoms and 5 % without psychotic symptoms). Seven mothers (14%) had at least one psychiatric hospitalization due to depressive symptoms and nine mothers (18%) reported at least one suicide attempt in the years prior to data collection (Table 2).

As for the recurrence of depressive episodes, it was observed that 54% of the mothers had more than three episodes and that the other mothers had two (32%) or three (14%) episodes after the birth of the evaluated child. Most mothers in the Depression Group (78%) said they were using antidepressants at the time of collection, associated or not with the use of other psychiatric medications. Furthermore, in relation to self-perception of their current

condition, 68% of mothers in this group reported losses or relapses and 32% rated it as positive (Table 2).

Table 2. Clinical profile of mothers in the Depression Group in relation to severity, recurrence, treatment of depression and maternal perception of the current condition. Ribeirão Preto, 2007 to 2013.

Variables		f (%)
Diagnosis*		
	Moderate Episode	38 (76,00)
	Severe Episode without Psychotic Symptoms	05 (10,00)
	Severe Episode with Psychotic Symptoms	07 (14,00)
Hospitalizations		
	Absent	43 (86,00)
	Present	07 (14,00)
Suicide attemps		
	Absent	41 (82,00)
	Present	09 (18,00)
Recurrences		
	2 episodes	16 (32,00)
	3 episodes	07 (14,00)
	More than 3 episodes	27 (54,00)
Antidepressants - current use		
	Present	39 (78,00)
	Absent	11 (23,00)
Perception about the current condition		
	Positive	16 (32,00)
	Damage or regression	34 (68,00)

Note: f = frequency; % = Percentage; * Diagnostic classification of depression, according to CID-10.

Among mothers diagnosed with recurrent depression (Depression Group), the average score for the severity of the disorder was 3.00 (SD = 1.53), varying between scores equal to 1 (minimum) and 7 (maximum). It was found that only the predictive model for hyperactivity was not significant, and the severity of maternal depression proved to be a predictor of other behavioral problems assessed by the total SDQ and for specific scales, emotional symptoms, conduct and relationship problems with colleagues (Table 3).

Simple linear regression analyzes indicated that the severity of maternal depression had greater predictive power for emotional symptoms (F = 23.586; p <0.001), relationship problems with colleagues (F = 17.250; p <0.001) and the total of difficulties (F = 16.853; p <0.001), explaining 13% to 18% of the variance of the scores on these two scales and of the total score (Table 3).

It is noteworthy that, in view of the differences related to the sociodemographic characteristics of the sample between the groups, a logistic regression analysis was also carried out to assess the weight of these variables with significant differences for the behavior problems of the total sample of children (Table 3)

Table 3. Simple linear regression analyzes considering the severity of maternal depression as the predictor variable for the outcomes of SDQ behavioral problems (n = 100). Ribeirão Preto, 2007 to 2013.

	Predictor Variable – Maternal Depression Severity					
Variables outcome	B	β	T	p-valor*	IC (95%)	Ajusted R^2
Total Dificulties	1,531	0,383	4,105	**< 0,001**	0,791 – 2,271	0,138
Emotional symptoms	0,649	0,440	4,857	**< 0,001**	0,384 – 0,914	0,186
Conduct problems	0,230	0,202	2,040	**0,044**	0,006 – 0,454	0,031
Hiperactivity	0,271	0,154	1,545	0,126	-0,077 – 0,620	0,014
Peer relationship	0,382	0,387	4,153	**< 0,001**	0,199 – 0,565	0,141

Note: * p-value = p ≤ 0.05; CI (95%) = 95% confidence interval.

Table 4 shows the indicators for regression analysis. In the analyzes, it was identified that none of the sociodemographic variables, considered as possible social determinants, were predictors of more behavior problems. This data highlights the significant role of maternal depression, assessed from cumulative severity indicators, for children's behavioral outcomes.

Table 4. Bivariate logistic regression analysis, with maternal schooling and marital status, socioeconomic class and family monthly income as independent variables, and the behavioral ratings of children in Without Difficulty or With Difficulty in the SDQ as a dependent variable. - Total Difficulty Score (Depression Group). Ribeirão Preto, 2007 to 2013.

	SDQ Total Dificulties			
	f (%)	**Gross OR**	**IC (95%)**	**p-valor***
Mother Schooling				
≤ 8	31 (62,00)	2,031	(0,614 ; 6,721)	0,376
> 8	19 (38,00)	1,000	Reference	
Marital Status				
Single-parenthood	33 (66,00)	1,368	(0,420 ; 4,455)	0,763
Biparenthood	17 (34,00)	1,000	Reference	
Family Socioeconomic class				
A e B	19 (38,00)	1,000	Reference	0,376
C e D	31 (62,00)	2,031	(0,614 ; 6,721)	
Monthly income				
< 3 minimum wage	27 (55,10)	2,307	(0,714 ; 7,453)	0,246
≥ 3 minimum wage	22 (44,90)	1,000	Reference	

Note: * p-value for Fisher's exact test / p ≤ 0.05; OR = Odds Ratio; CI (95%) = 95% confidence interval; Diff. = Difficulty.

DISCUSSION

Data related to sociodemographic variables showed that children living with maternal depression also experience conditions of vulnerability related to this disorder. In the research, the lowest maternal education, single parenting and less socioeconomic resources stand out, factors that are social determinants which could compose a family scenario of vulnerability for the students in question, as suggested by the WHO[11].

Empirical and review studies have highlighted these social determinants presented by WHO and associated them with maternal depression, making up family scenarios of multiple stressors[13,14,26,27]. The presence of multiple stressors constitutes a consolidated explanatory model[28], which justified the inclusion of such variables in the understanding of the weight of the severity of maternal depression for schoolchildren, in order to identify variables of social vulnerability, relevant competitors for families.

In turn, in this study, these sociodemographic variables were not shown to be competing risks for maternal depression, in the sense of predictively impacting negative child developmental outcomes, which reiterates the role of vulnerability of these conditions and not of risk, with an increased likelihood of outcomes negative for the children living in these families. Thus, it is evidenced an explanatory model that identifies that, in the presence of significant sociodemographic differences as conditions of social vulnerability, the severity of maternal depression is configured as the only predictive condition for outcomes of behavioral problems at school age, as highlighted in different empirical studies for different developmental outcomes in schoolchildren living with maternal depression[5-9].

In addition to the presence of the variable itself, the severity of recurrent maternal depression is emphasized as a risk variable that increases the likelihood of schoolchildren, who live with this disorder, having behavioral problems. Thus, severity indicators are relevant clinical characteristics and, cumulatively, predictors of these problems, which can be used at different levels of health care, in view of the confirmation of depressive episodes, including basic health units[4].

In addition to the widespread recognition of the impact of recurrent maternal depression on negative and dysfunctional outcomes for children[13], the severity of this clinical disorder was also an indicator, given that it was found that the greater the number of severity items present, the more behavioral problems were identified in children.

The children's difficulties were verified for the total of problems, but also for emotional symptoms[5] and relationship problems, showing the impact for internalizing[6,7] and externalizing symptoms such as those related to conduct problems[8,9]. It is considered that the identification of behavioral problems of children occurred in the present study with mothers who assume the role of primary caregivers for children in most cultures.

The inclusion of mothers without depressive symptoms, in the six months prior to data collection, was an important methodological care, in order to favor data less biased by the mothers' depressive condition. The presence of depressive symptoms is associated with negative assessments of the children's behavior[29].

The association between the severity of depression and greater functional impairment and psychological distress for the affected person expands, from the present study, also to the prediction of more behavior problems in schoolchildren, in view of the greater probability of recurrence of depressive episodes and the low recovery rates associated with severity indicators[1]. Thus, it is also implied that the condition related to the negative impact for children can remain throughout the children's developmental trajectory, including living with maternal disorder in other periods of the life cycle.

The severity of recurrent maternal depression could be identified from the Structured Clinical Interview for DSM-IV[20,21], a gold standard instrument for diagnostic confirmation. Thus, it was possible to access different indicators related to severity, not available in other assessment instruments, such as self-report and tracking.

The access to different severity indicators and the construction of a coding and score of these indicators allowed the construction of a severity score with cumulative items that expand the way of qualitatively considering the depression variable as a predictor of problems for the children.

The use of diagnostic instruments, in general, demands more time compared to the screening instruments. In this sense, the use of a systematic assessment screening tool using a set of clinical severity indicators can favor a faster and more accurate characterization. It is clear, therefore, that the list of severity indicators constructed here can be used as a resource associated with screening indicators to assess the severity of maternal depression.

CONCLUSION

The systematization of clinical indicators associated with the severity of recurrent depression in women / mothers of schoolchildren favored an expanded understanding of this disorder as a predictor of behavioral problems in general and internalizing and externalizing symptoms for schoolchildren.

The listed items proved to be relevant for the identification of the weight of severity for children's outcomes and can therefore be configured as complementary resources for the assessment of severity when using tracking instruments. In this sense, the model tested for the negative impact of the severity of maternal depression for behavioral problems in children, at school age, also revealed itself as a possibility for advancing the understanding of predictors for child development, in the presence of important associated social determinants. sociodemographic conditions of families.

As to the method, the cross-sectional design and the convenience sample accessed in specific clinical services were considered limitations to the generalization of the findings, which suggests the need for future longitudinal studies.

Despite this, the main contribution of the study is the verification of the different impact of the severity of depression, assessed through specific clinical indicators, which, due to the

ease of application, can be used as complementary in the systematic clinical evaluation of depression screening at different levels of health care, thus increasing the quality of evaluations, which, in turn, favors care with maternal and child mental health.

REFERENCES

1. American Psychiatric Association. Manual Diagnóstico e Estatístico de Transtornos Mentais – DSM-5. 9ed. Porto Alegre: Artmed Editora; 2014.
2. World Health Organization. Depression and other commom mental health [Internet]. Geneva: WHO; 2017 [cited in 16 abr 2019]. Available at: https://apps.who.int/iris/bitstream/handle/10665/254610/WHO-MSD-MER-2017.2-eng.pdf;jsessionid=9862C65A30FA4A7808AB011308217674?sequence=1
3. World Health Organization. Depression [Internet]. Geneva: WHO; 2018 [cited in 16 abr 2019]. Available at: https://www.who.int/en/news-room/fact-sheets/detail/depression
4. Molina MRAL, Wiener CD, Branco JC, Jansen K, Souza LDMD, Tomasi E, Pinheiro RT. Prevalência de depressão em usuários de unidades de atenção primária. Rev Psiquiatr Clín. [Internet]. 2012 [cited in 16 abr 2019]; 39(6):194-7. Available at: http://www.scielo.br/pdf/rpc/v39n6/03.pdf DOI: http://dx.doi.org/10.1590/S0101-60832012000600003
5. Cardoso TSG, Siquara GM, Freitas PM. Relações entre depressão materna e problemas de comportamento em crianças. Psicol Argum. [Internet]. 2014 [cited in 16 abr 2019]; 32(79):131-41. DOI: http://dx.doi.org/10.7213/psicol.argum.32.079.AO08
6. Hser Y, Lanza I, Li L, Kahn E, Evans E, Schulte M. Maternal mental health and children's internalizing and externalizing behaviors: beyond maternal substance use disorders. J Child Fam Stud. [Internet]. 2015 [cited in 16 abr 2019]; 24:638-48. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4349431/pdf/nihms543556.pdf DOI: http://dx.doi.org/10.1007/s10826-013-9874-3
7. Jacobs RH, Talati A, Wickramaratne P, Warner V. The influence of paternal and maternal major depressive disorder on offspring psychiatric disorders. J Child Fam Stud. [Internet]. 2015 [cited in 16 abr 2019]; 24(8):2345-51. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4706755/pdf/nihms625139.pdf DOI: http://dx.doi.org/10.1007/s10826-014-0037-y
8. Van Doorn MME, Kuijpers RCWM, Lichtwarck-Aschoff A, Bodden D, Jansen M, Gramic I. Does mother-child interaction mediate the relation between maternal depressive symptoms and children's mental health problems? J Child Fam Stud. [Internet]. 2016 [cited in 16 abr 2019]; 25:1257-68. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4779455/pdf/10826_2015_Article_309.pdf DOI: http://dx.doi.org/10.1007/s10826-015-0309-1
9. Yan N, Zhou N, Ansari A. Maternal depression and children's cognitive and socio-emotional development at first grade: the moderating role of classroom emotional climate J Child Fam Stud. [Internet]. 2016 [cited in 16 abr 2019]; 25:1247-56. Available at: https://link.springer.com/content/pdf/10.1007%2Fs10826-015-0301-9.pdf DOI: http://dx.doi.org/10.1007/s10826-015-0301-9
10. Boyd RC, Waanders C. Protective factors for depression among African American children of predominantly low-income mothers with depression. J Child Fam Stud. [Internet]. 2013 [cited in 16 abr 2019]; 22:85-95. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4196212/pdf/nihms-628256.pdf DOI: http://dx.doi.org/10.1007/s10826-012-9588-y
11. World Health Organization. Social determinants of mental health [Internet]. Geneva: WHO; 2014 [cited in 16 abr 2019]. Available at: http://www.who.int/mental_health/publications/gulbenkian_paper_social_determinants_of_mental_health/en/
12. Sweeney S, MacBeth M. The effects of paternal depression on child and adolescent outcomes: a systematic review. J Affect Disord. [Internet]. 2016 [cited in 16 abr 2019]; 15(205):44-59. Available at: https://reader.elsevier.com/reader/sd/pii/S0165032715312404?token=346E3F6C0928F80536

6A985B7183A9F29D9A18652A17A905581203636920B9164E9774DEEA9567AC2BC32272E7DB4140. DOI: http://dx.doi.org/10.1016/j.jad.2016.05.073
13. Goodman SH, Rouse MH, Connel AM, Broth MR, Hall CM, Heyward D. Maternal depression and child psychopathology: a meta-analytic review. Clin Child Fam Psychol Rev. [Internet]. 2011 [cited in 16 abr 2019]; 14(1):1-27. Available at: https://link.springer.com/content/pdf/10.1007%2Fs10567-010-0080-1.pdf. DOI: http://dx.doi.org/10.1007/s10567-010-0080-1
14. Pizeta FA, Silva TBF, Cartafina MIB, Loureiro SR. Depressão materna e riscos para o comportamento e a saúde mental das crianças: uma revisão. Estud Psicol. (Natal) [Internet]. 2013 [cited in 16 abr 2019]; 18(3):429-37. Available at: http://www.scielo.br/pdf/epsic/v18n3/03.pdf DOI: http://dx.doi.org/10.1590/S1413-294X2013000300003
15. Organização Mundial de Saúde. Classificação de transtornos mentais e de comportamento da CID-10: descrições clínicas e diretrizes diagnósticas. Porto Alegre: Artes Médicas; 2014.
16. Schmidt MI, Duncan BB, Azevedo e Silva G, Menezes AM, Monteiro CA, Barreto SM, et al. Chronic non-communicable diseases in Brazil: burden and current challenges. Lancet [Internet]. 2011 [cited in 16 abr 2019]; 377:1949-61. Available at: https://reader.elsevier.com/reader/sd/pii/S0140673611601359?token=73D55812D237719577E92FE94CDC158C655408C074F653A7D51F4B448F847878031FDC7BD4C89E631176D62AA3800017 DOI: http://dx.doi.org/10.1016/S0140-6736(11)60135-9
17. Spitzer R, Kroenke K, Williams J. Validation and utility of a self-report Version of PRIME-MD: the PHQ Primary Care Study. J Am Med Assoc. [Internet]. 1999 [cited in 16 abr 2019]; 282(18):1737-44. Available at: https://jamanetwork.com/journals/jama/fullarticle/192080 DOI: http://dx.doi.org/10.1001/jama.282.18.1737
18. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. J Gen Intern Med. [Internet]. 2001 [cited in 16 abr 2019]; 16(9):606-13. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1495268/pdf/jgi_01114.pdf DOI: http://dx.doi.org/10.1046/j.1525-1497.2001.016009606.x
19. Osório FL, Mendes AV, Crippa JA, Loureiro SR. Study of the discriminative validity of the PHQ-9 and PHQ-2 in a sample of Brazilian women in the context of primary health care. Perspect Psychiatr Care [Internet]. 2009 [cited in 16 abr 2019]; 45(3):216-27. Available at: https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1744-6163.2009.00224.x DOI: http://dx.doi.org/10.1111/j.1744-6163.2009.00224.x
20. Del-Ben CM. Estudo da confiabilidade do diagnóstico psiquiátrico obtido através da entrevista clínica estruturada para o DSM-III-R (SCID) em serviço ambulatorial de um hospital escola. [dissertação]. Ribeirão Preto, SP: Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo; 1995.
21. Del-Ben CM, Vilela JAA, Crippa JAS, Hallak JEC, Labate CM, Zuardi AW. Confiabilidade da Entrevista Clínica Estruturada para DSM-IV – versão clínica traduzida para o português. Rev Bras Psiquiatr. [Internet]. 2001 [cited in 16 abr 2019]; 3(23):156-9. Available at: http://www.scielo.br/pdf/rbp/v23n3/a08v23n3.pdf DOI: http://dx.doi.org/10.1590/S1516-44462001000300008
22. Goodman R. The strengths and difficulties questionnaire: a research note. J Child Psychol Psychiatry [Internet]. 1997 [cited in 16 abr 2019]; 38(5):581-6. Available at: https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1469-7610.1997.tb01545.x DOI: http://dx.doi.org/10.1111/j.1469-7610.1997.tb01545.x
23. Fleitlich BW, Cortázar PG, Goodman R. Questionário de Capacidades e Dificuldades (SDQ). Infanto Rev Neuropsiquiatr Infânc Adolesc. [Internet]. 2000 [cited in 16 abr 2019]; 1(8):44-50. Available at: https://pesquisa.bvsalud.org/portal/resource/pt/lil-275954
24. Woerner W, Fleitlich-Bilyk B, Martinussen R, Fletcher J, Cucchiaro G, Dalgalarrondo P, et al. The Strengths and Difficulties Questionnaire overseas: evaluations e applications of the SDQ beyond Europe. Eur Child Adolesc Psychiatry [Internet]. 2004 [cited in 16 abr 2019]; 13(Suppl. 2):II47-II54. Available at: https://link.springer.com/content/pdf/10.1007%2Fs00787-004-2008-0.pdf. DOI: http://dx.doi.org/10.1007/s00787-004-2008-0

25. Maroco J Análise estatística com o SPSS. 6a ed. Pero Pinheiro, Portugal: Ed. Reportnumber; 2014.
26. Barker ED, Copeland W, Maughan B, Jaffee SR, Uher R. The relative impact of maternal depression and associated risk factors on offspring psychopathology. Br J Psychiatr. [Internet]. 2012 [cited in 05 de jan 2020]; 200(2):124-9. Available at: https://www.cambridge.org/core/services/aop-cambridge-core/content/view/2C2DBAD78CB2763623790D8D85F8518F/S0007125000257590a.pdf/relative_impact_of_maternal_depression_and_associated_risk_factors_on_offspring_psychopathology.pdf DOI: http://dx.doi.org/10.1192/bjp.bp.111.092346
27. Bouvette-Turcot AA, Unternaehrer E, Gaudreau H, Lydon JE, Steiner M, Meaney MJ. The joint contribution of maternal history of early adversity and adulthood depression to socioeconomic status and potential relevance for offspring development. J Affect Disord. [Internet]. 2017 [cited in 05 de jan 2020]; 207:26-31. Available at: https://reader.elsevier.com/reader/sd/pii/S0165032716304864?token=9BC36B833AE0CDD06046D4D630C87BCA49B6DEE44DBE12B6EA787FDAACB05C220002C021D03FC8DE03007CD2BB8AC9A1 DOI: http://dx.doi.org/10.1016/jjad.2016.08.012
28. Evans GW, Li D, Whipple SS. Cumulative risk and child development. Psychol Bull. [Internet]. 2013 [cited in 05 de jan 2020]; 139(6):1342-96. Available at: https://psycnet.apa.org/fulltext/2013-12151-001.pdf. DOI: http://dx.doi.org/10.1037/a0031808
29. Callender KA, Olson SL, Choe DE, Sameroff AJ. The effects of parental depressive symptoms, appraisals, and physical punishment on later child externalizing behavior. J Abnorm Child Psychol. [Internet]. 2012 [cited in 05 de jan 2020]; 40(3):471-83. Available at: https://link.springer.com/content/pdf/10.1007%2Fs10802-011-9572-9.pdf DOI: http://dx.doi.org/10.1007/s10802-011-9572-9

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