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Maternal Burnout: Prevalence and Associated Factors in Northern Benin (2023)

Ireti Nethania Elie Ataigba[1,2,3] , **Guy Gérard Aza Gnandji[4,5], David Sinet Koivogui[6],**
Owèrè Charlotte Dagan[2], Coovi Ignace Tokpanoude[2], Kwamé Abdias Adoufou[2],
Anselme Djidonou[1,2], Francis Tognon Tchegnonsi[1,2], Prosper Gandaho[1,2],
Josiane Ezin-Houngbe[4,5]

[1]Institut de Formation en Soins Infirmiers et Obstétricaux, Faculté de Médecine, Université de Parakou, Parakou, Bénin
[2]Service de Psychiatrie, Centre Hospitalier Universitaire Départemental du Borgou Alibori, Parakou, Bénin
[3]Organisation Non Gouvernementale de Soutien Réhabilitation Insertion et Réinsertion (SouRIR ONG), Parakou, Bénin
[4]Faculté des Sciences de la Santé, Université d'Abomey-Calavi, Cotonou, Bénin
[5]Service de Psychiatrie, Centre National Hospitalier Universitaire Hubert Koutoucou Maga de Cotonou, Cotonou, Bénin
[6]Faculté des Sciences et Techniques de la Santé, Université Gamal Abdel Nasser de Conakry, Conakry, Guinée
Email: *elieataigba@gmail.com

Abstract

Introduction: Also known as maternal burnout syndrome, maternal burnout is a state of physical, emotional and mental exhaustion generated by prolonged stress in the family environment. It is experienced by women in their role as mothers. Those affected can develop psychological disorders, sleep disturbances, etc., all of which impair their day-to-day lives, and thus their maternal role. The repercussions affect both the child and other family members. **Objective:** The aim of the present study was to investigate maternal burnout among female users of public and private health facilities in the commune of Parakou in 2023. **Methods:** Descriptive cross-sectional study was conducted from December 2022 to July 2023 among all mothers using public and private health facilities in the commune of Parakou. All healthy mothers with at least one biological or adoptive child fully dependent on them and living at home, who came for a consultation in one of the health facilities or for an appointment at the Expanded Program on Immunization (EPI) and gave their free and informed consent. Sampling was done for non-exhaustive convenience were included in the study. Burnout was assessed using the Parental Burnout Assessment (PBA) scale. **Results:** A total of 888 mothers meeting the inclusion criteria were surveyed. The prevalence of burnout calculated using the Parental Burnout Assessment (PBA) scale was 6.19%. The risk factors for maternal burnout were poor relationships with family and friends (OR = 8.90; p = 0.045), moderate (OR = 11.71; p = 0.020)

and severe depression (OR = 40.85; p = 0.001), followed by the presence of repeated nocturnal awakening (OR = 5.14; p = 0.014). **Conclusion:** This is a subject that is almost never discussed in African society, but whose reality is revealed by the present study, which provided statistical data on maternal burnout. From now on, the risk of burnout will no longer be discussed solely in the family context. It will also need to be explored within the family unit to prevent its deleterious consequences for children and adults alike.

Keywords

Burnout, Maternal, Benin, 2023

1. Introduction

Also known as maternal exhaustion syndrome, maternal burn-out is a state of physical, emotional and mental exhaustion, generated by a situation of prolonged stress in the family environment [1]. It has four dimensions. The first is overwhelming exhaustion linked to the parental role. The second is an emotional estrangement from their children. The third is a sense of ineffective parenting. The fourth dimension is the contrast with the previous parental self [2].

In Belgium in 2022, an estimated prevalence of parental burnout of 8.8% was reported [3]. In Japan in 2018, 17.3% of parents were considered to be experiencing burnout [2]. In France in 2018, a 20% prevalence of maternal burnout had been reported [4]. In the Netherlands in 2018, 2.1% were considered to be experiencing parental burnout [5]. In 2017 in Togo a prevalence of 1.90% had been reported [6]. In Cameroon in 2018, 6.8% of parents were in burnout. Recent research suggests that parental burnout can be very damaging [7]. Indeed, unable to give up their parental role or to request sick leave as in the professional field, burned-out parents find physical means of escape such as ideas of running away (to leave without leaving an address), suicidal thoughts until even actual suicide. Dependence on psychoactive substances, behavioral addictions, somatic complaints and sleep disorders were frequently reported. On a social and family level, it sometimes leads to marital conflict and estrangement from one's partner. Children suffer physical and verbal abuse [2]. These consequences underline the urgent need for targeted and effective interventions to prevent and treat parental burnout [7]. Indeed, the burnt out parent may benefit from drug treatment in combination with individual and group psychotherapy, depending on the causal etiology identified [8].

However, the issue is still taboo in our culture for parents, especially symptomatic mothers [9]. It's hard to understand how a woman can be unhappy with her role as a mother, such a noble function that nature has chosen to bestow upon her. In such cases, preventive and curative actions are not possible. To assess the existence and extent of maternal burnout in our country, we need to take stock of the situation. The present study, part of a doctoral thesis in medi-

cine, set out to investigate maternal burnout among female users of public and private health facilities in a commune in northern Benin (Parakou) in 2023.

2. Study Framework and Methods

2.1. Population and Procedures

Descriptive cross-sectional study conducted from December 2022 to July 2023 in public and private health facilities in the commune of Parakou. The study population consisted of all mothers using public and private health facilities in the commune of Parakou. The minimum sample size was calculated using the Schwartz formula, with reference to a study by Séjourné *et al.* conducted in France in 2018, in which the prevalence of maternal burnout was 20% [4]. The minimum sample size thus calculated was 245 mothers. The sampling technique was non-exhaustive convenience recruitment. All mothers meeting the inclusion criteria and having consented to participate in the study have been taken into account. Therefore, all healthy mothers with at least one biological or adoptive child fully dependent on them, living at home, who came for a consultation at one of the health facilities or for an appointment at the Expanded Program on Immunization (EPI) and who had given their free and informed consent, were included in the study. Thus, only mothers present at the time of the survey team's visit were surveyed.

2.2. Measurements

A digitized survey form was used, including general information such as: socio-demographic, economic and behavioral data, data related to personal medical history and biography.

The dependent variable was maternal burnout. It was assessed using the Parental Burnout Assessment (PBA) scale [1]. The PBA (Parental Burnout Assessment) is a scale that provides information on the risk of developing parental burnout and also screens for parental exhaustion. It was created by Roskam *et al.* in 2018 and validated in French in 2020 by Sánchez-Rodríguez *et al.* [10]. It is a self-assessment comprising 23 items with four sub-items: emotional exhaustion (9 items); contrast with previous parental self (6 items); feeling fed up (5 items) and emotional distancing (3 items). Items are scored on 7-point Likert scales: never = 0, at least few times a year = 1, at least once a month = 2, few times a month = 3, once a week = 4, few times a week = 5, everyday = 6. Time taken is 10 min. Scoring is a simple summation of items. Scores are divided into five distinct categories: score less than or equal to 30: no parental burnout; score between 31 and 45 inclusive: low burnout risk; score between 46 and 60: moderate burnout risk; score between 61 and 75 inclusive: high burnout risk, then score greater than or equal to 76: confirmed burnout [9].

To assess depression, the Patient Heath Questionnaire-Nine (PHQ-9) scale [11] was used.

This is a brief tool used to diagnose and measure the severity of depression.

The PHQ-9 is shorter than many other depression screening instruments and can be self-administered. Adapted from the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), the PHQ-9 take in the 9 diagnostic symptom criteria used in the DSM-IV, including the two cardinal signs of depression: anhedonia and depressed mood. The PHQ-9 was developed by Drs. Robert L. Spitzer, Janet W.B. Williams and Kurt Kroenke in 1999. Each item is rated on a severity scale from 0 to 3, where the respondent is asked to rate how often each symptom has occurred in the previous two weeks (0-not at all; 1-few days; 2-over half the days or 3-almost every day), producing a total score ranging from 0 to 27. The subject is also asked to what extent the identified problems have interfered with work, home or social life, however, responses to this item are not scored or included in the total score [11]. Score interpretation is as follows: [1] [2] [3] [4]: minimal depression; [5] [6] [7] [8] [9]: mild depression; [1] [10] [11] [12] [13]: moderate depression; [14] [15] [16] [17] [18]: moderately severe depression; [19]-[26]: severe depression.

2.3. Analysis

Data were analyzed using SPSS 25 software. Quantitative variables were expressed as mean with standard deviation and qualitative variables as proportion with confidence interval. Chi-square and Fisher tests were used to compare qualitative variables. The association between one or two variables was established for a p-value < 0.05. Variables statistically associated at the 5% threshold were used for multivariate analysis using binary logistic regression to determine the relationship between maternal burnout and the various independent variables, using the Odds Ratio (OR) and 95% confidence interval (95% CI).

3. Ethical Considerations

After a favorable opinion from the ethics committee, an authorization to investigate was obtained from the dean's office at the University of Parakou. In a second phase, authorization was obtained from the departmental health directorate, the Parakou-N'Dali health zone office and various promoters of the private clinics concerned in the town of Parakou.

4. Results

A total of 888 mothers were surveyed.

4.1. Socio-Demographic Characteristics

Within the study population, the majority of women surveyed were aged 30 or under (75.90%). Almost all (99.44%) lived in urban areas and had a secondary education (48.31%). Married women were the most represented (63.74%).

The average age of mothers with maternal burnout was 27.65 +/− 6.83 years, with extremes ranging from 14 to 44 years. They all lived in urban areas and were mostly (58.18%) married (Table 1).

Table 1. Distribution of surveyed mothers by socio-demographic characteristics (Parakou 2023).

	Sample (N = 888)	Maternal burnout	
		No (n = 833)	Yes (n = 55)
Age			
≤30	674 (75.90%)	636 (76.35%)	38 (69.09%)
]31 - 40]	186 (20.95%)	171 (20.53%)	15 (27.27%)
≥41	28 (03.15%)	26 (03.12%)	2 (03.64%)
Place of residence			
Urban	883 (99.44%)	828 (99.40%)	55 (100.00%)
Rural	5 (00.56%)	5 (00.60%)	-
Level of education			
No schooling	99 (11.15%)	96 (11.52%)	3 (5.45%)
Primary	209 (23.54%)	189 (22.69%)	20 (36.36%)
Secondary	429 (48.31%)	409 (49.10%)	20 (36.36%)
University	151 (17.00%)	139 (16.69%)	12 (21.82%)
School failure			
No	545 (61.37%)	509 (61.10%)	36 (65.45%)
Yes	343 (38.63%)	324 (38.90%)	19 (34.55%)
Marital status			
Married	566 (63.74%)	534 (64.11%)	32 (58.18%)
Cohabiting	283 (31.87%)	262 (31.45%)	21 (38.18%)
Single	34 (03.83%)	34 (04.08%)	-
Divorced	4 (00.45%)	2 (00.24%)	2 (03.64%)
Widowed	1 (00.11%)	1 (00.12%)	-

4.2. Social Features

Among women with maternal burnout, the most reported distraction was television 31 (56.36%). Around one in two (49.09%) described themselves as extroverted, and 15 (27.27%) were shy. In addition, 51 (92.73%) had a poor relationship with their immediate environment, 29 (52.73%) lived in rented accommodation and 13 (23.64%) lived in a family home. Among them, 7 (12.73%) had an obsessive-compulsive personality (Table 2).

4.3. Biographical Data and Repercussions

Within the study population, 881 (99.21%) of the women had a good relationship with their siblings. They were mostly youngest (62.80%) and worked in usual conditions (55.23%). Of the 279 (31.42%) women who claimed to have sexual relations, 137 (49.10%) said they did so regularly. About one in ten (9.35%) had severe depression.

Table 2. Distribution of surveyed mothers by social characteristics (Parakou 2023).

	Sample (N = 888)	Maternal burnout	
		No (n = 833)	Yes (n = 55)
Entertainment			
Television	542 (61.04%)	511 (61.34%)	31 (56.36%)
Radio	298 (33.56%)	193 (23.17%)	7 (12.73%)
Social networks	273 (31.08%)	260 (31.21%)	16 (29.09%)
Chat	200 (22.52%)	287 (34.45%)	11 (20.00%)
Outing	131 (14.75%)	126 (15.13%)	5 (9.09%)
Reading	76 (8.56%)	70 (8.40%)	6 (10.91%)
Music	38 (100%)	29 (100.00%)	9 (100.00%)
Other	11 (1.29%)	9 (1.12%)	2 (4.35%)
Behavioral self-description			
Hyper-emotional	281 (31.64%)	277 (33.25%)	4 (7.27%)
Shy	255 (28.72%)	240 (28.81%)	15 (27.27%)
Extraverted	254 (28.60%)	227 (27.25%)	27 (49.09%)
Introverted	98 (11.04%)	89 (10.68%)	9 (16.36%)
Relationship with immediate environment			
Good	649 (73.09%)	598 (71.79%)	5 (7.27%)
Poor	239 (26.91%)	235 (28.21%)	51 (92.73%)
Living environment			
Rented alone	439 (49.44%)	410 (49.22%)	29 (52.73%)
Own home	239 (26.91%)	226 (27.12%)	13 (23.64%)
Family home	210 (23.65%)	197 (23.55%)	13 (23.64%)
Family support			
Yes	186 (88.57%)	173 (87.82%)	13 (100.00%)
No	24 (11.43%)	24 (12.18%)	-
Obsessive-compulsive personality			
Yes	61 (06.87%)	54 (6.48%)	7 (12.73%)
No	827 (93.81%)	779 (93.52%)	48 (87.27%)

Of the women with maternal burnout, 26 (47.27%) were second born, 20 (86.96%) worked under usual conditions, 19 (76.00%) had frequent sexual activity and 22 (40.00%) had severe depression (Table 3).

4.4. Prevalence of Maternal Burnout

In the present study, the prevalence of maternal burnout was 6.19%, totaling 55 women diagnosed by using the Parental Burnout Assessment (PBA) scale.

Table 3. Distribution of surveyed mothers by biographical data and impact (Parakou, 2023).

	Sample (N = 888)	Maternal burnout	
		No (n = 833)	Yes (n = 55)
Relationship with siblings			
Good	881 (99.21%)	826 (99.16%)	55 (100.00%)
Poor	7 (00.79%)	7 (00.84%)	-
Sibling rank			
First born	205 (23.11%)	184 (22.09%)	21 (38.18%)
Second born	557 (62.80%)	531 (63.75%)	26 (47.27%)
Last born	125 (14.09%)	117 (14.05%)	8 (14.55%)
Working conditions			
Poor	9 (02.19%)	9 (02.32%)	-
Average	227 (55.23%)	207 (53.35%)	20 (86.96%)
Good	166 (40.39%)	163 (42.01%)	3 (13.04%)
Very good	9 (02.19%)	9 (02.32%)	-
Time spent by father with children (hour/day)			
≤4	300 (33.78%)	293 (35.17%)	7 (12.73%)
>4	588 (66.22%)	540 (64.83%)	48 (87.27%)
Behavior of last child (n = 881)			
Happy and cheerful	354 (40.18%)	321 (38.54%)	33 (60.00%)
Hyper-affective	306 (34.73%)	296 (35.84%)	10 (18.18%)
Shy	123 (13.96%)	116 (14.04%)	7 (07.27%)
Turbulent	92 (10.44%)	88 (10.65%)	4 (12.73%)
Aggressive	6 (00.68%)	5 (00.60%)	1 (01.82%)
Sexual activity			
No	609 (68.58%)	579 (69.51%)	30 (54.55%)
Yes	279 (31.42%)	254 (30.49%)	25 (45.45%)
Frequency of sexual intercourse (n = 279)			
Rarely	127 (45.52%)	121 (46.64%)	6 (24.00%)
Often	137 (49.10%)	118 (46.46)	19 (76.00%)
Very often	15 (05.38%)	15 (05.90%)	-
Relationship with husband			
Good	876 (98.65%)	822 (98.68%)	54 (98.18%)
Bad	12 (01.35%)	7 (00.84%)	1 (01.82%)
Night-time awakening			
No	523 (58.90%)	507 (60.86%)	16 (29.09%)
Yes	365 (41.10%)	326 (39.14%)	39 (70.91%)
Number of nocturnal awakenings (n = 365)			
1	12 (03.29%)	11 (03.37%)	1 (02.56%)
>1	353 (96.71%)	315 (96.63%)	38 (97.44%)

Continued

Estimated sleep time 0 (hour/day)			
≤8	802 (90.32%)	748 (89.80%)	54 (87.27%)
>8 h	86 (09.68%)	85 (10.20%)	1 (12.73%)
Current depression			
Absent	412 (46.40%)	410 (49.22%)	2 (03.64%)
Mild	248 (27.93%)	236 (28.33%)	12 (21.82%)
Moderate	145 (16.33%)	126 (15.13%)	19 (34.55%)
Severe	83 (09.35%)	61 (07.32%)	22 (40.00%)

4.5. Search for Statistically Significant Association with the Occurrence of Maternal Burnout in Bivariate Analysis

In bivariate analysis, the following variables showed a statistically significant association with the occurrence of maternal burnout: level of education ($p = 0.040$), respondent's character ($p < 0.001$), relationship with immediate environment ($p = 0.001$), sibling rank ($p = 0.010$), relationship with siblings ($p = 0.040$), working conditions ($p = 0.010$), father's time with children ($p = 0.001$), behavior of last child ($p = 0.001$), frequency of sexual intercourse ($p = 0.020$), relationship with husband ($p = 0.010$), sleep time per day ($p = 0.040$), nocturnal awakenings ($p < 0.001$) and depression ($p < 0.001$) (Table 4).

4.6. Search for Factors Associated with the Occurrence of Maternal Burnout in Multivariate Analysis

Multivariate analysis showed that the quality of the relationship with the entourage ($p = 0.045$), depressive state ($p = 0.001$) and recurrent nocturnal awakenings (0.014) were associated with the occurrence of burnout. Risk factors for maternal burnout were a poor relationship with family and friends ($OR = 8.90$; $p = 0.045$), moderate depression ($OR = 11.71$; $p = 0.020$) and severe depression ($OR = 40.85$; $p = 0.001$), followed by the presence of repeated nocturnal awakenings ($OR = 5.14$; $p = 0.014$). Women with a poor relationship with their neighborhood were 8.9 times more likely to develop maternal burnout. The presence of moderate depression multiplied the risk of maternal burnout by 11.71, and severe depression by a risk of 40.85. Finally, repeated nocturnal awakenings multiply the risk of maternal burnout by 5.14 compared to subjects with good sleep quality (Table 5).

5. Discussion

5.1. Socio-Demographic Characteristics

Age

The average age of the mothers surveyed in this work was 27.18 +/− 6.42 years, with extremes ranging from 14 to 76 years. This result is near to that found by Rodrigo *et al.* [10] in 2020 in France (mean age 31.69 +/− 5.52 years) and by Séjourné *et al.* [4] in 2018 in France (mean age 33.85 +/− 6.36 years).

Table 4. Search for statistically significant association with the occurrence of maternal burnout in bivariate analysis (Parakou, 2023).

	Maternal burnout		Khi2	p-value
	No (n = 833)	Yes (n = 55)		
Level of education			8.33	*0.040*
No schooling	96 (11.52%)	3 (05.45%)		
Primary	189 (22.69%)	20 (36.36%)		
Secondary	409 (49.10%)	20 (36.36%)		
University	139 (16.69%)	12 (21.82%)		
Character of respondent			21.15	*<0.001*
Hyper-affective	277 (33.25%)	4 (07.27%)		
Shy	240 (28.81%)	15 (27.27%)		
Outgoing	227 (27.25%)	27 (49.09%)		
Introverted	89 (10.68%)	9 (16.36%)		
Relationship with immediate environment			11.49	*0.001*
Good	598 (71.79%)	5 (07.27%)		
Poor	235 (28.21%)	51 (92.73%)		
Relationship with siblings			6.27	*0.040*
Good	826 (99.16%)	55 (100.00%)		
Poor	7 (00.84%)	-		
Sibling rank			8.02	*0.010*
Oldest	184 (22.09%)	21 (38.18%)		
Youngest	531 (63.75%)	26 (47.27%)		
Benjamin	117 (14.05%)	8 (14.55%)		
Working conditions			10.01	*0.010*
Poor	9 (02.32%)	-		
Average	207 (53.35%)	20 (86.96%)		
Good	163 (42.01%)	3 (13.04%)		
Very good	9 (02.32%)	-		
Time spent by father with children (hour/day)			11.62	*0.001*
≤4	293 (35.17%)	7 (12.73%)		
>4	540 (64.83%)	48 (87.27%)		
Behavior of last child (n = 881)			12.1	*0.001*
Happy and cheerful	321 (38.54%)	33 (60.00%)		
Hyper-affective	296 (35.84%)	10 (18.18%)		
Shy	116 (14.04%)	7 (07.27%)		
Turbulent	88 (10.65%)	4 (12.73%)		
Aggressive	5 (00.60%)	1 (01.82%)		

Continued

Frequency of sexual relations			5.36	*0.020*
Rarely	121 (14.53%)	6 (10.91%)		
Often	118 (14.17%)	19 (34.55%)		
Very often	15 (01.80%)	-		
Relationship with husband			8.7	*0.010*
Good	822 (98.68%)	54 (98.18%)		
Poor	7 (00.84%)	1 (01.82%)		
Sleep time (hour/day)			4.14	*0.040*
≤8	748 (89.80%)	54 (87.27%)		
>8 h	85 (10.20%)	1 (12.73%)		
Repeated night awakenings			21.51	*<0.001*
No	507 (60.86%)	16 (29.09%)		
Yes	326 (39.14%)	39 (70.91%)		
Current depression			94.74	*<0.001*
Absent	410 (49.22%)	2 (03.64%)		
Mild	236 (28.33%)	12 (21.82%)		
Moderate	126 (15.13%)	19 (34.55%)		
Severe	61 (07.32%)	22 (40.00%)		

Table 5. Factors associated with the occurrence of maternal burnout in multivariate analysis (Parakou, 2023).

	Maternal burnout			
	No (n = 833)	**Yes (n = 55)**	**OR (IC95%)**	**p-value**
Relationship with the immediate environment				
Good	235 (98.33%)	04 (01.67%)	1	
Poor	598 (92.14%)	51 (07.86%)	8.90 [1.045 - 75.92]	*0.045*
Current depression				0.001
None	410 (99.51%)	02 (00.49%)	1	
Slight	236 (95.16%)	12 (04.84%)	4.21 [0.466 - 38.18]	0.200
Moderate	126 (86.90%)	19 (13.10%)	11.71 [1.348 - 101.894]	*0.020*
Severe	61 (73.49%)	22 (26.51%)	40.85 [4.583 - 364.241]	*0.001*
Repeated nocturnal awakenings				*0.014*
No	507 (96.94%)	16 (03.06%)	1	
Yes	326 (89.32%)	39 (10.68%)	5.14 [1.38 - 19.10]	*0.014*

Several other authors have reported a higher prevalence. These include: Hatta *et al.* [6] in Togo in 2017 (mean age 37.83 +/− 8.76 22 to 65 years), Roskam *et al.* [12] in 2020 in Belgium (38.60 +/− 7.80 years), Arikan *et al.* [13] in 2020 in Tur-

key (mean age 36.77 +/− 6.51), Chen *et al.* [14] in 2022 in China (38.50 +/− 4.27), Blanchard *et al.* [15] in 2021 in Belgium (38.26 +/− 7.28 years) and Sodi *et al.* [16] (38.14 +/− 9.63).

The age of the husband included in their study may explain the high mean age for Hatta and Sodi *et al.* In addition, Chen *et al.* included also mothers with an adolescent child in their study. This result reveals that the subjects in this study are very young and motherhood is certainly early.

Marital status

In the present study, 566 (63.74%) women were married. This result is lower than that of Hatta *et al.* [6] in Togo in 2023 and Micolacjack *et al.* [18] who found 69.9% and 72% respectively. It is also lower than that of Rodriguez [10] in Belgium in 2020, who reported a proportion of 82.3% married women.

In addition, 34 (3.83%) of the women in the present study were single. These results are well above those of Rodriguez [10] in 2020 in France, who reported 9.8% single, Hubert *et al.* [9] in 2018 in Belgium with 13.5% single; Micolacjack *et al.* with 17% single [18].

5.2. Prevalence of Maternal Burnout

Of the 888 women surveyed, 55 had maternal burnout. This represents a prevalence of 6.19%.

This result is roughly equal to that of Roskam *et al.* [1] in Cameroon in 2018 in the general population (6.8%). In Lebanon in 2020, Myrna Gannagé *et al.* [19] found a prevalence of 7.5%.

Nevertheless, several authors have reported lower prevalences. These include Hatta *et al.* [6] in Togo in 2017: 1.9%; Sodi *et al.* [16] in Algeria in 2018: 1.3%; 2.1% in Rwanda in 2018 and 0.5% in Burundi in 2020. These differences may be linked to the sample size used in each of these studies. Hatta *et al.* had a very small sample size of 103 parents in Togo, while Sodi *et al.* had 187 parents in Burundi and 240 in Rwanda.

Conversely, higher prevalences have been reported by other authors. Séjourné *et al.* [4] found a prevalence of 20% among mothers in France in 2017 in the general population and Natalia Suárez *et al.* [20] found a prevalence of 23% in their study in Spain in 2021. Kawamoto *et al.* [2] reported a prevalence of 21% among mothers in Japan in 2020. Lindström *et al.* [21] found a prevalence of 42.90% among mothers having children with type 1 diabetes and inflammatory bowel disease in Örebro in 2010, compared with 20.50% of mothers with healthy children.

There are three possible explanations for these high prevalences of maternal burnout: the first could be the Burnout Measure Short-Ten (BMS-10) used to assess maternal burnout which differs from that used in this study. The second reason would be that women are more exposed than men to family stress linked to multiple roles [9] and being a man could be a protective factor against parental burnout [6]. Finally, the high level of burnout observed may be explained by

the fact that caring for a child with special needs requires more energy, financial resources, moral support and strong emotional stability [12] than all women have.

5.3. Biographical Characteristics

Most of the respondents' parents had attended school up to secondary level. However, there were more educated fathers than mothers (10.71% versus 27.68%). These figures are significantly higher than those found by Alwosaifer *et al.* in Saudi Arabia in 2018 (1.1% vs. 2.9%). This difference reflects the literacy rate in Benin: according to the UNESCO Institute for Statistics, it will stand at just 46% in 2021, much lower than the 99% found by the same institution in Saudi Arabia in 2020.

Then, the majority of those surveyed came from monogamous families (61.12%). Indeed, according to the fifth Benin Demographic and Health Survey (EDSB-V), 62% of women aged 15 to 49 were in monogamous unions and 38% were in polygamous unions. A similar trend was found by Aina *et al.* in Nigeria in 2016, but with a higher proportion 84% [8].

5.4. Factors Associated with Maternal Burnout

5.4.1. Relationship with the Immediate Environment

In this study, there was a significant association between maternal burnout and the relationship with the immediate environment (OR = 8.9; p = 0.045).

Isabelle Roskam [18] in her 2021 study of 40 countries showed that individualistic countries had high levels of burnout, in contrast to collectivist countries. In the same study, a significant association was found between individualism and parental burnout (p < 0.001). Indeed, globalization, westernization and modernization have changed the structure of the family in Africa. There are more nuclear families than extended ones. Collective life has given way to individualism which reduces interaction between individuals, and consequently reduces the social assistance or social support that a mother could benefit from.

Séjourné *et al.* [4] in 2018 in France and Griffith *et al.* [23] in 2022 in the USA in their study of parental burnout during COVID 19 noted an increase in the rate of parental burnout. Furthermore, Marchetti *et al.* in 2019 in Italy in their study carried out during covid 19 reported that weak social ties were a risk factor for burnout (p < 0.001) [23]. This may be explained by the fact that confinement forced parents to reduce their interaction with the immediate environment, thus increasing the rate of burnout.

5.4.2. Repeated Waking at Night

In the present study, there was a significant association between maternal burnout and sleep disorders (OR = 5.14; p = 0.014). The same finding was made by Roskam *et al.* [8] in 2018 in France on the consequences of burnout which showed a link between burnout and sleep disturbance (p < 0.05). Aunola *et al.* [24] also reported the same finding (p < 0.001). In fact, in situations of chronic

stress, cortisol level is very high, leading to a deficit in the production of melatonin, the sleep hormone. This causes sleep disorders, daytime drowsiness and profound physical exhaustion.

5.4.3. Depression

The present study shows a significant association between maternal burnout and moderate (OR = 11.71; p = 0.020) and severe (OR = 40.85; p = 0.001) depression. This result is similar to that reported by several authors in the literature. These include Séjourné *et al.* [4] in 2017 in France, who found a significant association with depression (p < 0.05), Kawamoto [2] in 2018 in Japan (p < 0.001), Deborah [26] in 2017 in France (p < 0.05), Riva *et al.* [26] in 2014 in Sweden in their study among parents of children who had undergone a stem cell transplant (p < 0.05) and Nyklíček [27] in his study in the Netherlands in 2005 (p = 0.001).

This may be explained by the fact that depression induces mood disorders that constitute a risk of parental exhaustion. Thus, mothers with a high level of depressive symptomatology have fewer emotional resources, leading to exhaustion in the management of their daily family life.

5.5. Study Limitations

In this study, the non-probability sampling method was used for convenience. The sample size was calculated using Schwartz's formula, based on an estimated average prevalence of 20% in France. The minimum sample size required was 250 mothers, but in this study a sample size of 888 was achieved. The Parental Burnout Assessment (PBA) scale was used to screen for the presence of maternal burnout.

However, the data collected were based on subjective reports. This raises the problem of over- or under-estimation of questions by certain targeted subjects, although detailed explanations of the importance of the study on the day of collection and the confidentiality of the data collected have helped to minimize this bias considerably.

It should also be noted that the lack of validation of the scales in our socio-cultural context could constitute a bias. However, the presence of interpreters translating the questions into the mother tongue of respondents who had difficulty with French reduced this bias as much as possible.

These limitations in no way detract from the reliability of our results, especially when compared with those of authors from other countries.

6. Conclusion

Understate, maternal burnout appears to be a silent destroyer in all countries, Benin being no exception. In fact, one mother in twenty suffered from maternal burnout. This is not without impact on the mother's performance in her participation in the collective development effort at both local and national levels. After multivariate analysis, the relationship with the immediate environment, recurrent nocturnal awakenings and moderate and severe depressions were identi-

fied as factors associated with maternal burnout. It would be interesting to complete this study with another one that includes both fathers and mothers on a larger scale, in order to propose effective and preventive measures for all.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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