


Burnout among Public Primary Education Staff in Bobo-Dioulasso (Burkina Faso)

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Abstract

Introduction: Burnout is a major occupational health problem today. Several factors could expose primary education staff to this condition. **Objective:** The objective of the study was to determine the extent of burnout and associated factors among primary education workers in Bobo-Dioulasso. **Method:** This was a descriptive and analytical cross-sectional study that took place from September 18, 2023, to July 12, 2024, among the agents of a basic education district in Bobo-Dioulasso. The data were collected using a questionnaire and a clinical examination and analyzed with Stata software, version 16. **Results:** A total of 229 agents were included in the study. The mean age was 44.99 ± 7.03 years. The sex ratio was 0.55. Among the participants, 207 (90.39%) worked in classrooms, while 212 (92.58%) had an average duration of 8 hours per day. The prevalence of burnout was 54.15%. The prevalence of high emotional exhaustion, high depersonalization, and low personal accomplishment was 27.51%, 21.40%, and 45.85%, respectively. The study did not find any factor associated with burnout. However, classroom work and high class sizes were associated with emotional exhaustion. On the other hand, working more than 8 hours a day reduced the risk of low personal accomplishment among agents. **Conclusion:** The prevalence of burnout is high among primary education staff in Bobo-Dioulasso. Socio-professional factors are associated with the dimensions of the pathology. Prevention is necessary to protect the health of staff and increase academic performance.

Keywords

Burnout, Agents, Primary Education

1. Introduction

The organization of work oriented towards research accumulates better returns, without taking into account the well-being of the actors at the source, and have consequences on the psychological health of the workers. Indeed, psychosocial risks, in particular burnout, constitute nowadays a major problem of health at work. This syndrome resulting from situations of chronic stress brings together three dimensions, in particular emotional exhaustion, depersonalization, and lack of personal accomplishment. All workers are exposed to it, in particular those assigned to the professions of assistance, care, and teaching [1]. The extent of this pathology varies according to the country and the organization of each company. A study among teachers in Quebec in 2000 objectively found a prevalence of burnout of 6.6% [2]. Studies carried out in Africa among teaching staff show higher prevalences of this pathology which can reach 64% [3]-[5]. Several factors are associated with its occurrence, including work overload, low decision-making latitude, low rewards, and vagueness of objectives [1]. All these risk factors can be observed in most professions. However, teaching remains a noble and specific profession that requires intense personal commitment from staff through the preparation and delivery of lessons as well as the correction of students' work, sometimes in classes with large numbers of students in our context. Added to this are poor working conditions, as observed in most public educational establishments during workplace monitoring activities in these schools. The consequences of burnout are significant for the individual and can negatively impact those around them professionally, including colleagues, students, and parents. On an individual level, the signs associated with it are emotional, cognitive, physical, and interpersonal [1].

In Burkina Faso, little data are available on the extent of burnout in public educational institutions. However, a study conducted among nurse anesthetists in the country in 2024 revealed a high prevalence of 99.2% of this pathology [6]. Also, studies show a high prevalence of occupational stress in the country. Diédhiou *et al.* [7] noted a prevalence of occupational stress of 52.4% among midwives and obstetricians at the Yalgado Ouédraogo University Hospital. This prevalence was 70.62% in the study conducted by Traoré *et al.* [8] among workers of a railway transport company. Since burnout is the consequence of chronic stress, and this is associated with poor working conditions in public educational institutions in this western part of the country, it seems necessary to assess its extent in the primary education sector and research the associated factors in order to contribute to the prevention of this pathology.

2. Method

This was a descriptive and analytical cross-sectional study that took place from September 18, 2023 to July 12, 2024 among workers in a basic education district in Bobo-Dioulasso. An exhaustive sample, taking into account all workers in the basic education district, was carried out. The variables studied were socio-profes-

sional characteristics, eating history and habits, and burnout. Burnout was assessed using the Maslach Burnout Inventory (MBI) questionnaire, which includes three dimensions: emotional exhaustion, depersonalization, and personal accomplishment. Emotional exhaustion was assessed by 9 questions, and a score ≥ 30 signifies high emotional exhaustion; depersonalization was assessed by 5 questions, and a score ≥ 12 signifies high depersonalization; as for personal accomplishment, the assessment was made by 8 questions, and a score ≤ 33 signifies low personal accomplishment. Achieving one dimension means low burnout, achieving two dimensions means moderate burnout, and achieving all three dimensions means high burnout [9]. We have not found any source indicating the adaptation or validation of this questionnaire in the country.

Data analysis was performed using STATA 16 software. Qualitative variables were presented as frequencies and proportions. Quantitative variables were presented as medians and standard deviations. Univariate regression was performed to explore the relationship between burnout and the independent variables. Factors associated with this pathology were investigated using binary logistic multivariate regression. Variables associated with it in the univariate analysis, with a significance threshold of 20%, were included in the multivariate regression model. For all statistical tests, a significance threshold of 5% was used.

3. Ethical Considerations

We received authorization from the Head of the Basic Education District to conduct the study. Furthermore, participation in the study was contingent upon the workers' consent to participate.

4. Results

4.1. Socio-Professional Characteristics of Workers

A total of 229 agents were included in the study. They were mostly women, *i.e.*, 148 workers (64.63%); the sex ratio was 0.55. The average age was 44.99 ± 7.03 years, with extremes of 27 and 59 years. Workers aged 41 to 50 years were the most represented, with 126 agents (55.02%). Regarding the workstation, 207 (90.39%) were in the classrooms. As for the working hours, 212 (92.58%) carried out their activity on average 8 hours per day. The average number of students per class was 88.79 ± 43.48 , with extremes of 14 and 187 students per class. They completed an average of 8.49 ± 3.31 assignments per week, with extremes of 2 and 20 assignments per week. The socio-professional characteristics of the participants are presented in **Table 1**.

4.2. Prevalence of Burnout

A total of 124 workers were in a state of burnout, representing a prevalence of 54.15%. High burnout was observed in 8 workers (3.49%). A high emotional exhaustion score was noted in 63 workers (27.51%), a high depersonalization score was observed in 49 workers (21.40%), and a low level of personal accomplishment

was noted in 105 workers (45.85%). The levels of burnout observed in the study are presented in **Table 2**.

Table 1. Socio-professional characteristics of workers.

| | Number | Percentage |
|---|--------|------------|
| Age (years) | | |
| ≤30 | 04 | 1.75 |
| [31 - 40] | 49 | 21.40 |
| [41 - 50] | 126 | 55.02 |
| >50 | 50 | 21.83 |
| Gender | | |
| Male | 81 | 35.37 |
| Female | 148 | 64.63 |
| Marital status | | |
| Single | 25 | 10.92 |
| Cohabitation | 13 | 5.68 |
| Married | 179 | 78.17 |
| Widow (er) | 08 | 3.49 |
| Divorced | 04 | 1.75 |
| Workstation | | |
| Desk | 22 | 9.61 |
| Class | 207 | 90.39 |
| Work duration/day | | |
| ≤8 hours | 212 | 92.58 |
| >8 hours | 17 | 7.42 |
| Seniority in the workstation (years) | | |
| <10 | 13 | 5.68 |
| ≥10 | 216 | 94.32 |
| Number of pupils/class n = 207 | | |
| ≤75 | 62 | 29.95 |
| >75 | 145 | 70.05 |
| Homework/week n = 207 | | |
| ≤10 | 71 | 34.29 |
| >10 | 136 | 65.70 |

Table 2. Levels of burnout among workers.

| | Number | Percentage |
|------------------------------------|--------|------------|
| Burnout | | |
| Low | | |
| Yes | 81 | 35.37 |
| No | 148 | 64.63 |
| Moderate | | |
| Yes | 35 | 15.28 |
| No | 194 | 84.72 |
| High | | |
| Yes | 08 | 3.49 |
| No | 221 | 96.51 |
| High emotional exhaustion | | |
| Yes | 63 | 27.51 |
| No | 166 | 72.49 |
| High depersonalization | | |
| Yes | 49 | 21.40 |
| No | 180 | 78.60 |
| Low personal accomplishment | | |
| Yes | 105 | 45.85 |
| No | 124 | 54.15 |

4.3. Factors Associated with Burnout

4.3.1. Univariate Analysis

In univariate analysis, age was associated with burnout ($p = 0.04$). Regarding burnout dimensions, class size was associated with emotional exhaustion and depersonalization ($p = 0.01$); the number of homework assignments per week, the number of hours worked per day, and a history of high blood pressure were associated with low personal accomplishment. The results of the univariate analysis are presented in **Table 3**.

4.3.2. Factors Associated with Burnout

In the multivariate analysis, no factors were associated with burnout. The results of the multivariate analysis are presented in **Table 4**.

Table 3. Univariate analysis.

| | Burnout (%) | p | EE (%) | p | DP (%) | p | PA (%) | p |
|-------------------------------------|-------------|-------------|------------|-------------|------------|------|------------|--------------|
| Age | | | | | | | | |
| ≤30 | 01 (0.44) | 0.04 | 0 | 0.36 | 0 | 0.84 | 1 (0.44) | 0.47 |
| [31 - 40] | 24 (10.48) | | 14 (6.11) | | 9 (3.93) | | 156.55) | |
| [41 - 50] | 64 (27.95) | | 32 (13.97) | | 28 (12.23) | | 28 (12.23) | |
| >50 | 35 (15.28) | | 17 (7.42) | | 12 (5.24) | | 19 (8.30) | |
| Gender | | | | | | | | |
| Male | 46 (20.09) | 0.55 | 20 (8.73) | 0.12 | 22 (9.61) | 0.26 | 36 (15.72) | 0.19 |
| Female | 78 (34.06) | | 43 (18.78) | | 27 (11.79) | | 27 (11.79) | |
| Marital status | | | | | | | | |
| Single | 14 (6.11) | 0.89 | 11 (4.80) | 0.59 | 8 (3.49) | 0.17 | 5 (2.18) | 0.47 |
| Cohabitation | 06 (2.62) | | 20.87) | | 1 (0.44) | | 4 (1.75) | |
| Married | 96 (41.92) | | 46 (20.09) | | 36 (15.72) | | 52 (22.71) | |
| Widow (er) | 05 (2.28) | | 2 (0.87) | | 3 (1.31) | | 2 (0.87) | |
| Divorced | 03 (1.31) | | 2 (0.87) | | 1 (0.44) | | 0 | |
| Workstation | | | | | | | | |
| Desk | 10 (4.37) | 0.38 | 2 (0.87) | 0.10 | 6 (2.62) | 0.13 | 6 (6.62) | 0.07 |
| Class | 114 (49.78) | | 61 (26.64) | | 43 (18.78) | | 57 (24.89) | |
| Seniority in the workstation | | | | | | | | |
| <10 years | 06 (2.62) | 0.55 | 4 (1.75) | 0.96 | 3 (1.31) | 0.30 | 3 (1.31) | 0.18 |
| ≥10 years | 118 (51.53) | | 59 (25.76) | | 46 (20.09) | | 60 (26.20) | |
| Work duration/day | | | | | | | | |
| ≤8 hours | 115 (50.22) | 0.91 | 61 (26.63) | 0.22 | 44 (19.21) | 0.10 | 57 (24.89) | 0.02 |
| >8 hours | 09 (3.93) | | 2 (0.87) | | 5 (2.18) | | 6 (2.62) | |
| Homework/week | | | | | | | | |
| ≤10 | 33 (14.41) | 0.11 | 15 (6,55) | 0.13 | 17 (7.42) | 0.22 | 15 (6,55) | 0.005 |
| >10 | 91 (39.74) | | 48 (20.96) | | 32(13.97) | | 48 (20.96) | |
| Number of pupils/classe | | | | | | | | |
| ≤75 | 31 (13.54) | 0.44 | 8 (3.49) | 0.01 | 18 (7.86) | 0.01 | 22 (9.61) | 0.18 |
| >75 | 93 (40.61) | | 55 (24.02) | | 31 (13.54) | | 41 (17.90) | |

EE = Emotional exhaustion; DP = Depersonalization; PA = Personal accomplishment.

Table 4. Factors associated with burnout.

| | Burnout (%) | OR (IC95%) | p |
|------------------------------|-------------|--------------------|------|
| Age | | | |
| ≤30 | 0.44 | 1 | 0.05 |
| [31 - 40] | 10.48 | 2.87 (0.27; 29.64) | |
| [41 - 50] | 27.95 | 3.09 (0.31; 30.58) | |
| >50 | 15.28 | 6.99 (0.67; 72.86) | |
| Workstation | | | |
| Desk | 10 (4.37) | 1 | 0.19 |
| Class | 114 (49.78) | 1.47 (0.61; 3.56) | |
| Homework/week n = 207 | | | |
| ≤10 | 33 (14.41) | 1 | 0.11 |
| >10 | 91 (39.74) | 1.56 (0.89; 2.74) | |

OR = Odds ratio.

Table 5. Factors associated with dimensions of burnout.

| | EE | | | DP | | | PA | | |
|-------------------------------------|-------------|-------------------|--------------|-------------|-------------------|------|-------------|-------------------|-------------|
| | OR (IC 95%) | p | | OR (IC 95%) | p | | OR (IC 95%) | p | |
| Gender | | | | | | | | | |
| Male | 43 | 1 | 0.55 | 27 | 1 | 0.11 | 27 | 1 | 0.08 |
| Female | 20 | 0.80 (0.68; 2.03) | | 22 | 1.67 (0.87; 3.17) | | 36 | 0.62 (0.35; 1.07) | |
| Workstation | | | | | | | | | |
| Desk | 2 | 1 | 0.02 | 6 | 1 | 0.49 | 6 | 1 | 0.06 |
| Class | 61 | 4.17 (0.60; 3.56) | | 43 | 0.20 (0.25; 1.89) | | 57 | 2.44 (0.59; 6.49) | |
| Seniority in the workstation | | | | | | | | | |
| <10 years | 4 | 1 | 0.78 | 3 | 1 | 0.88 | 3 | 1 | 0.07 |
| ≥10 years | 59 | 0.84 (0.25; 2.85) | | 46 | 0.90 (0.23; 3.41) | | 60 | 0.35 (0.11; 1.19) | |
| Work duration/day | | | | | | | | | |
| ≤8 hours | 61 | 1 | 1.10 | 44 | 1 | 0.41 | 57 | 1 | 0.01 |
| >8 hours | 2 | 0.33 (0.07; 1.48) | | 5 | 1.59 (0.53; 4.75) | | 6 | 0.23 (0.06; 0.82) | |
| Homework/week | | | | | | | | | |
| ≤10 | 15 | 1 | 0.14 | 17 | 1 | 0.53 | 15 | 1 | 0.10 |
| >10 | 48 | 1.62 (0.84; 3.16) | | 32 | 0.81 (0.41; 1.57) | | 48 | 1.58 (0.89; 2.81) | |
| Number of pupils/classe | | | | | | | | | |
| ≤75 | 8 | 1 | 0.002 | 18 | 1 | 0.09 | 22 | 1 | 0.10 |
| >75 | 55 | 3.33 (0.82; 1.88) | | 31 | 0.56 (0.28; 1.09) | | 41 | 1.64 (0.89; 2.97) | |

EE = Emotional exhaustion; DP = Depersonalization; PA = Personal accomplishment; OR = Odds ratio.

4.3.3. Factors Associated with the Three Dimensions of Burnout

Multivariate analysis revealed risk factors associated with the three dimensions of burnout. Workstation and class size were associated with emotional exhaustion, $p = 0.02$ and 0.002 , respectively. Classroom teachers were approximately four times more exposed to emotional exhaustion than their office colleagues. In addition, a class size above 75 students increased the risk of emotional exhaustion among staff by approximately three times. On the other hand, working hours of more than 8 hours per day were a protective factor against low personal accomplishment, $p = 0.01$. The results of the multivariate analysis of factors associated with the dimensions of burnout are presented in **Table 5**.

5. Discussion

The study aimed to assess the extent of burnout among public primary education workers in Bobo-Dioulasso and to research the factors associated with it. It recorded 229 participants aged 27 to 59 years. The majority, 207 (90.39%), carried out their professional activity in classrooms, and 212 (92.58%) worked an average of 8 hours per day. Analysis of the Maslach Burnout Inventory score noted a total of 124 workers experiencing burnout, representing a prevalence of 54.15%, including 8 (3.49%) who presented high burnout. A high emotional exhaustion score was noted in 63 workers (27.51%), a high depersonalization score was observed in 49 workers (21.40%), and a low level of personal accomplishment was noted in 105 workers (45.85%). A similar prevalence of burnout to our results was found in the study by Amri *et al.* [10] in Morocco, which noted a 54% prevalence of burnout among primary school teachers. However, several authors have reported lower results in their studies [11]-[13]. In a study conducted by Nwabuko *et al.* [11] in southeastern Nigeria, symptoms of burnout were noted in 27% of participants. Ozoemena *et al.* [12] reported a 36% prevalence of this condition among school staff. Furthermore, Ptacek *et al.* [13] found that 41.05% of primary school staff in the Czech Republic were experiencing burnout. Several reasons could explain the difference between our results and those observed by these authors. Indeed, in the study by Nwabuko *et al.* in Nigeria [11] burnout was assessed based on symptoms observed in participants, while the Maslach Burnout Inventory questionnaire was used in our study. Furthermore, the high prevalence of burnout in our study could be explained by the poor working conditions and high workload in our classrooms, with 70.05% of classes having a student population greater than 75 per class and some classes containing 187 students. In addition, 65.70% organize more than 10 homework assignments per week, and some teachers record 20 evaluations each week on average. Marking students' work after completing these assignments and other exercises requires additional time that is not included in the normal working hours, and teachers do not receive compensation for this overtime. These workers must also prepare lessons, sometimes during hours outside of normal working hours at home, which can reduce the time available for the family unit and lead to fatigue and isolation for the teacher. In

addition, due to the high number of students per class, there is a shortage of desks and benches in some schools, which does not facilitate the delivery of lessons. Added to this is the overcrowding of classrooms with desks and benches because these classes were not originally built to accommodate such large numbers of students. It is therefore necessary to improve working conditions by building new classrooms, recruiting teaching staff, and reviewing the organization of work in these schools. Contrary to our results, other authors have reported higher prevalences of burnout among teaching staff. Indeed, in a study conducted by Elmassati *et al.* [3] in Morocco, the prevalence of this pathology among university teachers was 64%. This prevalence was 69.6% in primary and secondary education in Saudi Arabia in the study by Algassim *et al.* [14]. However, the study by Elmassati *et al.* [3] included higher education staff and that of Algassim also took into account secondary education staff, where the organization of work may differ from that of primary teachers. However, these high prevalences of burnout in the education sector show that actions should be taken to reduce its prevalence in view of its consequences for staff, but also the negative impact on academic performance. This involves analyzing the working conditions and environment in search of possible factors associated with the pathology in order to provide appropriate preventive measures. Age was a factor associated with burnout in univariate analysis. However, multivariate analysis did not note any factor associated with the pathology. However, the study reveals a link between emotional exhaustion and the workstation, with classroom teachers being more exposed compared to their colleagues in offices. In addition, the high number of students in the class increased the risk of emotional exhaustion among staff by approximately three times. Also, in our observations, working hours of more than 8 hours per day were a protective factor against low personal accomplishment. Several studies have noted factors associated with burnout in the education sector. Chennoufi *et al.* [15] noted in Tunisia that working conditions and difficulties in collaboration between teaching staff and students as well as parents were factors of burnout. Work routine and correction of students' work are all factors associated with this pathology [5]. For Negueu *et al.* [16] marital status, the imbalance between private and professional life, and rewards not proportional to the efforts made by workers are also causes of professional burnout [16]. Added to this is the poor working climate, which can expose agents to this pathology [17]. The prevention of this pathology should take into account the organization of work, the construction of new course infrastructures, as well as the reinforcement of the teaching staff. The training of this staff remains a necessity in order to understand the problem and the means of preventing it.

6. Conclusion

The study reveals a high prevalence of burnout among primary education staff in Bobo-Dioulasso. Several factors are associated with the dimensions of the pathology, including the workstation, the number of students, and the working hours.

An assessment of working conditions is necessary in order to propose measures to reduce burnout in the primary education sector in Bobo-Dioulasso. These measures should take into account aspects related to school infrastructure, work organization, and the training of teaching staff.

Conflicts of Interest

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

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