

# Burnout Profiles Among French Workers in Health Units for Inmates: Results of the EHCAU Study

**Stéphanie Boulier**

Centre Psychotherapique de Nancy

**Cédric Baumann**

Centre Hospitalier Universitaire de Nancy

**Hélène Rousseau**

Centre Hospitalier Universitaire de Nancy

**Pierre Horrach**

SMPR

**stephanie Bourion-Bedes** (✉ [steph\\_bedes@yahoo.fr](mailto:steph_bedes@yahoo.fr))

SMPR Metz

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## Research article

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## Abstract

**Background:** Professionals who work in penitentiary environments are at a risk of burnout due to a variety of factors. Recent literature has proposed a classification system involving five burnout profiles in a continuum between engagement and burnout. The objective of this study is to measure the prevalence of these profiles among professionals working in all care levels in French health units providing health services for inmates and to investigate their characteristics to propose appropriate prevention and management strategies.

**Methods:** This study involved a cross-sectional analysis of data from the Evaluation of Health CARE in Units for inmates (EHCAU) study, a multicentric cohort study of professionals working in health units for inmates in the East area of France. Occupational burnout was measured by the Maslach Burnout Inventory (MBI) at the emotional exhaustion, depersonalization and personal accomplishment levels. Job conditions and characteristics were assessed using the Karasek Job Content Questionnaire and the Effort-Reward Imbalance Questionnaire. Data on sociodemographic characteristics and self-reported health status were also collected. Differences between MBI profiles were identified using Fisher's exact test and Wilcoxon test.

**Results:** Of 350 professionals surveyed, 150 responded (42.9%). The most frequent profiles were ineffective (36.9%) and engagement (34.8%). Burnout (7.8%), overextended (15.6%), and disengaged (5.0%) profiles made up the remaining quarter. Significant differences were seen in the burnout profiles in regard to professional occupation ( $p=0.01$ ), irregular eating hours ( $p=0.04$ ), history of complaint procedures ( $p=0.05$ ), anxiety ( $p<0.0001$ ), depression ( $p<0.0001$ ) and the mental component of self-reported quality of life ( $p<0.0001$ ).

**Conclusions:** These results confirm that special attention should be given to professionals working in these challenging settings. The results have important implications for theory and research and for more customized approach interventions.

**Trial registration:** ID RCB : 2018-A03029-46

## Background

Burnout occurs as a result of prolonged or repeated exposure to work-related stressors and can be defined by emotional exhaustion (EE), feeling of cynicism (depersonalization (DP)), and a loss of meaning or purpose in work (personal accomplishment (PA)) [1–3]. Practitioners and researchers have exhibited an increased interest in studying burnout to better understand what it is and how it happens [4]. As burnout has been associated with increased risk of both personal and/or professional consequences such as depressive disorder, anxiety, suicide, substance use disorders, cardiovascular diseases [5–9], adverse effects on quality of work, departure from a profession and early retirement [10, 11], practitioners have become motivated to figure out ways to cope with and prevent burnout. The Maslach Burnout Inventory (MBI) was specifically designed to assess the three dimensions of the burnout experience, and it has been considered the standard tool for research in this field [12]. An innovative study explored the multiple distinct patterns of burnout along the burnout-engagement continuum, suggesting five different profiles based on MBI scale scores [12]. The “engaged” and “burnout” profiles are straightforward, as they represent people who score consistently across the three MBI scales. The other three profiles « overextended », « ineffective » and « disengaged » show inconsistencies across the three MBI scales. This nuanced approach to identify patterns offers new opportunities for understanding both the causes and consequences of burnout and might have implications for the best interventions to prevent or reduce it.

Workplace stress and burnout affect between 19 and 30% of employees in the general working population [13]. Several studies from around the world, including studies on physicians, nurses, physiotherapists, primary health care workers and other health professionals, have reported prevalence rates of burnout from 2.6 to 75% [14]. Previous studies support the idea that employment in occupations related to human services, such as health care, social work and educational systems, is associated with psychological distress [15]. Job stress, workload, role conflict, and organizational changes are factors that affect the onset of burnout. Some sociodemographic characteristics, such as age, gender, marital status, educational level, and years of professional experience, are also assumed to be associated with burnout [14]. In the specific case of correctional contexts, burnout symptomatology affects not only guards but also potentially the entire prison staff, including professionals in the fields of mental health and penitentiary care [16]. Psychological distress arises from typical adverse conditions related to workers' health, safety and welfare since some stressors in the correctional workplace are constant, with the presence of demanding and hazardous working conditions, risk of infectious diseases, irregular work shifts, reduced social and organizational support [16], high job demand and low decision latitude [17].

Since 1994, the delivery of health care in French prisons has been managed by the Ministry of Health. This means that one neighbouring hospital delivers health care services, with hospital departments inside every prison, in the same conditions as they do to free citizens [18]. Three levels of care are proposed for both somatic and psychiatric care. First-line health care in prisons is provided by a care unit inside the prison named Unité de Soins en Milieu Pénitentiaire (USMP). Second-line health care services requiring specialized material or part-time hospitalization are delivered in the neighbouring hospital for somatic care and the Services Médico-Psychologiques Régionaux (SMPR) units for psychiatric care. The third line of health care delivery includes the services requiring full-time hospitalization, and these services are delivered in an Inter-Regional Secure Hospitalized Unit (UHSI), whereas full-time psychiatric hospitalizations occur in a Specially Adapted Hospitalized Unit (UHSA) [19]. Although there are many reports of burnout, decreased morale, high levels of stress and staff leaving among professionals in health care units [20–24], no previously published study has focused on the different MBI profiles among workers in these three levels of care settings in French prisons.

The first objective of our study was to investigate the prevalence of the different MBI profiles, psychological morbidity, job satisfaction and job stress among workers in health units providing services for inmates in the eastern area of France. The second objective was to identify the factors contributing to these profiles to create healthy work environments and support health professionals.

## Methods

### Participants and design

This study involved a cross-sectional analysis of data from the Evaluation of Health CAre in Units for inmates (EHCAU) study, a multicentric cohort study of professionals working in health units providing services for inmates. Participants were recruited from health care service in the east area of France providing general medical care or psychiatric care in a wide range of care modalities ranging from full-time hospitalization to various forms of part-time and outpatient care inside the prison. The research was conducted between December 2019 and April 2020. Participation was voluntary. Informed consent was obtained from all individual participants included in the study. Consent forms were signed by each participant and kept at the main study site. The study protocol was approved by the local ethics committee, the Comité de protection des personnes du Sud-Ouest et Outre-Mer 4 (CPP), and ensured the confidentiality of the information collected (Comité National Informatique et Liberté 2213277v0).

### Data collection

Self-reported questionnaires were used to collect sociodemographic, clinical and professional data and to measure psychological distress, psychosocial job characteristics and occupational burnout.

### Sociodemographic, clinical and professional data

Participants completed a self-administered questionnaire that included sociodemographic measures such as age, gender, marital status, number of children living at home, living arrangements, occupational status, years in profession, years caring for inmates, work conditions and relationships with other services.

### Health-related quality of life

Health-related quality of life (HRQoL) was assessed with the Short-Form 12 questionnaire (SF-12), a generic 12-item instrument based on the earlier SF-36 [25]. The SF-12 covers eight domains: physical functioning, role-physical (that is, role limitations due to physical problems), bodily pain, general health, vitality, social functioning, role-emotional (that is, role limitations due to emotional problems) and mental health. The French version has yielded valid and reliable clinical assessments of self-reported health status [26]. A physical health component score (PCS) and a mental health component score (MCS) were calculated from all 12 items. All scores were transformed to a standardized score ranging from 0–100 points, with higher scores indicating better HRQoL.

### Anxiety and depression

Anxiety and depression were assessed using the French version of the Hospital Anxiety and Depression Scale (HADS), which is a 14-item self-report instrument assessing levels of anxiety and depression with 7 items for each subscale [27]. The French HADS questionnaire has yielded valid and reliable clinical assessments of depression and anxiety [28]. Each item is scored on a 4-point Likert scale, and for each subscale, the score is obtained by summing the respective 7 items. Each subscale score ranged from 0–21. Three severity ranges based on cut-off scores are used: 0–7 (noncases), 8–10 (mild severity), and 11–21 (moderate or severe severity) [29].

### Job conditions

Psychosocial job conditions were measured with the Karasek Job Content Questionnaire [30]. The French 26-item version of the questionnaire measures both the psychological workload (“demands”), the level of “control” and social support. The psychometric properties of the French version have been previously reported [31]. The job demands subscale is the sum of nine items inquiring about excessive work, conflicting demands, insufficient time to work, fast pace and hard work. The job control scale is the sum of two subscales: skill discretion measured by six items (learning new things, ability to develop new skills, job requiring skill, task variety, work not repetitive, job requiring creativity) and decision authority as measured by three items (freedom to make decisions, choice about how to perform work, having a lot of say in the job). The work-related social support scale is the sum of two subscales: support from coworkers (4 items) and support from supervisors (4 items). For each item, the participant could choose from 1 of 4 responses ranging from strongly disagree to strongly agree. The higher the score is for each scale or subscale, the higher the levels of demands, job control and social support are. Job strain was defined when the professional scored high on job demands and low on job control (defined according to the median score on the respective scales). Professionals who reported low levels of social support (median split) together with job strain (high job demands and low job control) were defined as having isostrain [32].

### Job demands and rewards

Job demands and rewards were assessed with the Effort-Reward Imbalance Questionnaire [33], for which the validity and reliability of the French version have been previously established [34]. The 23-item instrument consists of two scales measuring the extrinsic components “effort” and “reward” and one scale measuring the intrinsic component “overcommitment”. The scale of effort includes 6 items that explore subjective feelings connected with general professional demands that refer to general and physical effort, time pressure, obstacles and responsibility. A sum of scores based on ratings of these 6 items ranged on a 5-point Likert scale from 1 (disagree) to 5 (agree and I am very distressed). A higher total score is indicative of higher efforts from professionals. The scale of rewards comprises 11 items that assess different aspects of reward, such as financial and status-related rewards, esteem rewards and gratification of job security. Participants rated each item using a 5-point Likert scale, and a sum of the ratings of these 11 items was computed. The lower the total score, the fewer rewards received by the professional. Overcommitment is measured using the sum of six items with a scale that ranges from 1 (strongly disagree) to 4 (strongly agree). The effort-reward ratio is calculated, and an imbalance between effort and reward is present when the ratio is different from one. A ratio > 1 indicates high effort but low reward, while a ratio < 1 indicates high reward but low effort [35].

### Burnout

Burnout was assessed with the MBI scale, whose validity and reliability have been previously established [36]. The MBI self-report questionnaire includes 22 items assessing 3 dimensions that explore EE (the feelings of being emotionally overrun and exhausted by one's work) with 9 items, DP (the tendency to view others as objects rather than as persons with feelings) with 5 items and lack of PA (the degree to which a person perceives doing well on worthwhile tasks) with 8 items. Responses were made on a 7-point scale (0 meaning never, 6 meaning every day). The three dimensions were measured for each respondent. A higher score for EE and DP and a lower score for PA indicated a higher level of burnout. The profile characterized by favourable scores in all three dimensions is called "engaged". Three intermediate profiles were defined: the "disengaged" profile (high DP score), the "overextended" profile (high EE score) and the "ineffective" profile (high inefficacy score) [12].

## **Statistical analysis**

### **Descriptive and comparative analyses**

Continuous variables are described by the mean or the median, as appropriate, and categorical variables are described by percentages. The qualitative data were compared using Pearson's chi-square test or Fisher's exact test, whereas the quantitative variables were compared using Student's *t*-test or Wilcoxon test.

## **Results**

### **Participant demographics and self-perceived health status scores**

Of the 26 health care units contacted, 20 agreed to participate in the study. In total, 150 professionals of the 350 surveyed from these units returned a completed questionnaire from, yielding a response rate of 42.9%. The sociodemographic and self-perceived health status of the professionals are presented in Table 1 for the entire sample and separately based on the care-level type. Most professionals were female (74%), with a mean age of 42.9 years old (SD = 11.2). More than three-quarters were married or in a union (76.7%). Independent of relationship status, 78.7% of professionals reported having children, and just over half (53.4%) had at least one child living with them.

Table 1  
Characteristics of the participants

	Full Sample		Care Level-1		Care Level-2		Care Level-3		
	N = 150		N = 78		N = 29		N = 43		
	N	%/mean (SD)	N	%/mean (SD)	N	%/mean (SD)	N	%/mean (SD)	<i>p value</i>
<b>Characteristic</b>									
<b>Age</b>	148	42.9 (11.2)	78	43.5 (11)	29	40 (12.5)	41	43.9 (10.4)	0.26
<b>Gender</b>									0.51
Male	38	25.5	21	26.9	5	17.2	12	28.6	
Female	111	74.5	57	73.1	24	82.8	30	71.4	
<b>Marital status</b>									0.10
Never married	21	14	10	12.8	8	27.6	3	7	
Married/live with a partner	115	76.7	58	74.4	20	69	37	86	
Separated/divorced/widowed	14	9.3	10	12.8	1	3.4	3	7	
<b>Living arrangements</b>									0.34
Alone	15	10.1	8	10.3	5	17.2	2	4.9	
Alone with children	13	8.8	8	10.3	4	13.8	1	2.4	
Alone with spouse	51	34.5	28	35.9	8	27.6	15	36.6	
With spouse and children	66	44.6	32	41	11	37.9	23	56.1	
With friends	3	2	2	2.6	1	3.4	0	0	
<b>Has children</b>									0.31
Yes	118	78.7	62	79.5	20	69	36	83.7	
No	32	21.3	16	20.5	9	31	7	16.3	
<b>Self-reported health status</b>									
SF-12 physical score	144	69.5 (10.6)	74	69.8 (9.7)	29	71.7 (9.7)	41	67.3 (12.5)	0.17
SF-12 mental score	144	59.5 (14.8)	74	59.0 (14.5)	29	57.1 (16.4)	41	62.3 (14.0)	0.32
<b>HADS</b>									
Anxiety subscale score	150	6.1 (3.5)	78	6.6 (3.6)	29	5.8 (3.6)	43	5.5 (3.0)	0.18
Depression subscale score	149	3.1 (2.9)	77	3.5 (2.9)	29	2.2 (2.7)	43	3.1 (2.8)	0.06
Abbreviation:									

SD, standard deviation

The mean SF-12 scores were 69.5 (SD = 10.6) and 59.5 (SD = 14.8) for the PCS and MCS domains, respectively. The mean HADS score for the anxiety subscale was 6.1 (SD = 3.5), and the mean HADS score for the depression subscale was 3.1 (SD = 2.9). The results did not reveal significant differences according to the different care-level types for any of these characteristics.

## Professional and practice characteristics at the prison workplace

Table 2 shows the professional and practice characteristics of the sample. Most of the respondents were nurses (53.3%), followed by junior or senior physicians (19.3%) and psychologists (14%). Most of the respondents had regular contact with departments of the neighbouring hospital (68.2%). Nearly three-quarters (70%) reported that they had worked over 10 years in the health care system, and one-third of the overall sample (32%) worked in the same workplace over 10 years. Nineteen professionals (12.7%) were early-career professionals (in practice < 4 years). Nearly half of the participants (46%) never had irregular eating hours, whereas 10% and 6% of them responded often and always, respectively. Most of the surveyed professionals (71.8%) never reported night work. Significant differences in occupational status, years in practice, years in practice at the current workplace, regular contact with departments of neighbouring hospitals, night work and irregular eating hours were found among the surveyed participants according to the 3 care-level settings. The proportion of professionals having irregular eating hours and night work was higher for the full-time hospitalization care level. The proportion of early-career professionals working in a prison was higher for the part-time hospitalization than for the other two levels of care. In terms of exposure to violence, 52.7% and 65.3% reported that they were sometimes exposed to verbal and physical violence, respectively. One-third of the sample (36.7%) reported often being exposed to verbal violence. Seventeen professionals (11.4%) had a history of complaint procedures for aggression in the current workplace. The proportion of professionals exposed to verbal or physical violence was higher in the first and third care levels.

Table 2  
Professional and Practice Characteristics at the Workplace

Characteristic	Full Sample		Care Level-1		Care Level-2		Care Level-3		<i>p value</i>
	N	%/mean (SD)	N	%/mean (SD)	N	%/mean (SD)	N	%/mean (SD)	
	N = 150		N = 78		N = 29		N = 43		
<b>Occupational status</b>									0.004
Junior/Senior Doctor	29	19.3	15	19.2	7	24.1	7	16.3	
Nurse/Nursing auxiliary	80	53.3	40	51.3	10	34.5	30	69.8	
Health nurse manager	6	4	3	3.8	2	6.9	1	2.3	
Physiotherapist/Ergotherapist	3	2	2	2.6	0	0	1	2.3	
Hospital service agent	2	1.3	0	0	0	0	2	4.7	
Psychologist	21	14	15	19.2	6	20.7	0	0	
Medical secretary	9	6	3	3.8	4	13.8	2	4.7	
<b>Years in practice in the job</b>									0.008
< 4 years	19	12.7	5	6.4	10	34.5	4	9.3	
≥ 4 years and < 10 years	26	17.3	16	20.5	4	13.8	6	14	
≥ 10 years	105	70	57	73.1	15	51.7	33	76.7	
<b>Years in practice in the current workplace</b>									0.01
< 4 years	56	37.3	26	33.3	17	58.6	13	30.2	
≥ 4 years and < 10 years	46	30.7	25	32.1	2	6.9	19	44.2	
≥ 10 years	48	32	27	34.6	10	34.5	11	25.6	
<b>Hours worked per week</b>	148	37.2 (8)	77	36.5 (8.2)	29	38.1 (6.2)	42	37.9 (8.8)	0.57
<b>Irregular eating hours</b>									0.002
Never	69	46	40	51.3	20	69.0	9	20.9	
Seldom	57	38	29	37.2	6	20.7	22	51.2	
Often	15	10	5	6.4	2	6.9	8	18.6	
Always	9	6	4	5.1	1	3.4	4	9.3	
<b>Night work</b>									< 0.0001
Never	107	71.8	70	90.9	23	79.3	14	32.6	
Seldom	13	8.7	3	3.9	4	13.8	6	14	
Often	27	18.1	3	3.9	2	6.9	22	51.2	
Always	2	1.3	1	1.3	0	0	1	2.3	
<b>Exposure to verbal violence</b>									< 0.0001
Never	10	6.7	2	2.6	7	24.1	1	2.3	
Seldom	79	52.7	49	62.8	16	55.2	14	32.6	
Often	55	36.7	23	29.5	6	20.7	26	60.5	
Always	6	4	4	5.1	0	0	2	4.7	
<b>Exposure to physical violence</b>									0.09
Never	22	14.7	13	16.7	7	24.1	2	4.7	
Seldom	98	65.3	52	66.7	18	62.1	28	65.1	
Often	29	19.3	12	15.4	4	13.8	13	30.2	

Abbreviation: SD, standard deviation

	Full Sample		Care Level-1		Care Level-2		Care Level-3		
Always	1	0.7	1	1.3	0	0	0	0	
<b>History of complaint procedures for aggression at workplace (yes)</b>	17	11.4	11	14.3	3	10.3	3	7	0.52
<b>Training stage in prison during initial formation (yes)</b>	48	32.2	23	29.9	10	34.5	15	34.9	0.82
<b>Regular contact with departments of local hospital (yes)</b>	101	68.2	55	70.5	24	85.7	22	52.4	0.01
Abbreviation: SD, standard deviation									

## Job conditions, job satisfaction and MBI profiles

The results of the Karasek, Effort-Reward Imbalance and MBI questionnaires are depicted in Table 3. Higher mean scores for psychological and physical job demands and lower mean scores for decision latitude (control) and social support indicated the participants' high levels of job stress. Job demands, job control and social support differed between care levels, with a higher mean score for job demands in the part-time hospitalization care level and lower mean scores for social support and job control in the full-time hospitalization care level. Twenty-six participants (18.6%) reported job strain with no significant difference between levels of care. Three-quarters of the participants (75.3%) reported satisfactory links with prison services, and two-thirds (61.8%) were satisfied with the links with the integration and probation service. The proportion of workers who would keep work in the setting was lower in the part-time hospitalization care level than in the other levels ( $p = 0.004$ ).

Table 3  
Job conditions and satisfaction at the workplace

	Full Sample		Care Level-1		Care Level-2		Care Level-3		
	N = 150		N = 78		N = 29		N = 43		
Characteristic	N	%/mean (SD)	N	%/mean (SD)	N	%/mean (SD)	N	%/mean (SD)	<i>p value</i>
Karasek Scores									
<b>Job demands</b>	144	21.3 (4.2)	73	21.8 (4.2)	29	22.2 (4.5)	42	19.8 (3.7)	0.02
<b>Job control</b>	144	72.8 (10.6)	76	75.5 (9.7)	29	74.9 (8.4)	39	65.9 (10.8)	< 0.0001
<b>Social support</b>	138	24.8 (4)	70	25 (3.7)	28	26.2 (4.4)	40	23.6 (4.2)	0.03
Job-strain*	26	18.6	11	15.3	5	17.2	10	25.6	0.40
Iso-strain**	12	9.0	5	7.5	3	10.7	4	10.5	0.78
Effort-reward Imbalance									
Effort-reward Imbalance ratio	143	0.4 (0.2)	75	0.5 (0.2)	28	0.5 (0.1)	40	0.4 (0.2)	0.09
Overcommitment	150	12.9 (3.8)	78	13.3(4)	29	12.9 (3.7)	43	12.2 (3.6)	0.43
Burnout Scores*									
<b>Emotional exhaustion</b>	145	13.1 (10)	77	14 (10.6)	28	12.7 (10)	40	11.5 (8.7)	0.55
<b>Depersonalization</b>	148	6.7 (5.4)	78	7.6 (5.7)	29	5.3 (5.9)	41	5.9 (4.2)	0.07
<b>Personal accomplishment</b>	142	34.7 (8)	74	36.4 (7.1)	28	35.5 (6.6)	40	31.3 (9.5)	0.04
Abbreviation: SD, standard deviation									
* Job strain: work situation when the psychological demand is greater than the median and the decision latitude less than the median									
** Iso strain: work situation combining a job strain situation with below median social support									

According to the Maslach criteria, which consider burnout syndrome to be present when all three dimensions are severely abnormal, the prevalence of the burnout profile was 7.8%. One-third of the sample (36.9%) presented an ineffective profile; 15.6% and 5% had overextended and disengaged profiles, respectively. Although the proportion of ineffective MBI profiles was higher in the part-time and full-time hospitalization levels and the proportion of disengaged and burnout profiles was higher in the first care level, no significant difference in the overall MBI profiles was observed by practice setting. The repartition of the five profiles among the three levels of care are depicted in Fig. 1. PA scores were significantly different between levels of care ( $p = 0.04$ ).

Based on the results presented in Table 4, some features could be described for each MBI profile. Significant differences in the five MBI profiles are shown in regard to occupational status, history of complaint procedures at current workplace, irregular eating hours, anxiety and depression; the mental health

component in regard to quality of life. Other tendencies based on Table 4 are described in Table 5. Thus, in regard to the burnout profile, professionals were younger, more often childless and more often at the workplace for less than 10 years. Physicians, those having irregular eating hours due to their work and those with a history of complaint procedures for aggression at the workplace seemed more concerned. These individuals were more concerned with job strain situations and were more frequently anxious and depressive. These health professionals presented lower mean scores on the SF-12 mental component. Professionals reporting unsatisfactory links with prison services were more represented.

Table 4  
Prevalence and characteristics of the five MBI profiles of the sample

	Full Sample		Engaged		Ineffective		Overextended		Disengaged		Burnout		
	N = 141		N = 49		N = 52		N = 22		N = 7		N = 11		
			(34.8%)		(36.9%)		(15.6%)		(5.0%)		(7.8%)		
	N	%/mean (SD)	N	%/mean (SD)	N	%/mean (SD)	N	%/mean (SD)	N	%/mean (SD)	N	%/mean (SD)	<i>P</i> <i>value</i>
<b>Gender</b>													NS
Male	37	26.4	13	26.5	10	19.6	6	27.3	3	42.9	5	45.5	
Female	103	73.6	36	73.5	41	80.4	16	72.7	4	57.1	6	54.5	
<b>Age</b>	139	42.8 (11.2)	49	43.1 (11.7)	50	43.1 (11.3)	22	44.2 (10.8)	7	43.4 (9.4)	11	37.5 (9.7)	NS
<b>Marital status</b>													
Never married	19	13.5	4	8.2	10	19.2	4	18.2	0	0.0	1	9.1	
Married/live with a partner	108	76.6	41	83.7	37	71.2	14	63.6	7	100.0	9	81.8	
Separated/divorced/widowed	14	9.9	4	8.2	5	9.6	4	18.2	0	0.0	1	9.1	
<b>Occupational status</b>													0.01
Junior/senior doctor	27	19.1	12	24.5	5	9.6	4	18.2	2	28.6	4	36.4	
Nurse/nursing auxiliary	77	54.6	26	53.1	34	65.4	9	40.9	3	42.9	5	45.5	
Physiotherapist/ergotherapist	3	2.1	2	4.1	0	0.0	1	4.5	0	0.0	0	0.0	
Medical secretaries	8	5.7	0	0.0	8	15.4	0	0.0	0	0.0	0	0.0	
Health nurse manager	6	4.3	2	4.1	2	3.8	1	4.5	1	14.3	0	0.0	
Psychologist	20	14.2	7	14.3	3	5.8	7	31.8	1	14.3	2	18.2	
<b>Years in practice in the job</b>													NS
< 4 years	17	12.1	5	10.2	7	13.5	1	4.5	1	14.3	3	27.3	
>= 4 years and < 10 years	26	18.4	9	18.4	7	13.5	5	22.7	1	14.3	4	36.4	
>= 10 years	98	69.5	35	71.4	38	73.1	16	72.7	5	71.4	4	36.4	
<b>Exposure to physical violence</b>													NS
Never	19	13.5	6	12.2	8	15.4	3	13.6	1	14.3	1	9.1	
Seldom/often/always	122	86.5	43	87.8	44	84.6	19	86.4	6	85.7	10	90.9	
<b>Exposure to verbal violence</b>													NS
Never	10	7.1	2	4.1	7	13.5	1	4.5	0	0.0	0	0.0	
Seldom/often/always	131	92.9	47	95.9	45	86.5	21	95.5	7	100.0	11	100.0	
Abbreviation: SD. standard deviation													

Table 4  
(continuation). Prevalence and characteristics of the five MBI profiles of the sample

	Full Sample		Engaged		Ineffective		Overextended		Disengaged		Burnout		
	N = 141		N = 49		N = 52		N = 22		N = 7		N = 11		
			(34.8%)		(36.9%)		(15.6%)		(5.0%)		(7.8%)		
	N	%/mean	N	%/mean	N	%/mean	N	%/mean	N	%/mean	N	%/mean	P value
		(SD)		(SD)		(SD)		(SD)		(SD)		(SD)	
<b>History of complaint procedure for aggression at workplace</b>													0.02
No	123	87.9	43	87.8	47	92.2	21	95.5	6	85.7	6	54.5	
Yes	17	12.1	6	12.2	4	7.8	1	4.5	1	14.3	5	45.5	
<b>Irregular eating hours</b>													0.05
Never	66	46.8	29	59.2	26	50.0	6	27.3	4	57.1	1	9.1	
Seldom	51	36.2	16	32.7	18	34.6	9	40.9	2	28.6	6	54.5	
Often	15	10.6	3	6.1	4	7.7	4	18.2	1	14.3	3	27.3	
Always	9	6.4	1	2.0	4	7.7	3	13.6	0	0.0	1	9.1	
<b>Link with prison staff</b>													NS
Highly satisfactory/satisfactory	105	75.5	37	75.5	43	84.3	14	66.7	5	71.4	6	54.5	
Little or Not at All Satisfactory	34	24.5	12	24.5	8	15.7	7	33.3	2	28.6	5	45.5	
<b>HADS- Anxiety subscale</b>													< 0.0001
No	123	87.2	49	100.0	47	90.4	16	72.7	7	100.0	4	36.4	
Yes (score >= 11)	18	12.8	0	0.0	5	9.6	6	27.3	0	0.0	7	63.6	
<b>HADS-Depression subscale</b>													0.03
No	137	97.9	49	100.0	51	100.0	20	90.9	7	100.0	10	90.9	
Yes (score >= 11)	3	2.1	0	0.0	0	0.0	2	9.1	0	0.0	1	9.1	
<b>Karasek</b>													
Job Strain	24	17.9	5	11.1	8	16.0	4	19.0	1	14.3	6	54.5	NS
Iso Strain	11	8.6	1	2.4	4	8.3	3	15.0	1	14.3	2	18.2	NS
<b>Effort-reward imbalance</b>													
Effort-reward imbalance ratio >1	2	1.5	0	0.0	0	0.0	2	9.1	0	0.0	0	0.0	0.06
<b>Self-reported health status</b>													
SF-12 physical score	136	69.8 (10.2)	47	71.9 (8.2)	50	70.5(10.0)	22	65.6 (11.4)	7	68.3 (13.8)	10	66.2 (12.1)	NS
SF-12 mental score	136	59.3 (15.1)	47	67.6 (7.4)	50	62.1 (12.4)	22	42.2 (13.8)	7	65.6 (12.0)	10	38.8 (12.5)	< 0.0001
Abbreviations: SD, standard deviation; NS non-significant													

Table 5  
Overview of specific characteristics and tendencies of MBI profiles

	Engaged	Ineffective	Overextended	Disengaged	Burnout
Gender	female	female	female	50/50	50/50
Age	> 40	> 40	> 40	> 40	< 40
Marital status NS*	/	/	/	/	/
Occupational status	Nurse	Nurse	Psychologist	Health manager and Doctor	Doctor
Years in practice in the job	>=10	>=10	>=10	>=10	< 10
Exposure to physical violence NS*					/
Exposure to verbal violence NS*					/
History of complaint procedure for aggression at workplace	No	No	No	No	50/50
Irregular eating hours	Never/ seldom	Never/ seldom	Never/ seldom	Never/ seldom	Seldom/ often
Link with prison staff (satisfactory)	yes	yes	yes	yes	50/50
HADS- Anxiety subscale	No	No	No	No	Yes
HADS-Depression subscale	No	No	Yes	No	Yes
Karasek Job Strain	Low	Low	Low	Low	High
Karasek Iso Strain NS*	/	/	/	/	/
Effort-reward Imbalance > 1 NS*	No	No	Yes	No	No
Self-reported health status PS NS*	/	/	/	/	/
Self-reported health status MS	> 60	> 60	< 50	> 60	< 40
NS* non-specific					

## Discussion

This study is among only a few to investigate burnout in health care professionals working in units providing health services for inmates [37] and the first to characterize these workers according to MBI profiles. First, our results indicated that the most frequent profiles are ineffective and engagement, which comprised 71% of the sample. These findings are consistent with the profiles identified in a previous study among health care employees [12] but with a few differences, as the most prevalent MBI profile was ineffective rather than engagement in our sample. This ineffective profile reflects a psychological relationship with work that is not distressed but also not fully engaged, lacking the fulfilling qualities of engagement that are defined by “energy, involvement, and efficacy” [38]. The experience of being ineffective does not coincide with high exhaustion or high cynicism. Instead, it reflects a loss of confidence in one’s capabilities, perhaps as a result of work that feels tedious or an environment that offers little recognition for a job well done. It is a far more common experience among nurses or nursing auxiliaries in our sample. The ineffective profile clearly appears more negative than engagement but preferable to the distress inherent in the burnout, overextended, and disengaged conditions [12]. Our finding indicates a 7.8% prevalence of burnout, which is in line with previous studies when all three dimensions (EE, DP and PA) are severely abnormal in penitentiary settings [39] and consistent with the fact that the engaged profile is four times less common than the engaged profile among healthcare employees [38]. However, this result is well below the high burnout prevalence rates that have been previously reported among French health professionals, ranging from 28 to 73% [40–42]. Methodological differences could influence these reported burnout rates. There is real controversy in the literature regarding the tools to measure burnout and which dimensions of the MBI to include, with numerous studies using one [43–45], two [46, 47] or all three [7, 24] dimensions to classify burnout. With the ineffective profile, the overextended and disengaged profiles reflect transitional states towards burnout and thus represent cause for concern. Five percent of our participants met the classification for the disengaged profile, with high cynicism; this figure is below the proportion previously identified with this profile among health care providers [12]. Participants who identified as male were more likely to be classified with burnout and disengaged profiles than those who identified as female. Professionals who were concerned with a history of complaint procedures for aggression and who regularly experience verbal aggression were likely to experience a high level of cynicism. Professionals in units treating inmates are particularly exposed to intimidation, aggression and rebellion, facts known to lead to psychosocial risks [48]. One source of cynicism and therefore disengagement could be the transition from an idealistic world of a health care provider to the real world of threats and exposure to physical and verbal violence despite providing care. The 15.6% prevalence of the overextended profile is in line with the findings of Leiter et Maslach [12], and the prevalence of psychologists experiencing high levels of exhaustion in correctional settings is in line with the findings in previous work [49]. This result supports the needs for workload adjustments for professionals who are involved but very tired. Knowledge of these profiles can be useful when designing interventions focused on both people and job situations. At the organizational level, a sustainable workload and an increase in reward by providing more choice may be suggested for an overextended individual. An ineffective individual may benefit from more recognition and reward, and a disengaged individual will require a supportive work community and/or clear

value and meaningful work. At the individual level, previous studies among workers experiencing challenging situations called for an emphasis on increasing resilience, which can be developed [47, 50]. Resilience is considered the ability to adapt successfully in the face of stress, trauma, adversity, tragedy, or significant threat [51]. Resiliency could help professionals sustain the capacity to not be disrupted by stress or threats and stay engaged at work as previously described [52]. As work-related stress is a public health concern and might play a role in the development of mental health problems in health care professionals [23], the high prevalence of anxiety and depression symptoms among the individuals with overextended and burnout profiles supports that a number of steps should be taken at the individual level to promote wellness. Early detection and prevention are needed to help counteract the stressors inherent in the workplace and the associated negative impact on mental health to maintain a high level of mental well-being in this demanding workplace.

Although there was no significant difference in the MBI profiles in regard to the care-level type, our research tended to show that professionals from the first level of care are more concerned with burnout, while those from the second and third levels of care are more concerned with an ineffective profile. For the second and third care levels, the findings emphasize the important role of esteem, recognition, and appropriate feedback to build engagement. Improvements in work environments in the first level of care, including having respectful working relationships with other service providers, being attentive to colleagues and anticipating the impact of one's behaviour on others as well as clear targets, strategic leverage points and regular organizational assessments, could help to prevent burnout.

Several methodological limitations should be discussed. First, a small number of professionals were included in this study, which prevented us from using, for example, a multivariate polytomous logistic regression model. This could be a next step. Second, our findings might not be fully representative of professionals working in units for inmates and may not be generalizable to other groups, as professionals voluntarily decided to participate. Third, the data were collected using self-report questionnaires, which, although anonymous, may introduce bias specific to socially desirable responses. However, to our knowledge, this study is the first to assess the profiles among French professionals, and they are expected following the recommendations. This method of classification of participants according to MBI profiles is relatively recent in the MBI's long history, and it is suggested that use of this approach could be helpful for the earlier recognition of individuals who may be at risk of developing burnout. Moreover, this is the first study to pay attention to professionals working among the three different levels of care in detention (ambulatory and part-time and full-time hospitalization). Furthermore, our results bring attention to interesting findings in that initiatives for professionals should include improvement in guidance of younger workers in units for inmates. Developing resources to facilitate exchanges with partnerships and to build a better work environment is essential, as these actions could afford mental health benefits.

## Conclusions

Our findings suggest that both organizational and individual factors need to be addressed to reduce the high prevalence of disengaged, overextended and ineffective intermediate profiles of the engagement-burnout continuum. The findings emphasize the importance of a more customized approach to interventions, and future solutions may need to take into account the key underlying problems in the different groups of people. Our findings also support the need for reflection and discussion in the context of public politics to help these professionals who deserve to be better assisted. As burnout research in the correctional setting grows, future research in the form of longitudinal studies would be useful in investigating how profiles develop and change over time and how interventions can be used to impede the development of burnout and mitigate its potential negative consequences.

## Abbreviations

p>EHCAU, Evaluation of Health CAre in Units for inmates; HRQoL, Health-related quality of life; MBI, The Maslach Burnout Inventory; SF-12, Short-Form 12 questionnaire; HADS, Hospital Anxiety and Depression Scale.

## Declarations

### *Ethics approval and consent to participate*

Ethical approval for the study was obtained from the local ethics committee, the Comité de protection des personnes du Sud-Ouest et Outre-Mer 4 (CPP) and the Institutional Review Board (Comité National Informatique et Liberté- 2213277v0). Informed consent was obtained from all individual participants included in the study. Consent forms were signed and kept in the main study site file

### *Consent for publication*

Not applicable

### *Availability of data and materials*

Data will not be shared in order to protect the participants' anonymity.

### *Competing interests*

The authors declare that they have no competing interests.

### *Funding*

Not applicable

### ***Authors' contributions***

SB-B and SB designed the study protocol. SB and SB-B collected the data used in the current manuscript. HR performed the statistical analysis. SB participated in the discussion and writing of the paper. SB-B, CB and PH oversaw the drafting of the manuscript. All authors contributed by reading and critically revising the paper and agree to be accountable for all aspects of the work.

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## Figures

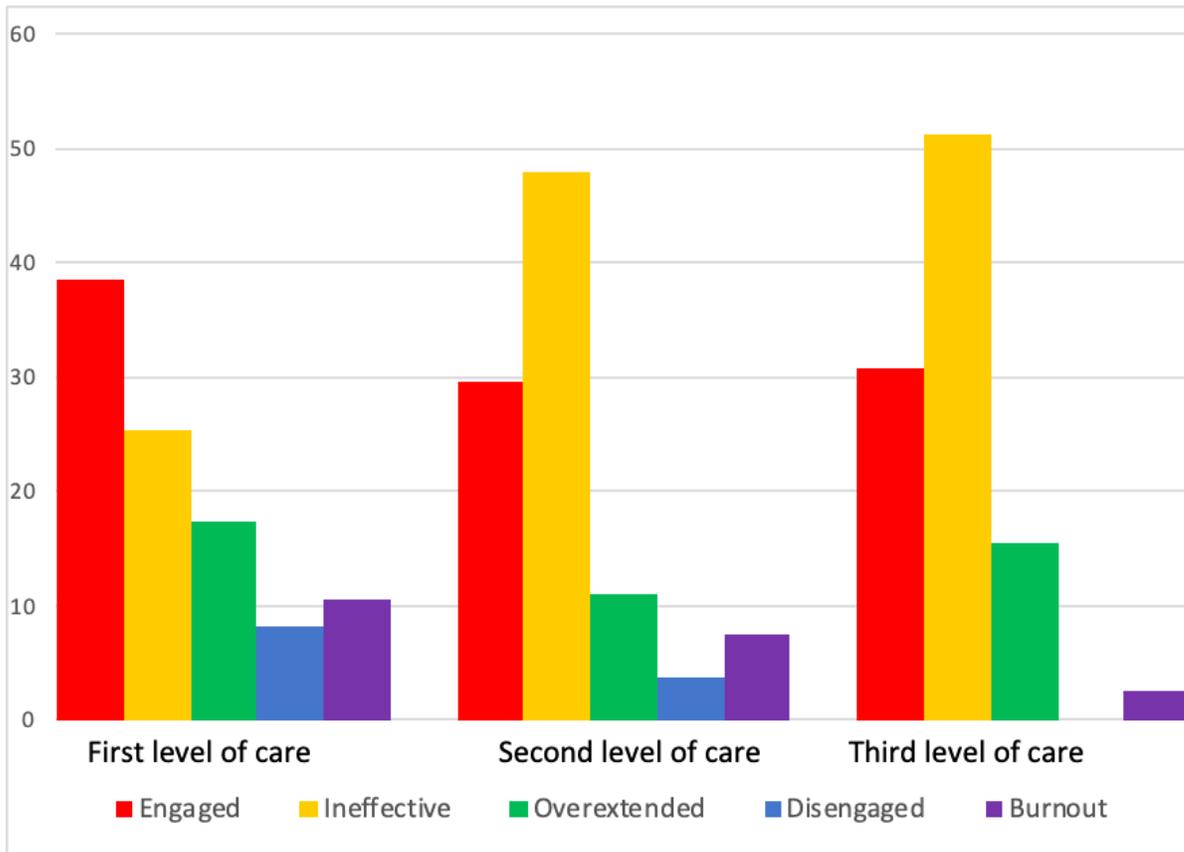


Figure 1

Distribution of MBI profiles among professionals according to the three levels of care