

Hospitalizations with post-traumatic stress disorder in France between 2013 and 2022: a nationwide retrospective study

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22 Abstract

23 INTRODUCTION: The lifetime prevalence of PTSD ranges from 6% to 20% and is often
24 associated with comorbid disorders. Despite the significant impact of PTSD, specific data on
25 healthcare utilization related to PTSD remain limited. This study aims to characterize PTSD-
26 related hospitalizations in France over the past decade.

27 METHOD: This nationwide longitudinal retrospective study analyzed PTSD-related
28 hospitalizations in France from 2013 to 2022 using the French national hospitals database.
29 Data included discharge records from general and psychiatric hospitals, detailing
30 demographics, admission/discharge dates, ICD-10 diagnoses, and hospitalization specifics.

31 RESULTS: Between 2013 and 2022, 69,108 patients underwent 125,349 hospitalizations with
32 a PTSD diagnosis (0.4% of all inpatient cases) in France. Psychiatric facilities accounted for
33 74,988 hospitalizations (1% of all psychiatric inpatient cases in France), while general hospitals
34 recorded 50,361 hospitalizations (0.02% of all non-psychiatric inpatient cases). The
35 percentage of inpatients diagnosed with PTSD increased from 0.68% to 2.22% in psychiatric
36 facilities and from 0.02% to 0.04% in general hospitals over the study period. Females in both
37 settings were younger and had longer stays than males in psychiatric facilities. Over time, there
38 was a decrease in median age and an increase in part-time hospitalizations in psychiatric
39 facilities. Mood disorders, stress-related disorders, and substance use disorders were
40 prevalent comorbidities in both settings.

41 CONCLUSION: This study highlights a rise in PTSD-related hospitalizations in France,
42 particularly in psychiatric facilities and after 2019, with high rates among women and an
43 increase in hospitalization of younger individuals. These findings highlight the necessity for
44 improved care strategies tailored to the increasing number of younger patients with PTSD.

45 Introduction

46 Approximately 70% of adults worldwide will experience a traumatic event, such as death,
47 threatened death, actual or threatened serious injury, or sexual violence. Among those
48 exposed to trauma, it has been estimated that 12% will subsequently develop post-traumatic
49 stress disorder (PTSD) [1-3]. PTSD is a psychiatric disorder characterized by persistent
50 intrusion symptoms, avoidance of trauma-related stimuli, negative alterations in mood and
51 cognition, and arousal symptoms [4]. With a lifetime prevalence of 13.0% to 20.4% for women
52 and of 6.2% to 8.2% for men, PTSD is not only common but also carries a heavy burden [5,6]
53 due to its invalidating symptoms and its frequent co-occurrence with both psychiatric and non-
54 psychiatric conditions, which contribute to increased healthcare utilization and premature
55 mortality [7,8].

56 Around 90% of individuals with PTSD have at least one co-occurring mental health condition
57 [9], such as major depression, substance use disorder, anxiety disorders, and suicidal behavior
58 [6]. Additionally, those with PTSD are twice as likely to have a non-psychiatric condition,
59 including chronic pain, inflammation, cardiometabolic disorders, cancer, and dementia,
60 compared to those without PTSD [7,10-15]. These comorbidities can arise concurrently with
61 PTSD due to shared causal factors or as a consequence of the disorder itself [11].
62 Consequently, individuals with PTSD exhibit more frequent and longer hospitalizations in
63 general hospitals [16-18].

64 Despite the high prevalence and significant impact of PTSD, there is limited literature
65 specifically addressing related hospitalizations [19-21]. This gap is problematic because it
66 means that the healthcare burden, particularly the patterns and trends of hospitalizations, is
67 not well understood. The only nationwide existing study, conducted between 2002 and 2011 in
68 the United States, highlights a rising trend in PTSD-related hospitalizations, particularly among
69 women aged 20 to 44 [19]. Most PTSD-related hospitalizations in this study were associated
70 with a primary diagnosis of a mental disorder, followed by circulatory system diseases in men

71 and alcohol or drug induced diseases in women [19]. Additionally, this study, along with other
72 limited literature, suggests that individuals with PTSD are more frequently female and younger
73 adults [16,19,22]. Importantly, the recent COVID-19 pandemic is likely to impact these previous
74 findings, as converging data suggest that PTSD rates have increased due to pandemic-related
75 stressors [23-26]. Understanding how the pandemic may have influenced trends in
76 hospitalizations is crucial, as it could reveal new patterns and demands on the healthcare
77 system that were not apparent in earlier studies.

78 To provide updated data, we analyzed data from the French national hospitals database,
79 offering a comprehensive overview of PTSD-related hospitalizations from 2013 to 2022. Our
80 research aims to estimate the number of hospitalizations with PTSD, determine inpatient
81 prevalence in general and psychiatric facilities, and explore socio-demographic characteristics,
82 hospital features, and comorbidities associated with PTSD. We hypothesize that the number
83 of hospitalizations with a primary or secondary diagnosis of PTSD will increase over time
84 between 2013 and 2022, with a notable rise after 2019, due to the impact of the COVID-19
85 pandemic. We expect hospitalization rates to be higher in psychiatric facilities compared to
86 general hospitals. Additionally, we hypothesize that females and younger adults will be more
87 frequently hospitalized, and that PTSD will co-occur with a high number of psychiatric
88 comorbidities, such as depression, alcohol use disorder, and anxiety disorders.

89 Method

90 Study design

91 We conducted a nationwide longitudinal retrospective study, including all discharges between
92 2013 and 2022 from general and psychiatric hospitals in France with a PTSD diagnosis.

93 *Data collection*

94 We collected data from the French national hospitals database (PMSI, for *Programme de*
95 *médicalisation des systèmes d'information*, in French). This database includes standardized
96 discharge reports for all inpatient stays in private and public hospitals in France. The data
97 encompasses sociodemographic information (such as sex and age), dates of admission and
98 discharge, type of facility, and primary and secondary diagnoses (i.e., main cause for
99 admission and comorbidities). This French national hospitals database records the primary
100 diagnosis (i.e. the main reason for admission) and the secondary diagnoses (i.e. comorbidities)
101 reported by physicians during hospitalization according to the French version of the
102 International Statistical Classification of Diseases and Related Health Problems, 10th Revision
103 (ICD-10) [27]. PTSD is identified by the ICD-10 code F43.1.

104 *Population*

105 All hospitalizations with a primary or secondary diagnosis of PTSD between 2013 and 2022
106 were included in the analysis. No exclusion criteria were applied. Patients treated in outpatient
107 settings are not included in this database.

108 *Ethical approval*

109 Ethical approval was not required for this study as we accessed an anonymous administrative
110 database. Additionally, the national French Public Health Agency (*Santé Publique France*)
111 permits full access to national hospital discharge databases, including the PMSI, which is
112 commonly utilized for research. The authors affirm that all procedures conducted in this study

113 adhere to the ethical standards set by the pertinent national and institutional committees on
114 human experimentation, as well as the principles outlined in the Helsinki Declaration of 1975,
115 as revised in 2008.

116 *Variables*

117 We utilized multiple variables from the PMSI database, including age and sex, admission and
118 discharge dates, primary and secondary diagnoses, facility type (general or psychiatric
119 hospital, private or public facility), and legal status of psychiatric hospitalization (voluntary or
120 compulsory care). Certain variables, such as part-time or full-time hospitalization, voluntary or
121 compulsory care and whether the hospitalization occurred in a public or private hospital, were
122 only available for psychiatric hospitalizations in this database. Hospital stays were divided into
123 full-time and part-time hospitalizations, with full-time hospitalizations defined as those
124 containing at least one period of full-time hospitalization during hospital stay. Hospital stays
125 were considered compulsory if they contained at least one episode of care without consent,
126 which in France is only permitted in psychiatric hospitals in accordance with national legal
127 regulations. Comorbidities were defined by all ICD-10 codes other than F43.1, regardless of
128 whether they were used as the primary or secondary diagnostic.

129 *Statistical analyses*

130 We described all quantitative variables with mean and standard deviation or median and 1st
131 and 3rd quartiles (Q1-Q3). Qualitative variables were described using absolute numbers and
132 percentages. Initially, for both types of hospitalization, we counted the number of patients and
133 hospitalizations and calculated the mean number of hospitalizations per patient. We then
134 evaluated age, sex, hospital stay length, and the number of yearly hospitalizations. For
135 hospitalizations from psychiatric hospitals, we also described part or full-time hospitalization,
136 type of facility (private or public), and compulsory or voluntary care. For hospitalizations in
137 general hospitals, we specifically examined the original input of care. Additionally, we
138 compared age, hospital stay length, and hospital-type specific factors between sexes and
139 between 2013 and 2022 using Wilcoxon and Chi-2 tests. P-values under 0.05 were considered

140 significant. Finally, we examined the most frequent comorbidities. All data management,
141 statistical analyses, tables, and figures were realized using the SAS 8.3 and R 4.1.2.

142 Results

143 *Hospitalizations with a diagnosis of PTSD*

144 From 2013 to 2022, 69,108 patients underwent a total of 125,349 hospitalizations with a
145 primary or secondary diagnosis of PTSD in France (**see Table 1**). Among them, 34,436 patients
146 underwent 74,988 hospitalizations in psychiatric facilities, and 37,104 patients underwent
147 50,361 hospitalizations in general hospitals. Of these patients, 2,466 were hospitalized in both
148 types of facilities. Hospitalizations for PTSD represents 0.39% of all hospitalizations in France,
149 1.01% of hospitalizations in psychiatric facilities, and 0.02% of hospitalizations in general
150 hospital.

151 During the study period, the percentage of inpatients with a PTSD diagnosis in psychiatric
152 facilities increased from 0.68% to 2.22% (see **Figure 1**). The prevalence of the disorder
153 appears to increase linearly until 2019, followed by a sharper rise. In general hospitals, the
154 percentage of inpatients with a PTSD diagnosis also increased between 2013 and 2022, from
155 0.02% to 0.04%. The prevalence of the disorder increased almost linearly during this period.

156 *Hospitalizations in psychiatric hospitals*

157 Among those hospitalized in psychiatric facilities, 57.8% were females with a median age of
158 35 years (Q1-Q3: 23-47). Most hospitalizations were full-time (74.5%) and occurred in public
159 facilities (59.7%). The median hospital stay duration for full-time hospitalizations was 13 days
160 (Q1-Q3: 5-29), while the median number of days of presence for part-time hospitalizations was
161 1.5 days (Q1-Q3: 1-10). Nearly all patients were hospitalized under voluntary care (94.9%).
162 The mean number of hospitalizations per patient was 1.96 (SD: 2.96), with more than one-third
163 of the patients (37.3%) having at least two hospitalizations.

164 *Hospitalizations in general hospitals*

165 In general hospitals, the median age at admission was 42 years (Q1-Q3: 24-63), with most
166 patients being female (62.2%). The median hospital stay length was 4 days (Q1-Q3:1-10).
167 Patients had on average 1.36 hospitalization (SD=3.6), with 5,272 (13.9%) having at least two
168 hospitalizations.

169 *Comparison by sex*

170 When comparing psychiatric hospitalizations by sex, female patients were younger (median
171 age: 32 years for females and 37 years for males, p -value<0.01) (see **Table 2 and Figure 2**).
172 Females were more frequently in full-time hospitalization (p -value<0.01) and in private facilities
173 (52.4% for females and 29.2% for males, p -value<0.01). Their hospital stay tended to be
174 longer, both full-time (median stay: 16 days for females and 11 days for males, p -value<0.01)
175 and part-time (median stay: 5 days for females and 1 day for males, p -value<0.01). In general
176 hospital wards, female patients were also younger (median age: 39 years for females and 45
177 years for males, p -value<0.01), but tended to stay as long as males (median stay: 4 days for
178 females and 4 days for males, p -value=0.1).

179 *Evolution between 2013 and 2022*

180 From 2013 to 2022, in psychiatric units, patients were more often in part-time hospitalization
181 (20.8% in 2013 and 33.8% in 2022, p -value<0.01) and for a shorter duration in 2022 (median
182 number of days of presence in part-time hospitalization: 4 days in 2013 and 2 days in 2022, p -
183 value<0.01) (see **Table 3**). The prevalence of females tends to decrease over time, from 64.4%
184 in 2013 to 62.2% in 2022 (p =0.01). There were no differences for other variables (i.e., hospital
185 length for full-time hospitalization, hospitalization in private or public facilities, and compulsory
186 or voluntary care, p >0.05). In general hospitals, patients were younger at admission in 2022
187 than in 2013, going from 47 to 39 years old (p -value<0.01). There were more female patients
188 in 2022 than in 2013 (62.1% in 2013 and 65.6% in 2022, p -value<0.01).

189 *Comorbidities associated with PTSD*

190 The most frequent comorbidities in psychiatric hospitals were mood disorders (21,886, 29.2%),
191 stress-related disorders (8,429, 11.2%), mental and behavioral disorders due to use of alcohol
192 (7,750, 10.3%), disorders of adult personality and behavior (7,226, 9.6%), and problems
193 related to economic and social circumstances (2,236, 3%) (See **Table 4**). Among mood
194 disorders, the most frequent diagnoses were major depressive disorder (15,006, 42.6%),
195 recurrent depressive disorder (6,339, 18%), and bipolar disorder (2,608, 7.4%).

196 In general hospitals, the most frequent comorbidities were problems related to economic and
197 social circumstances (4,777, 9.5%), mental and behavioral disorders due to use of alcohol
198 (3,366, 6.7%), mood disorders (3,226, 6.4%), stress-related disorders (3,166, 6.3%), and
199 symptoms and signs involving the digestive system and abdomen (2,995, 5.9%).

200 Discussion

201 We conducted a nationwide retrospective analysis over ten years (2013-2022), focusing on
202 hospitalizations with a primary or secondary diagnosis of PTSD in France. During this period,
203 approximately 69,108 patients underwent a total of 125,349 hospitalizations, with the majority
204 (59.8%) occurring in psychiatric facilities. Female patients tended to be younger and had longer
205 hospital stays compared to males in psychiatric facilities. Additionally, we observed an increase
206 in the number of hospitalizations with PTSD over the study period, accompanied by a
207 significant decrease in the average age of patients at the time of hospitalization.

208 During the study period, PTSD-related hospitalizations in France represented 0.4% of the
209 inpatient prevalence in the country. While the global prevalence of PTSD in the general
210 population was estimated at 3.9% [2], we observed a lower prevalence among hospitalized
211 individuals. This lower prevalence in hospitalizations was expected, as PTSD management
212 primarily relies on outpatient psychotherapy [27], and hospitalizations typically reflect the most
213 severe cases. However, previous literature suggests that PTSD could be underdiagnosed in
214 primary and secondary care settings [28,29]. The low prevalence of hospitalized patients with
215 PTSD in French databases could therefore be explained by either a low prevalence of PTSD-
216 related hospitalizations or by underdiagnosis during hospital stays. In comparison to the only
217 existing study on PTSD-related hospitalizations in the United States, there were ten times
218 fewer hospitalizations in France over a similar ten-year span, despite the US population being
219 approximately five times larger [19]. Additionally, a study in Northern Ireland reported over
220 37,000 PTSD-related hospitalizations in 2008 alone [30], nearly double the number of PTSD
221 hospitalizations in France in 2022, the year with the highest number of hospitalizations. This
222 discrepancy may be partly explained by variations in PTSD prevalence between countries, with
223 Northern Ireland and the US experiencing particularly high rates [11,30].

224 Furthermore, while two-thirds of hospitalizations with PTSD occurred in psychiatric facilities in
225 our study (59.8%), the remaining cases were observed in general medical services, where the

226 prevalence of non-psychiatric comorbidities was significantly higher (77% vs. 17% in
227 psychiatric settings). This finding aligns with existing scientific literature, which indicates that
228 individuals with PTSD are frequently hospitalized in non-psychiatric services [7,16]. This is
229 likely due to dysregulation of the stress system, which increases the risk of cardiovascular
230 diseases, diabetes, and inflammation [7], and physical consequences of the trauma.

231 Over the ten-year period, the number of hospitalizations with PTSD increased in both
232 psychiatric and general hospitals across France. A similar increase in PTSD-related
233 hospitalizations was reported in the US in the early 2000s [19], while in Korea, a study from
234 2011 to 2017, observed an increase in the incidence of PTSD in the general population [31].
235 While our study covers a more recent period, these findings are consistent with broader trends
236 observed in the literature. This rise can be attributed to several social, political, and health
237 system factors.

238 France has faced a series of traumatic events, including terrorist attacks, natural disasters, and
239 more recently, the COVID-19 pandemic [32]. These events have likely contributed to the rising
240 prevalence of PTSD by increasing the population's exposure to trauma. In particular, scientific
241 literature reported an increase in PTSD cases after the COVID-19 pandemic [23,25].
242 Supporting this, we observed in our results a more significant increase in the inpatient
243 prevalence of PTSD in psychiatric facilities after 2019. Additionally, the COVID-19 pandemic
244 may have specifically delayed interventions for PTSD due to restricted access to outpatient
245 care and other mental health services. This lack of timely intervention could have worsened
246 PTSD symptoms, increasing the severity of the disorder and ultimately leading to a higher
247 likelihood of hospitalization for affected individuals.

248 Moreover, changes in diagnostic practices and an increased awareness of PTSD among
249 healthcare providers could also explain part of this trend. As the understanding of PTSD has
250 evolved, it is possible that more accurate diagnoses and improved coding practices in hospital
251 settings have contributed to the observed increase in PTSD-related hospitalizations [5,9,33-
252 35]. Specific initiatives aimed at improving the recognition and treatment of trauma-related

253 disorders, including PTSD, such as the creation of the National Centre for Resources and
254 Resilience (Cn2r) in 2019 in France, have helped raised awareness both among the general
255 public and healthcare professionals [36]. As a result, this may have led to higher detection
256 rates and more frequent hospitalizations for severe cases, reflecting an improved identification
257 of the disorder.

258 These contextual factors, combined with delays in access to care due to the healthcare
259 system's response to various crises, suggest that the rise in hospitalizations could thus reflect
260 both an increase in the actual prevalence of PTSD and changes in healthcare practices [32].
261 Future research should aim to disentangle the relative contributions of these factors to better
262 understand the drivers behind this trend.

263 Additionally, there was a notable decline in the average age of patients hospitalized with PTSD,
264 accompanied by an increase in the number of part-time hospitalizations in psychiatric facilities.
265 The decrease in the median age of individuals can be explained by the fact that the disorder is
266 increasingly common among adolescents, particularly since the pandemic crisis [25,37]. These
267 trends may also indicate a possible earlier detection and prompter initiation of care for patients,
268 particularly over the past two decades with the implementation of effective treatments such as
269 cognitive behavioral therapy and Eye Movement Desensitization and Reprocessing (EMDR)
270 [38]. Moreover, the increase in part-time hospitalizations follows international
271 recommendations aimed at reducing the length of stay and develop alternatives to full-time
272 hospitalizations [39,40].

273 The comparison of hospitalizations by sex revealed notable differences: females were more
274 often hospitalized, were younger and had longer hospital stays compared to males in
275 psychiatric services. This aligns with previous studies indicating a higher prevalence of PTSD
276 among women in general population, as well as in primary care settings, which may explain
277 the higher proportion of female hospitalizations [11,16,31,41-43]. Research indicates that
278 women have higher rates of PTSD due to greater exposure to trauma, such as sexual abuse,
279 as well as a heightened vulnerability to developing the disorder [11]. Even when accounting for

280 trauma exposure, women still show a greater risk, suggesting that both environmental and
281 biological factors contribute to this difference. Women also appear to experience more severe
282 PTSD [42,43], which could explain the longer duration of hospitalization in psychiatric facilities.
283 Similarly, between 2002 and 2013, women aged 20 to 44 exhibited the highest rates of
284 hospitalization in the USA and tended to have longer hospital stays [19]. This trend of young
285 women being hospitalized therefore appears to persist over time.

286 Prevalent comorbidities observed in psychiatric settings included mood disorders, stress-
287 related disorders (including anxiety disorders), and alcohol-related disorders. Previous
288 literature similarly identifies these disorders as frequently co-occurring with PTSD [6,44]. We
289 found that two thirds of individuals hospitalized in psychiatric facilities with a PTSD diagnosis
290 had a comorbid disorder. While some studies, such as Bryant's, report higher comorbidity rates
291 of up to 91%, others indicate rates closer to 50%, highlighting variability in the literature [44-
292 46]. Given that our study focuses on a hospitalized population, which is typically more severe,
293 our observed rate fits within expected ranges for this group. In general hospital wards,
294 nonspecific diagnoses (Z5: problems related to economic and social circumstances; R5:
295 symptoms and signs involving the digestive system and abdomen) were the most frequently
296 associated with PTSD hospitalizations, accounting for 15.4% of hospitalizations. These related
297 diagnoses reflect on one hand, the socioeconomic distress faced by patients suffering from
298 PTSD [31] and, on the other hand, the more general physical symptoms that may lead them to
299 seek medical care [18]. Some studies have suggested that economic disadvantage may be a
300 risk factor for developing PTSD [31,47]. Alcohol-related disorders, mood disorders, and stress-
301 related disorders were subsequently the most frequent, but in proportions much lower than in
302 psychiatric facilities, and a very small percentage of patients had no comorbidities.

303 *Strengths and limitations*

304 We present here the first nationwide study in France to examine hospitalizations with a
305 diagnosis of PTSD. We conducted comparisons based on sex and examined the evolution of
306 patient characteristics and hospitalizations over the past decade. However, there are

307 limitations. Firstly, we focused solely on hospitalizations with a primary or secondary diagnosis
308 code for PTSD. It is likely that the prevalence of PTSD in hospitalizations is underestimated in
309 our study, as not all patients disclose their PTSD symptoms, leading to underdiagnosis [29].
310 Research suggests that individuals with PTSD often seek medical treatment for physical
311 symptoms from primary care physicians without disclosing their psychiatric symptoms or
312 trauma history [28]. Additionally, this study is based on data from the French national hospitals
313 database (PMSI), which records only hospitalizations. Consequently, cases of PTSD treated
314 in outpatient settings, where most patients receive care, are not included. Thus, the results are
315 representative only of hospitalized PTSD patients and may not be generalizable to all
316 individuals with PTSD in France. Moreover, the PMSI system does not necessarily rely on
317 standardized diagnoses, as they may be based on varying criteria or questionnaires and can
318 be made by specialists other than psychiatrists. This limitation should be considered when
319 interpreting our findings. Furthermore, this descriptive study examined factors such as age,
320 length of hospitalization, and other relevant variables like sex, and their evolution between
321 2013 and 2022. It was not intended to study the impact of potential confounders such as
322 demographic variables or comorbid conditions, nor to assess how results might vary when
323 considering different age groups or comorbidities. Future studies should be specifically
324 designed to evaluate confounders and use sensitivity analyses to refine and validate the
325 findings. Finally, we did not assess suicidal behavior in our study, despite it being a common
326 comorbidity of PTSD [48].

327 Our results highlight the growing demand for mental health services related to PTSD, which
328 calls for strategic interventions at the policy level. One key area for improvement is the
329 strengthening of outpatient services. Ensuring timely access to outpatient mental health care,
330 particularly for trauma survivors, could help prevent the worsening of PTSD symptoms and
331 reduce the need for hospitalization. Initiatives such as expanding trauma-focused therapy
332 options and increasing the availability of specialized PTSD care in ambulatory settings would
333 be crucial in addressing this issue. France has already made efforts to improve post-trauma
334 care with the creation of regional ambulatory services specializing in psychotraumatology in

335 2019 [36]. Our findings suggest that further investment in these services is necessary to keep
336 up with the increasing demand. Expanding these centers and improving accessibility,
337 especially in underserved areas, could help alleviate the burden on hospital systems.
338 Additionally, further integrating mental health care into primary care settings is another
339 important lever for action. Training general practitioners to better recognize PTSD symptoms
340 could facilitate earlier interventions, which in turn may help prevent severe cases from
341 escalating to the point of requiring hospitalization. At the clinical level, improving early detection
342 and ensuring ongoing follow-up for PTSD patients is essential. Clinicians should be
343 encouraged to use standardized PTSD assessment tools in both outpatient and inpatient
344 settings to ensure more consistent diagnoses. This approach could help optimize treatment
345 pathways and reduce the progression of symptoms that lead to hospitalizations.

346 In conclusion, our study is one of the first national studies to assess hospitalizations with a
347 diagnosis of PTSD, providing detailed insights and evaluation of hospitalizations over a period
348 of ten years. We observed a significant increase in PTSD-related hospitalizations, with a more
349 pronounced rise in psychiatric facilities, particularly after the COVID-19 pandemic. Females
350 were younger than males in both facilities and tended to have longer stays in psychiatric
351 facilities. Over time, the median age of individuals with PTSD has decreased, and the number
352 of part-time hospitalizations has increased. The distribution of hospitalizations across
353 psychiatric and general services highlights the complex nature of PTSD and its association
354 with various comorbidities, necessitating comprehensive healthcare approaches for effective
355 management. Further investigations are needed to better understand the factors contributing
356 to hospitalizations across different healthcare settings, with particular attention to optimizing
357 care strategies for younger individuals. Future research should also focus on examining trends
358 in outpatient care and evaluating potential interventions, such as early detection and improved
359 access to mental health services. Implementing these strategies could help mitigate the
360 growing number of PTSD-related hospitalizations, ultimately reducing the burden on
361 healthcare systems and improving patient outcomes.

362

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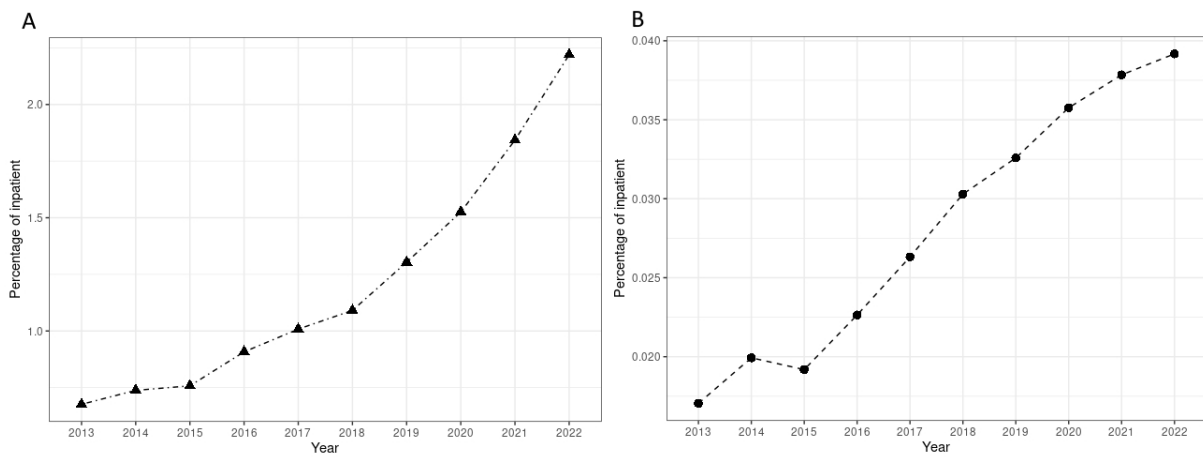
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544 Figure 1. Trends in the percentage of inpatients diagnosed with PTSD from 2013 to 2022 in
545 psychiatric facilities (A) and general hospitals (B) in France.

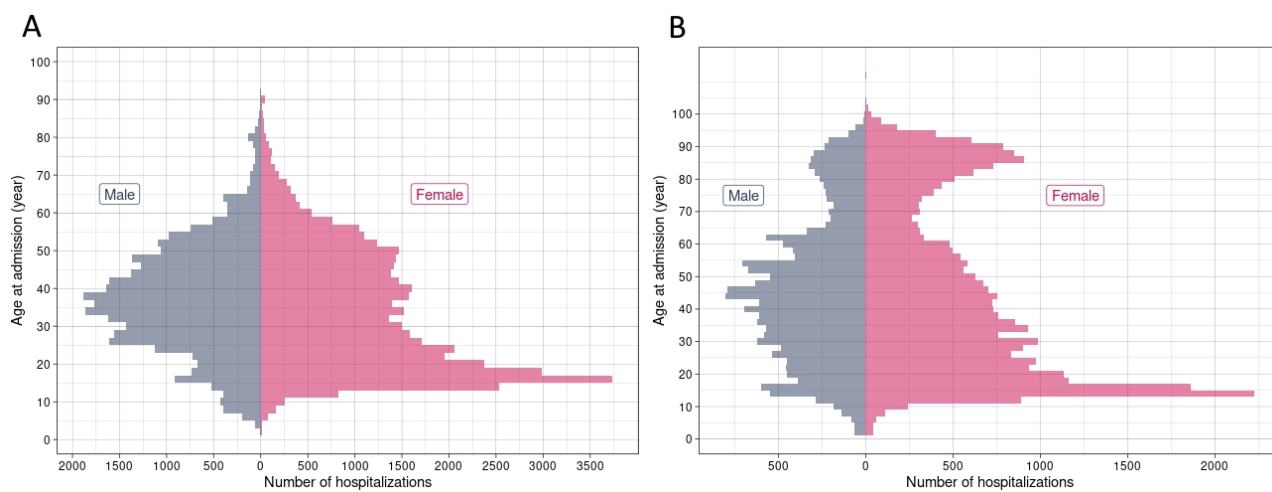


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549 Figure 2. Number of hospitalizations by age at admission and sex in psychiatric facilities (A)
550 and general hospitals (B).



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Tables and figures

555

Table 1. Characteristics of hospitalizations with PTSD in France.

	Overall (N= 125,349)	Psychiatric facilities (N= 74,988)	General hospital wards (N= 50,361)
Number of patients	69,108	34,436	37,104
Age			
Median [Q1, Q3]	37 [23, 51]	35 [23, 47]	42 [24, 63]
Sex, n (%)			
Female	74,663 (59.6)	43,357 (57.8)	31,306 (62.2)
Male	50,686 (40.4)	31,631 (42.2)	19,055 (37.8)
Lengths of stay (median, [Q1, Q3])			
All types	7 [2, 17]		4.00 [1, 10]
Full-time		13.00 [5, 29]	
Part-time		1.50 [1, 10]	
Type of hospitalization, n (%)			
Full-time		55903 (74.5)	
Part-time		19085 (25.5)	
Type of facility, n (%)			
Private		30226 (40.3)	
Public		44762 (59.7)	

Type of care, n (%)			
Voluntary		71161 (94.9)	
Compulsory		3827 (5.1)	

556 *N = Number of hospitalizations; Q1= First quartile; Q3= Third quartile.*

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Table 2. Comparison of hospitalizations in psychiatric and general hospital wards by sex.

	Psychiatric facilities (N= 74,988)			General hospital wards (N=50,361)		
	Female	Male	p-value	Female	Male	p-value
Number of hospitalizations (%)	43,357 (57.8)	31,631 (42.2)		31,306 (62.2)	19,055 (37.8)	
Age, median [Q1, Q3]	31 [20, 46]	37 [28, 47]	<0.01 ^a	39 [22, 67]	45 [30, 61]	<0.01 ^a
Lengths of stay, median [Q1, Q3]						
All types				4 [1, 10]	4 [1, 11]	0.1 ^a
Full-time	14 [5, 33]	11 [4, 25]	<0.01 ^a			
Part-time	3.5 [1, 14]	1 [1, 5]	<0.01 ^a			
Type of hospitalization, n (%)						
Full-time	33274 (76.7)	22629 (71.5)	<0.01 ^b			
Part-time	10083 (23.3)	9002 (28.5)				
Type of facility, n (%)						

Private	21735 (50.1)	8491 (26.8)	<0.01 ^b			
Public	21622 (49.9)	23140 (73.2)				
Type of care, n (%)						
Voluntary	41397 (95.5)	29764 (94.1)	<0.01 ^b			
Compulsory	1960 (4.5)	1867 (5.9)				

N = Number of hospitalizations; Q1= First quartile; Q3= Third quartile; a. Results of Wilcoxon tests; b. results of Chi-2 tests

Table 3. Evolution between 2013 and 2022 in psychiatric and general hospital wards.

	Psychiatric facilities (N=74,988)			General hospital wards (N=50,361)		
	2013	2022	p-value	2013	2022	p-value
Number of hospitalizations	3,871	13,875		2,923	7,317	
Inpatient prevalence, %	0.68	2.22		0.017	0.039	
Age, median [Q1, Q3]	36 [25, 48]	32 [20, 45]	<0.01 ^a	47 [28, 69]	39 [22, 58]	<0.01 ^a
Sex, n (%)						
Female	2493 (64.4)	8634 (62.2)	0.01 ^b	1815 (62.1)	4814 (65.8)	<0.01 ^b
Male	1378 (35.6)	5241 (37.8)		1108 (37.9)	2503 (34.2)	
Lengths of stay, median [Q1, Q3]						
All types				4 [1, 9]	4 [0, 10]	0.01 ^a
Full-time	14 [4, 30]	14 [5, 30]	0.16 ^a			
Part-time	2.5 [1, 15]	1.5 [1, 8.5]	<0.01 ^a			

Type of hospitalization, n (%)						
Full-time	3146 (81.3)	9510 (68.5)	<0.01 ^b			
Part-time	725 (18.7)	4365 (31.5)				
Type of facility, n (%)						
Private	1621 (41.9)	5766 (41.6)	0.74 ^b			
Public	2250 (58.1)	8109 (58.4)				
Type of care, n (%)						
Voluntary	3689 (95.3)	13227 (95.3)	0.97 ^b			
Compulsory	182 (4.7)	648 (4.7)				

N = Number of hospitalizations; *Q1*= First quartile; *Q3*= Third quartile; *a*. Results of Wilcoxon tests; *b*. results of Chi-2 tests

1 Table 4. Frequent comorbid disorders in PTSD-related hospitalizations.

Comorbid disorders, n (%)	Psychiatric facilities (N= 74,988)	General hospital wards (N= 50,361)
No comorbid disorder	20461 (27.3)	1672 (3.3)
Substance use disorders (F10-F19)	7750 (10.3)	3366 (6.7)
Schizophrenia and related disorders (F20-F29)	2407 (3.2)	217 (0.4)
Mood disorders (F30-F39)	21886 (29.2)	3226 (6.4)
Stress-related disorders (F40-F49)	8429 (11.2)	3166 (6.3)
Behavioral syndromes (F50-F59)	3270 (4.4)	1036 (2.1)
Personality disorders (F60-F69)	7226 (9.6)	771 (1.5)
At least one non-psychiatric comorbid disorder	13865 (18.5)	38889 (77.2)
Problems related to economic and social circumstances (Z50-Z59)	2236 (3)	4777 (9.5)
Symptoms and signs involving the digestive system and abdomen (R50-R59)	-	2995 (5.9)

2 *N = Number of hospitalizations.*

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