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Short-Term Psychological Support for Civilians Exposed to the January 2015 Terrorist Attacks in France

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- AQ2**
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Keywords: mental health disorders; psychosocial support; terror-exposed people; terrorist attack

Abstract

Introduction: Following a terrorist attack, responses to a psychosocial disaster range from low-intensity initiatives to high-intensity treatment. Some studies described post-disaster psychosocial services and planning across Europe. However, little is known about the psychosocial support (PS) actually delivered after terrorist attacks.

Study Objective: This study assesses prevalence and the factors associated with not receiving short-term PS among terror-exposed people with probable mental health disorders following the January 2015 terrorist attacks in France.

Methods: This study used data from the first wave of a longitudinal survey conducted six months after the attacks. Prevalence and factors associated with not receiving PS were described in the immediate period (48 hours), the early post-immediate period (48 hours-one week), and the medium-term (over one week) using a robust Poisson regression for each of the three periods.

Results: Nearly one-half of the participants (N = 189) did not receive PS in any period (46.6% in the immediate period, 45.5% in the early post-immediate period, and 54.5% in the medium-term). In each period, not receiving PS was associated with not being very close to the attack sites. Not receiving PS in the immediate period was also associated with being a direct witness (DW) rather than being directly threatened (DT) and not having support in daily life; in the early post-immediate period, not receiving PS was associated with not having a peritraumatic dissociation experience and being followed for a psychological problem before the attacks; and in the medium-term period, it was associated with perceived social isolation.

Conclusion: The characteristics of the terror exposure and social support seemed to influence presence or absence of PS after the terrorist attack and highlight the need for strategies to reach out to people regardless of the type of exposure.

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Introduction

People who have been exposed to a terrorist attack, their relatives, and the bereaved are at risk of developing mental health disorders such as posttraumatic stress disorder (PTSD), anxiety, depression, and suicide risk.^{1,2} Five weeks and 12 weeks after the terrorist attacks in Madrid, Spain on March 11, 2004, 44.1% of respondents presented PTSD, 31.5% major depression,

Abbreviations:

CR: close relatives
CUMP: medico-psychological emergency units
DT: directly threatened
DW: direct witness
IMPACTS: French acronym for Investigation of Trauma Consequences in People Exposed to the January 2015 Terrorist Attacks and their Support and Mental Care
IW: indirect witness

PS: psychological support
PTSD: posttraumatic stress disorder

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and 13.4% generalized anxiety disorder.³ In addition to the symptoms experienced, a mental health disorder can also lead to difficulties at work,⁴ changes in social and family relationships⁵ or in quality of life,⁶ and poor physical health.⁶

Following a terrorist attack, responses to a psychosocial disaster range from “low-intensity initiatives,” such as social support, psychological first aid, assessment, and psycho-education, to “high-intensity treatment,” such as trauma-focused cognitive behavioral therapy, eye movement desensitization and reprocessing therapy, or pharmacotherapy.⁷ Some studies described post-disaster psychosocial services and planning across Europe^{8,9} and developed guidelines for evidence-informed, post-disaster psychosocial management;¹⁰ however, little is known about the psychosocial support (PS) actually delivered after terrorist attacks.

In 2015–2016, France was faced with several terrorist attacks, with a first attack in January 2015, in several locations in the Paris region over a three-day period. Response from the French health care system was organized in three stages: immediate (first 48 hours), post-immediate (48 hours–one month), and after one month.¹¹ Since the 1995 terrorist attacks in France, the intervention of the medico-psychological emergency units (CUMP), constituted by permanent and volunteer health professionals (psychiatrists, psychologists, nurses), has provided psychological care in the immediate (defusing) and post-immediate (psychotherapeutic intervention) periods for people who have been exposed (survivors, witnesses, or close relatives [CRs]).^{12,13} After the post-immediate period (after one month), psychological care (deferred debriefing and psychotherapy) is provided by psychologists or psychiatrists in various private or public institutions, but without any specific organization.¹³

The objectives of this study were: (1) to describe the prevalence or absence of PS in the aftermath of the January 2015 attacks among terror-exposed people; and (2) to describe factors associated with not receiving short-term PS among those with mental health disorders six months after the attacks.

87 Methods and Materials

88 Survey Design and Population

This study used data from a longitudinal survey known as IMPACTS (the French acronym for Investigation of Trauma Consequences in People Exposed to the January 2015 Terrorist Attacks and their Support and Mental Care), led by the French national public health agency (*Santé Publique France*) and the regional health agency (*ARS Île-de-France*), in order to assess the mental health, the psycho-somatic impact of the attacks, and PS among both civilians and first responders exposed to the January 2015 terrorist attacks. This survey was launched in two waves: six-to-ten months (Wave 1) and 18–22 months (Wave 2) after the attacks (from June to October 2015 and in 2016, respectively).

The design of the IMPACTS survey has been described elsewhere.^{14,15} The present paper only concerns the civilians. Civilians were persons listed either by the authorities or by CUMP volunteers as: (1) injured, a hostage, or a witness who had to flee the scene because their lives were threatened; (2) members of the editorial staff of the *Charlie Hebdo* magazine; (3) residents and workers within a 100m radius of the sites of the attacks; and (4) civilians identified by other victims through snowball sampling.¹⁶

The inclusion criteria were: being aged 16 years or over and meeting one of the “A Criteria” for PTSD as set out in the

Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (exposure to death, serious injury, directly or as a witness, or by learning that the traumatic event was experienced by a close family member or friend).¹⁷

The participants were interviewed face-to-face by trained trauma psychologists. Of the 489 people who responded to the inclusion questionnaire, 99 did not meet the inclusion criteria (20%). Of the remaining eligible 390, 105 declined to participate (27%) while 285 agreed they would participate in the longitudinal study (global agreement rate to participate in IMPACTS: 73%). Of the 285 who initially agreed to participate, 190 participated in Wave 1 (66.7%).

Psychological Support

In this study, 189 civilian participants were considered in Wave 1 of the IMPACTS survey who answered the question “*Do you remember having received psychological support (psychological first aid or interview) by a professional or a volunteer? (yes/no).*” This question from the IMPACTS survey was asked for the three periods: (1) 48 hours; (2) 48 hours to one week; and (3) more than one week after the event. The period “48 hours” corresponds to the immediate period, “48 hours–one week” corresponds to the early post-immediate period, and “more than one week” corresponds to the medium-term. The absence of short-term PS was explored for each period.

Independent Factors

In order to describe the factors associated with not receiving PS, first, variables that are classic factors reported in the literature to be associated with absence of PS – not necessarily following an attack or trauma – were selected: history of psychological disorders and care,¹⁸ history of traumatic or life-impacting situations, socio-economic conditions,¹⁸ and social support.¹⁹ Second, factors known in the literature to be specifically related to a “traumatic” situation such as the level of exposure (geographical, type, feelings) and the presence of peri-traumatic symptoms were studied.^{20,21}

It also hypothesized that the factors associated with absence of PS varied with the time period. Initially, absence of support could be more related to the level of exposure to the attacks and peri-traumatic reactions (individuals who were less exposed and without peri-traumatic symptoms could receive less support than others), and over time, the characteristics related to background and social support could be linked to the absence of PS measures.

Sociodemographic Characteristics

The socio-demographic data included in the analysis concerned: gender, age, French origin (yes/no), educational level (higher or lower than high-school diploma), occupational status (employed/unemployed), and living with someone (yes/no).

Social Support and Isolation—The participants were asked about their current perceived social isolation (yes/no) and about current social support (the question was “*If you were in need, would you be able to count on someone, either members of your household, other family members, friends or neighbors, colleagues, or the community, for: (1) moral or emotional support? (yes/no), (2) financial and material support? (yes/no), and (3) support in daily life? (yes/no).*”).

Terror Exposure—Terror exposure during the terrorist attacks was measured using several indicators:

- Physical Proximity with the Perpetrators: under 10 meters from terrorist(s), or more distant;

- 169 • Type of Exposure: (1) directly threatened (DT) sustaining
170 physical injuries, taken hostage, or present at the scene of
171 the event and exposed to eye contact with/heard the voice
172 of/talked with the terrorists, or saw a weapon pointed directly
173 at them; (2) direct witness (DW) directly present at the scene
174 during the attacks and saw/heard someone else being threat-
175 ened/being injured/dying, saw blood or inert/dead bodies,
176 touched injured/inert/dead bodies, smelled gunpowder; (3)
177 indirect witness (IW) at home or working within a 100m
178 radius of the events and not in the “directly/indirectly
179 threatened” categories; or (4) close relatives (CRs) of those
180 who were murdered, injured, or taken hostage; and
- 181 • Perceived Terror Exposure: measured with the question “*If*
182 *you were close to a victim or present at or near the scene at the*
183 *time of the event, on a scale of 0 to 10, how would you rate your*
184 *feeling of exposure to the event?*” The response scale ranged
185 from zero (“I was not really exposed”) to ten (“I was one of
186 the people who were the most exposed”).

187 *History of Psychological Care and Traumatic Situations*—The par-
188 ticipants were asked if, before the event, they had been “*followed by*
189 *a general practitioner, a psychiatrist, a psychologist, or a psychotherapist*
190 *for more than six months for a psychological problem*” (yes/no).

191 For other potentially traumatic events, the participants were
192 asked if they had experienced a “difficult situation” in the previous
193 year (yes/no) and if they had experienced other “traumatic events in
194 their life” (where they felt suddenly threatened or their life was in
195 danger).

196 *Peri-Traumatic Reactions*—Peri-traumatic reactions were mea-
197 sured using the Shortness of Breath, Tremulousness, Racing
198 Heart, and Sweating scale (STRS), which is a 13-item scale (scores
199 ranging from zero to four) which provides a retrospective score
200 for somatic manifestations of fear,²² and the Peritraumatic
201 Dissociative Experience Questionnaire (PDEQ), which is a 10-
202 item questionnaire (scores ranging from zero to four) which mea-
203 sures peri-traumatic dissociative symptoms.²³ A score of 15 or more
204 indicates a significant experience of dissociation.

205 *Mental Health Disorders*—Modules from the Mini-
206 International Neuro-Psychiatric Interview V6 (MINI) question-
207 naire were used to assess PTSD in the last month, major depressive
208 episode (current and past), and certain anxiety disorders (agorapho-
209 bia, social phobia, panic disorder, or general anxiety).²⁴

210 *Statistical Analysis*

211 Prevalence or absence of PS was studied in each of the three periods
212 after the January 2015 terrorist attacks among participants with
213 PTSD, depression, or anxiety. Given the hypothesis that early
214 manifestations of PTSD could be more visible and detectable,
215 and therefore better managed, statistical comparisons of the pat-
216 terns of presence and absence of PS among people with depression
217 and anxiety disorders, according to whether or not the participants
218 also had PTSD, were conducted. Performed Chi-square tests (or
219 Fisher’s exact tests when frequencies were low) were conducted to
220 test this effect.

221 Factors associated with the absence of PS were explored among
222 those with mental health disorders. Given the dynamics of the
223 response from the French health care system (described above),
224 three separate regression models were used for the different periods
225 (the dependent variables were absence of support in the immediate,
226 early post-immediate, and medium-term [yes/no]). A robust
227 Poisson regression model was used to produce prevalence ratios.²⁵

All the variables previously selected at $P < .05$ were included in final
models for each of the three model.

All analyses were carried out using R statistical software Version
4.1.1 (R Core Team; R Foundation for Statistical Computing;
Vienna, Austria).

Ethics

The IMPACTS survey received approval from the Committee of
Ethics and Deontology (CED) of Santé Publique France in 2015,
from the French national data protection authority, (CNIL,
No.915262), the French ethics committee for research (CPP,
No.3283), and the French advisory committee on information
processing of research material in the field of health (CCTIRS,
No 150522B-31). Written informed consent was obtained from
all participants.

Results

Participant Characteristics

Among the participants in the IMPACTS survey ($N = 189$), the
median age was 41 years (Table 1). There were 60.8% women,
6.9% were of non-French origin, and 69.7% had high school diplo-
mas. At the time of the survey (six months after the attacks), 18.0%
of the participants were unemployed and 24.3% were living alone.
Concerning exposure to the terrorist attacks, 44.4% of the partic-
ipants were under 10 meters from the site of the attacks, or very
close, or in the next room. Consequently, 30.7% were directly
exposed to the events, 42.9% indirectly threatened, 19.0% were
witnesses, and 7.4% were CRs of somebody who had been DT.

Among the 189 participants, 88 (46.6%) did not receive PS
immediately after the attacks, 86 (45.5%) did not receive PS in
the early post-immediate period after the attacks, and 102
(54.5%) did not receive PS in the medium-term. In all, 46
(24.3%) did not receive PS at any time (Table 1).

Absence of Short-Term Psychological Support and Mental Health

Among the participants presenting PTSD ($n = 34$), depression
($n = 74$), or anxiety ($n = 59$) six to nine months after the terrorist
attacks, 9%, 18%, and 12%, respectively, had not received PS (data
not shown).

Among the participants with depression at six to nine months
($n = 74$), the absence of PS in the medium-term was higher among
those who did not present PTSD (54%) than among those who did
(19%; $P = .007$; Figure 1). Among the participants with anxiety
disorders at six to nine months ($n = 59$), the absence of PS in
the medium-term was higher among those who did not have
PTSD (63%) than among those who did (13%; $P < .001$). There
was no significant difference between the immediate and early
post-immediate periods.

Univariate Analysis of Factors Associated with Absence of Short-Term Psychological Support

The absence of immediate PS (<48 hours) was associated with
unemployment (prevalence ratio [PR] = 1.98; 95% [confidence
interval] CI, 1.32-2.98); being not very close to the attack sites
(PR = 2.73; 95% CI, 1.55-4.80); being a DW (PR = 2.25; 95%
CI, 1.14-4.44); being an IW or a CR (PR = 2.52; 95% CI,
1.25-5.09) rather than DT; and not having support in daily life
(PR = 1.76; 95% CI, 1.13-2.75; Table 2).

The absence of early post-immediate PS (48 hours – one week)
was associated with having been in a site other than the one in Paris
(PR = 1.69; 95% CI, 1.07-2.67); not being very close to the attack
sites (PR = 3.23; 95% CI, 1.72-6.08); not having a significant

Participant Characteristics	n (%)
Socio-Demographics	
Female Gender	115 (60.8)
Age at the Time of the Terrorist Attack: <i>Median (Range)</i>	41 (19-84)
Age Class: [19-30]	48 (25.4)
[31-50]	94 (49.7)
≥ 51	47 (24.9)
Educational Level < High-School Diploma	57 (30.3)
Unemployed	34 (18.0)
Living Alone	46 (24.3)
Non-French Origin	13 (6.9)
Terror Exposure	
Attack Location Outside Paris (versus Paris)	130 (68.8)
Physical Proximity to Perpetrators: < 10 Meters or Next Room	84 (44.4)
Type of Exposure: <i>Directly Threatened</i>	58 (30.7)
<i>Direct Witness</i>	81 (42.9)
<i>Close Relatives</i>	14 (7.4)
<i>Indirect Witness</i>	36 (19.0)
Perceived Terror Exposure: <i>Median (Range)</i>	7 (0-10)
Mental Health	
PTSD (Previous Month)	34 (18.0)
Major Depressive Disorder (Previous Year)	74 (39.2)
Anxiety Disorders (at least one)	59 (31.4)
At Least One Mental Health Disorder (PTSD, Depression, Anxiety)	105 (55.6)
Psychological Support	
Not Having Support in the Immediate Period	88 (46.6)
Not Having Support in the Early Post-Immediate Period	86 (45.5)
Not Having Support in Medium Term	102 (54.5)
Not Having Support in Any Period	46 (24.3)

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Table 1. Description of the Socio-Demographics, Terror Exposure, Mental Health, and Psychological Support among the Participants in the IMPACTS Survey, France 2015 (n=189)
Abbreviations: PTSD, posttraumatic stress disorder; IMPACTS, French acronym for Investigation of Trauma Consequences in People Exposed to the January 2015 Terrorist Attacks and their Support and Mental Care.

286 dissociative experience (PR = 2.18; 95% CI, 1.33-3.58); having
287 medical follow-up for a psychological problem before the attacks
288 (PR = 2.33; 95% CI, 1.15-4.70); and the absence of immediate
289 PS (PR = 2.40; 95% CI, 1.45-3.98).

290 The absence of PS in the medium-term was associated with not
291 being very close to the attack sites (PR = 2.30; 95% CI, 1.43-3.97);
292 a low level of perceived exposure (PR = 1.63; 95% CI, 1.06-2.52);
293 absence of immediate PS (PR = 1.72; 95% CI, 1.12-2.62); and
294 absence of early post-immediate PS (PR = 1.93; 95% CI, 1.27-
295 2.94). It was also inversely associated with perceived social isolation
296 (PR = 0.47; 95% CI, 0.23-0.97).

297 *Multivariate Analysis of Factors Associated with Absence of Short-* 298 *Term Psychological Support*

299 All the variables reaching P <.05 in univariate analysis were
300 included in the multivariate models.

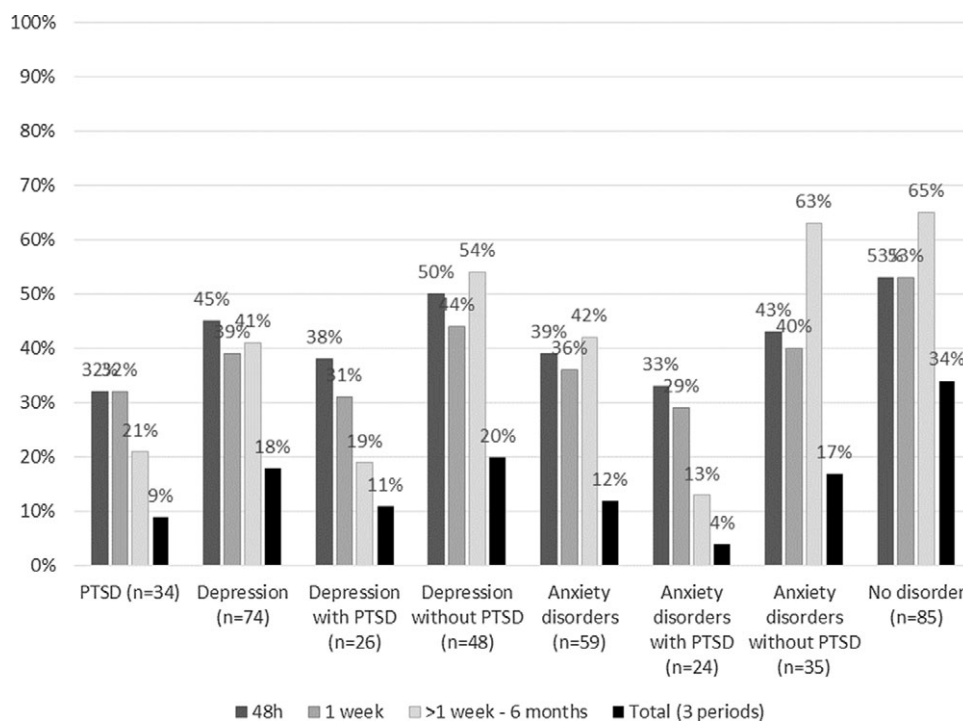
301 The absence of immediate PS (48 hours) remained associated
302 with not being very close to the attack sites (PR = 2.50; 95% CI,
303 1.41-4.43); being a DW (PR = 2.07; 95% CI, 1.13-3.78) rather
304 than being DT; and not having support in daily life (PR = 1.72;
305 95% CI, 1.18-2.52; Table 3). The association with unemployment
306 was no longer significant (P = .069).

The absence of early post-immediate PS (48 hours – one week)
was associated with not being very close to the attack sites (PR =
2.46; 95% CI, 1.13-5.33); not having a dissociative experience
(PR = 1.73; 95% CI, 1.11-2.72); and having follow-up for a
psychological problem before the attacks (PR = 2.34; 95% CI,
1.15-4.38). The absence of early post-immediate PS was no longer
associated with having been in a site other than the one in Paris
(P = .191) and with the absence of immediate PS (P = .107).

The absence of PS in the medium-term was associated with not
being very close to the attack sites (PR = 2.30; 95% CI, 1.43-3.97)
and inversely associated with perceived social isolation (PR = 0.47;
95% CI, 0.23-0.97). The associations with perceived exposure, the
absence of immediate PS, and the absence of early post-immediate
PS were not significant (respectively, P = .216; P = .275; and
P = .331).

Discussion

This study describes the prevalence or the absence of PS provided
in the short-/medium-term after the Paris terrorist attacks among
exposed people, and the factors associated with the absence of PS
among those presenting mental health disorders six months after
the attacks.



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Figure 1. Absence of Psychological Support in the Immediate, Early Post-Immediate, and Medium-Term Periods after the January 2015 Terrorist Attacks among Individuals Presenting at least One Disorder (PTSD, Depression, Anxiety Disorders), n = 105, IMPACTS Survey, France 2015.

Abbreviations: PTSD, posttraumatic stress disorder; IMPACTS, French acronym for Investigation of Trauma Consequences in People Exposed to the January 2015 Terrorist Attacks and their Support and Mental Care.

328 The absence of PS was more marked in the longer-term than
 329 immediately after the events (46.6% to 54.5%). This study indi-
 330 cates that the absence of PS was more frequent for people who
 331 did not have a disorder (at the time of the survey) than for people
 332 who did. This finding is expected: people presenting symptoms
 333 received PS. In addition, the study indicates that the absence of
 334 support the in long-term was significantly more frequent among
 335 people with depression or anxiety disorder without PTSD than
 336 among people with depression or anxiety disorder with PTSD.
 337 This result could be explained by a greater “visibility” of PTSD
 338 symptoms than those of depression or anxiety, and also by the fact
 339 that, after a traumatic event, PTSD symptoms tend to occur before
 340 symptoms of depression or anxiety disorders. Thus, these initial
 341 descriptive results suggest that PS should be provided in a “proac-
 342 tive” way, in the long-term, with tools enabling better early
 343 detection of depressive symptoms or anxiety disorders. In the pub-
 344 lic health/ESPA survey among civilians exposed to the November
 345 13th attacks in France, the prevalence of PS within six months was
 346 higher among people with PTSD (89%) than among those with
 347 anxiety symptoms (57%) or depressive symptoms (79%) but no
 348 PTSD.¹³

349 In order to improve knowledge on mental health care for people
 350 who are exposed to a terrorist attack and who have a mental health
 351 disorder, this study also investigated the factors associated with the
 352 absence of PS in the three critical periods with at least one mental
 353 health disorder.

354 First of all, in each period studied, the absence of PS was sig-
 355 nificantly more frequent among people who were close to the per-
 356 petrators. Similarly, in the immediate period, the type of exposure

was significantly associated with provision of PS: witnesses
 received less support than those who were DT since the first
 responders probably provided more support to those who were
 DT. These “dose-response” effects of exposure in relation to pro-
 vision of PS are well-known observations in the literature.²⁶⁻²⁸
 Although there is also a dose-effect of exposure on the develop-
 ment of symptoms, it is nonetheless true that people who are con-
 sidered less exposed can also develop disorders and should therefore
 also receive PS.^{29,30}

The site of the attacks and individually perceived exposure did
 not remain significantly associated with absence of PS in the multi-
 variate model (in the early post-immediate period and in the
 medium-term). This could be due to the sample size, or to the fact
 that absence of PS in the early post-immediate period may have
 been significantly more marked among people exposed to attacks
 at sites other than Paris, which could be explained by greater avail-
 ability of care in Paris than outside (given that post-immediate PS
 is provided in particular by hospitals).

In the literature, it is well-known that people who have social
 support are more willing to access health care.^{19,31} Along these
 lines, this study indicates that the absence of PS in the immediate
 period was more likely among those who reported not being able to
 count on someone to help with daily life. Conversely, the absence of
 PS in the medium-term was significantly more marked among
 those who did not feel socially isolated. Since the participants in
 the survey were more likely to be in a socially advantaged situation,
 it is plausible that, in the medium-term, people who felt supported
 by their family of friendly networks would resort to PS less than
 those who did not.

Variables		Immediate Period (44/105)		Early Post-Immediate Period (41/105)		Medium-Term (47/105)	
		PR	[95% CI] P Value	PR	[95% CI] P Value	PR	[95% CI] P Value
Unemployment	No	<i>ref.</i>	.069				
	Yes	1.42	[0.97-2.06]				
Site of Attacks	Paris			<i>ref.</i>	.191		
	Other Site			1.29	[0.88-1.90]		
Physical Proximity to Perpetrators	Very Close	<i>ref.</i>	.002	<i>ref.</i>	.023	<i>ref.</i>	.018
	Not Close	2.50	[1.41-4.43]	2.46	[1.13-5.33]	1.98	[1.12-3.48]
Type of Exposure	DT	<i>ref.</i>	.040				
	DW	2.07	[1.13-3.78]				
	IW + CR	1.46	[0.78-2.74]				
Perceived Exposure Level	High (≥ 7)					<i>ref.</i>	.216
	Low (< 7)					1.29	[0.86-1.95]
Dissociative Experience	Yes			<i>ref.</i>	.016		
	No			1.73	[1.11-2.72]		
Social Isolation	No					<i>ref.</i>	.024
	Yes					0.47	[0.25-0.91]
Support in Daily Life	Yes	<i>ref.</i>	.012				
	No	1.72	[1.18-2.52]				
Follow-Up for a Psychological Problem Before the Attacks	Yes			<i>ref.</i>	.018		
	No			2.34	[1.15-4.38]		
PS in the Immediate Period	Yes			<i>ref.</i>	.107	<i>ref.</i>	.275
	No			1.55	[0.91-2.64]	1.28	[0.82-1.98]
PS in the Early Post-Immediate Period	Yes					<i>ref.</i>	.331
	No					1.26	[0.79-2.00]

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Table 3. Multivariate Analysis of Factors Associated with Absence of Psychological Support in the Immediate, Early Post-Immediate, and Medium-Term Periods after the Terrorist Attacks among Individuals Presenting at least One Disorder (PTSD, Depression, Anxiety Disorders), n = 105, IMPACTS Survey, France 2015

Note: Empty cells indicate that the variable was not included in the final model.

Abbreviations: DT, directly threatened; DW, direct witness; IW, indirect witness; CR, close relatives, PTSD, posttraumatic stress disorder; IMPACTS, French acronym for Investigation of Trauma Consequences in People Exposed to the January 2015 Terrorist Attacks and their Support and Mental Care; PR, prevalence ratio; CI, confidence interval.

386 Two other interesting factors were associated with the
387 absence of PS in the early post-immediate period. First, these
388 results indicate that people with no reaction of peri-traumatic
389 dissociation are less likely to have PS, which is an expected
390 result.²⁸ Second, not having previous follow-up for a psychologi-
391 cal disorder is associated with a greater prevalence of absence of
392 PS. This result is also expected because it is known in the liter-
393 ature that people with previous experiences of psychological care
394 are more willing to have a further experience of psychological
395 care.¹⁸ This association was not retrieved in the other two peri-
396 ods. People who have psychological follow-up are more likely to
397 be cared for by hospitals or in community practices rather than
398 by terror victim associations.

399 In this study, certain classic associations were not found between
400 social determinants and PS, such as age, gender, educational level,
401 country of birth, or relationship status. This absence of effect of
402 social inequalities could be due to the homogeneity of the social
403 situation of the population studied.

Like Allsopp,³² this study recommends that efforts should be
made to reach out to people who scatter after the event and be more
proactive in identifying and accessing those who need support.
Finally, given (1) the suggested role of PS in enhancing acceptance
of psychological follow-up,³³ and (2) the fact that absence of social
support could have a negative impact,^{34,35} future research needs to
focus on the quality and the type of PS liable to increase the like-
lihood of remaining in a continuum of care for the populations
in need.

Limitations/Strengths

This study presents some limitations. The major limitation was
the cross-sectional design and the fact that only report data were
available, and it could not exclude the possibility that some of
the data were subject to recall or reporting bias concerning PS, spe-
cifically in the immediate and early post-immediate periods.
Second, another limitation was that the small number of partici-
pants could compromise the significance of certain associations.

421 Third, the data reflected the socioeconomic situation at the time
422 the participants were interviewed and it hypothesized that the par-
423 ticipants would have the same perception of their social support/
424 isolation as at the time of the attacks. Fourth, the comparability
425 of the results is limited: most studies have focused more on mental
426 health care than on PS.³⁶

427 This study includes some strengths. The first strength of this
428 study was that the participants in the survey included both people
429 who were directly exposed and CRs. Second, validated scales were
430 used to screen for the main mental disorders. Third, the data were
431 collected for three different periods in order to better describe the
432 reality of care received. Fourth, the IMPACTS survey contains
433 extensive data on the types of exposure and on social support, which
434 are rarely described in surveys on mental health care in the after-
435 math of terrorist attacks, enabling a refinement of the results.

436 Conclusion

437 Some people with mental health disorders at six months did not
438 receive PS after the terrorist attacks, although this could have pre-
439 vented the development of symptoms.¹² Among those who had a
440 mental health disorder six months after the attacks, factors associ-
441 ated with the absence of PS were mainly linked to exposure to the
442 event, particularly for physical proximity with the perpetrators, and
443

444 to social support. These results suggest that the role of social sup-
445 port could change over time and also suggest that the rapid
446 dispersion of the people present at the event could have prevented
447 support for the individuals who were more distant from the site.

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566

Variables		Immediate Period (44/105)		Early Post-Immediate Period (41/105)		Medium-Term (47/105)	
		PR	[95% CI] P Value	PR	[95% CI] P Value	PR	[95% CI] P Value
Age	19-30 (n=18)	1.01	[0.56-1.84]	0.86	[0.42-1.79]	1.14	[0.66-1.97]
	31-50 (n=57)	<i>ref.</i>	.799	<i>ref.</i>	.789	<i>ref.</i>	.877
	>51 (n=30)	0.84	[0.48-1.46]	1.12	[0.66-1.90]	0.99	[0.60-1.63]
Gender	Women (n=74)	<i>ref.</i>	.657	<i>ref.</i>	.963	<i>ref.</i>	.161
	Men (n=31)	1.11	[0.69-1.79]	0.99	[0.58-1.67]	1.35	[0.89-2.06]
French Origin	No (n=7)	<i>ref.</i>	.229	<i>ref.</i>	.587	<i>ref.</i>	.202
	Yes (n=98)	0.33	[0.05-2.03]	0.72	[0.22-2.37]	0.30	[0.05-1.89]
Level of Education	>High School (n=70)	<i>ref.</i>	.658	<i>ref.</i>	.864	<i>ref.</i>	.879
	<High School (n=34)	0.89	[0.54-1.48]	0.96	[0.57-1.60]	0.97	[0.61-1.52]
Unemployment	No (n=85)	<i>ref.</i>	<.001	<i>ref.</i>	.688	<i>ref.</i>	.587
	Yes (n=20)	1.98	[1.32-2.98]	0.87	[0.46-1.68]	1.15	[0.70-1.90]
Site of Attacks	Paris (n=74)	<i>ref.</i>	.175	<i>ref.</i>	.025	<i>ref.</i>	.957
	Other Site (n=31)	1.36	[0.87-2.14]	1.69	[1.07-2.67]	1.01	[0.64-1.61]
Physical Proximity to Perpetrators	Very Close (n=50)	<i>ref.</i>	<.001	<i>ref.</i>	<.001	<i>ref.</i>	<.001
	Not Close (n=55)	2.73	[1.55-4.80]	3.23	[1.72-6.08]	2.30	[1.43-3.97]
Type of Exposure	DT (n=36)	<i>ref.</i>	.032	<i>ref.</i>	.382	<i>ref.</i>	.076
	DW (n=44)	2.25	[1.14-4.44]	1.34	[0.73-2.46]	1.96	[1.09-3.55]
	IW + CR (n=25)	2.52	[1.25-5.09]	1.57	[0.83-2.98]	1.87	[0.98-3.58]
Perceived Exposure Level	High (≥7) (n=60)	<i>ref.</i>	.112	<i>ref.</i>	.062	<i>ref.</i>	.026
	Low (<7) (n=42)	1.43	[0.92-2.22]	1.58	[0.98-2.55]	1.63	[1.06-2.52]
Dissociative Experience	Yes (n=61)	<i>ref.</i>	.441	<i>ref.</i>	.002	<i>ref.</i>	.361
	No (n=42)	1.20	[0.75-1.91]	2.18	[1.33-3.58]	1.22	[0.80-1.87]
Score for Somatic Manifestations	≥23 (n=60)	<i>ref.</i>	.249	<i>ref.</i>	.136	<i>ref.</i>	.214
	<23 (n=38)	1.30	[0.83-2.05]	1.43	[0.89-2.28]	1.32	[0.85-2.03]
Living Alone	Yes (n=30)	<i>ref.</i>	.271	<i>ref.</i>	.462	<i>ref.</i>	.316
	No (n=75)	1.29	[0.82-2.04]	0.81	[0.45-1.43]	0.76	[0.45-1.29]
Social Isolation	No (n=25)	<i>ref.</i>	.806	<i>ref.</i>	.428	<i>ref.</i>	.042
	Yes (n=80)	1.07	[0.64-1.78]	0.78	[0.41-1.45]	0.47	[0.23-0.97]
Financial Support	Yes (n=76)	<i>ref.</i>	.073	<i>ref.</i>	.085	<i>ref.</i>	.649
	No (n=29)	1.50	[0.96-2.33]	1.51	[0.95-2.42]	1.11	[0.70-1.75]
Support in Daily Life	Yes (n=90)	<i>ref.</i>	.012	<i>ref.</i>	.934	<i>ref.</i>	.379
	No (n=15)	1.76	[1.13-2.75]	1.03	[0.53-2.01]	0.71	[0.34-1.51]

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Table 2. Univariate Analysis of Factors Associated with Absence of Psychological Support in the Immediate, Early Post-Immediate, and Medium-Term Periods after the January 2015 Terrorist Attacks among Individuals Presenting at least One Disorder (PTSD, Depression, Anxiety Disorders), n = 105, IMPACTS Survey, France 2015 (continued)

Variables		Immediate Period (44/105)		Early Post-Immediate Period (41/105)		Medium-Term (47/105)	
		PR	[95% CI] P Value	PR	[95% CI] P Value	PR	[95% CI] P Value
Lifetime Trauma	None Declared (n=48)	<i>ref.</i>	.406	<i>ref.</i>	.192	<i>ref.</i>	.561
	At Least One (n=57)	1.22	[0.77-1.93]	0.73	[0.45-1.17]	1.14	[0.74-1.75]
Difficult Life Event in the Past Year	Yes (n=43)	<i>ref.</i>	.849	<i>ref.</i>	.908	<i>ref.</i>	.384
	No (n=60)	0.96	[0.60-1.53]	1.03	[0.62-1.70]	1.22	[0.78-1.92]
Follow-Up for a Psychological Problem Before the Attacks	Yes (n=34)	<i>ref.</i>	.605	<i>ref.</i>	.019	<i>ref.</i>	.369
	No (n=71)	1.14	[0.69-1.89]	2.33	[1.15-4.70]	1.25	[0.77-2.05]
PS in the Immediate Period	Yes (n=64)			<i>ref.</i>	<.001	<i>ref.</i>	.013
	No (n=41)			2.40	[1.45-3.98]	1.72	[1.12-2.62]
PS in the Early Post-Immediate Period	Yes (n=58)					<i>ref.</i>	.002
	No (n=47)					1.93	[1.27-2.94]

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Table 2. (continued). Univariate Analysis of Factors Associated with Absence of Psychological Support in the Immediate, Early Post-Immediate, and Medium-Term Periods after the January 2015 Terrorist Attacks among Individuals Presenting at least One Disorder (PTSD, Depression, Anxiety Disorders), n = 105, IMPACTS Survey, France 2015

Abbreviations: DT, directly threatened; DW, direct witness; IW, indirect witness; CR, close relatives, PTSD, posttraumatic stress disorder; IMPACTS, French acronym for Investigation of Trauma Consequences in People Exposed to the January 2015 Terrorist Attacks and their Support and Mental Care; PR, prevalence ratio; CI, confidence interval.