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Original article

Psycho-health effects in Italian psychiatric nurses suffering from aggressions in their work environments

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SUMMARY

Background

Violence against healthcare workers is a problem of global significance and represents a phenomenon that has been growing rapidly in recent years for the healthcare professions. The aim of the present study was to investigate if there were any associations between anxiety and depression conditions in Italian psychiatric nurses who received a physical or verbal aggression and, additionally if the safety perception levels influenced their anxiety and depression conditions, too.

Methods

All Italian nurses who worked in an Italian psychiatric setting with at least 6 months of work experience were enrolled from March 2017 to December 2019.

Results

As regards anxiety and depression conditions associated to physical and verbal aggressions suffered from Italian psychiatric nurses, data suggested statistically significant associations to physical and verbal aggressions suffered and anxiety and depressions conditions reported. Finally, as regards security level perceptions and anxiety and depression conditions, data reported statistically significant associations between security level perceptions and anxiety and depression levels registered, as: psychiatric nurses who perceived their work environments more secure, less registered an anxiety or depression disorder, respectively.

Discussion

From the data recorded, a safe nursing work environment has gained great attention because it was an essential element that influenced physical, psychological, and social health conditions.

Key words: health, psychiatric nurse, psychology, work environment

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Introduction

Violence against healthcare workers is a problem of global significance and represents a phenomenon that has been growing rapidly in recent years for the healthcare professions. The International Labor Organization, based on criteria developed by the European Union, has defined violence and aggression as "any action, incident or behavior in which staff are abused, threatened, assaulted or harmed in circumstances related to their work, including commuting to and from work" [1]. In recent years there has been an increase in recorded violence worldwide [2]. However, it is really difficult to quantify the number of violent acts, as it is often underestimated [3-6]. Healthcare personnel are found to be a greater risk of violence during working hours [4] and a review of the literature shows the need to further study in order to take prevention and treatment actions [7].

The frequency of violent episodes reaches high rates up to 87% [3]; 80% for verbal violence [8]. A violent act can take on a clinical significance as an expression of a need for care and normative as a source of danger to socially relevant interests, aspects that to date are still little explored in the literature. Many manifestations of work-related aggression and violence are disease or disability-dependent and should be considered unintentional on the part of the aggressor. Exposure to any kind of violence, in the short or long term, can lead negative effects for nurses [9], effects that can occur both in the personal and professional sphere, in addition to negative effects in economic, social and quality of care provided [10], leaving psychological sequelae that can also decrease in terms of safety, the work performance of the operators. A study conducted in Italy [4], among health workers shows that aggressions suffered by health workers is associated with psychological suffering of considerable importance. The worker assumes a more closed and detached attitude towards the patients and this compromises the therapeutic role of the relationship. In recent years, attention to this topic has produced much evidence thanks to studies investigating the incidence of episodes of violence in the workplace reported by nurses. Nurse professionals who are victims of violence may develop psycho-somatic disorders related to the adverse event, up to the burnout syndrome, as shown by another study carried out in Italy [11,12]. The nurses dedicated to the care of patients with psychiatric pathologies present, compared to their colleagues, a higher risk of experiencing violence in the workplace. Another risk factor is represented by the type of hospitalization (voluntary or involuntary), in fact some studies show that involuntary hospitalization was associated with higher rates of hospital violence [13,14]. To date, aggressive acts toward healthcare staff by caregivers, residents or relatives represents a very sensitive and often stigmatized issue [15,16]. The in-depth study on the phenomenon of workplace aggression in the Italian reality is relatively recent, all data related to local studies. Psychomotor agitation requires rapid and safe intervention. Traditional methods for the treatment of agitated patients, such as physical restraint or the forced administration of drugs, have been progressively replaced by non-coercive methods. Non-pharmacological methods of behavioral control, appear to be effective. The de-escalation appears to be the most effective technique only after an accurate knowledge of the patient, his diseases and any prodromal signs and symptoms that may indicate the onset of aggressive behavior. However, it emerges that there is a lack of adequate staff training that can ensure the correct implementation of the intervention and that can make nurses safer in the management of aggressive behavior and violent patients. The study by Mary Lavelle et al. [17], has brought to light that more than half of patients (53%) have implemented aggressive attitudes towards staff and in 60% of cases the de-escalation was successful, even if it is more complicated with subjects with a previous history of aggression, demonstrating a lack of confidence in the effectiveness of these techniques when the risk of violence is higher. The study, goes to confirm the data in the literature, for which many times nurses live violence as "normal" and this "normalization" makes it difficult to identify the severity of the problematic [18]. On the basis of the international literature examined, it is clear that there is a constant danger of aggression against health professionals who operate within psychiatric settings. To date, there are few studies in the literature conducted on professionals in the strictly psychiatric setting; there are no studies conducted on support staff in close contact with the patient; above all, there are very few studies that evaluate the psycho-physical consequences reported by them following episodes of violence suffered, which it is conceivable may affect the quality of professional services in the relationship with the patient in a circle of discomfort that has no end. Hence the need to explore this area still so little discussed.

Aggressions against nurses in psychiatric wards has been recognized as an alarming work-related problem [19]. It was noticed to be principally experienced and under-estimated, despite becoming a worldwide issue [20]. Nurses are the mostly healthcare professions at serious risk to aggression episodes [21]. For example, according to aggressions are dangerous episodes in psychiatric setting even though they have been underestimated [22]. Aggressions by patients against psychiatric nurses are widespread with an arising effect on the nurses [23]. Since nurses spend more hours than other healthcare professionals with patients, nurses suffered from both physical and verbal aggression than other healthcare professionals, respectively [24]. Literature explained what are the main inducing circumstances connected with aggressive episodes which range according to individual patients' environmental characteristics [25]. These predisposed elements include: sex, age, admission condition, marital states and diagnosis. Psychiatric nurses that experienced violent aggressions perceive themselves as unsafe, worried and afraid. In several studies [26], nurses; who experienced violence focused on types of violence, their etiologies and their related risks associated. Campbell [27] suggested that aggressions on psychiatric nurses augmented over 25% within 5-years in England, from 33,620 to 42,692. Serious physical consequences after an aggression may compromise the own healthy condition perceived by nurse and also including musculoskeletal damages and vulnerability to risky treatments [28]. In return, security

enterprises to restrain musculoskeletal damages [29-33], and physical aggression [34-36] have been improved. Additionally, despite this awareness, incidents, damages, and adverse work places endures and completely effective oppose approaches have been indefinable. For example, Nachreiner et al. [37] found no reference that nurses who trained on occupational aggression were more secure than those who did not train in this concern. In 2001, the survey, conducted by the American Nurses association, suggested that less than 20% of nurse felt themselves as "very safe" at their workplaces, 38.1% perceived themselves as scarcely informed on their work environmental potential risks [38]. Individual security strategies may not be successful without a corresponding challenge in organizational habits. On the other hand, several authors reported that safety culture is needed to improve security performance, perception and inspiration [39,40].

In this regard, many nurses experienced high levels of occupational stress in their work places. Nurses who experienced an aggressive episode maybe develop a mental health disorder, which can influence all socio-economic settings and their workers, in work performance and productivity, commitment with one's job, communication with co-professionals, physical ability and quotidian performance [41]. Moreover, mental disorders, such as depression are linked to worse disability and unproductivity conditions. In this regard, depression influences with a person's capability to perform physical professional tasks about 20% of the time and decreased cognitive function about 35% of the time [42]. Additionally, anxiety is also considered as a goal of stressful work environments and assignments, has consequences on nursing attitude in hospital units [43,44]. Therefore, mental health disorders in nurses consequential to an experienced aggressive episode may have important repercussions on nurses' health and well-being, their quality of life, job gratification, shift, productivity and absenteeism [45].

In light of what was reported in the current literature, the present study aimed to investigate if there were any associations between anxiety and depression conditions in Italian psychiatric nurses who suffered from an aggression, both verbal and physical according to their safety perception levels and then, also anxiety and depression conditions associated.

Methodology

Study design

An observational, cross sectional and multicentric study was carried out from March 2017 to December 2019 by administering an on line questionnaire in all the Italian psychiatric settings.

Participants

All Italian nurses who worked in an Italian psychiatric setting with at least 6 months of work experience were enrolled. The participation to the study was voluntary. In the first part of the questionnaire all ethical characteristics according to Helsinki declaration was explained. No form of return of the data provided has been envisaged.

The questionnaire

The "Violence against frontline National Health System Staff" questionnaire (Violence against frontline NHS staff), modifying to the Italian context [46] was considered as reference model. The first part of the questionnaire included the socio-demographic characteristics of Italian psychiatric nurses, as:

- sex, as: female and male;
- years of work experience, as until 5 years and over 6 years;
- shifts, as nurses were employed only during the morning hours (1 shift), only the morning and the evening hours (2 shifts), during the morning, the evening and the night hours (3 shifts);
- if the interviewer suffered from a verbal or a physical aggression during his/her work;
- when the incidences of aggression occurred more frequently, as during the day or overnight;
- how nurse interviewed perceived his/her safety work environments, as: low secure, mild or high secure.

Then, in the second part of the questionnaire, the anxiety condition was assessed by using the State-Trait Anxiety Inventory scales (S.T.A.Y. Y-1 and Y-2 forms) [47]. The STAY questionnaire was a self-reported questionnaire which assessed two separate dimensions of anxiety, specifically: State (Y-1 form) and Trait (Y-2 form) and each dimension contained 20 items. The State anxiety reflected the psychological and physiological transient reactions directly related to adverse conditions in a specific moment. On the other hand, the Trait anxiety indicated a trait of personality, describing individual differences related to a tendency to present state anxiety. For each dimension, a Likert scale was associated which ranged "not at all" to "very much so", for the trait anxiety factor, and from "almost never" to "almost always", for the state anxiety factor. By summing scores, a total value could range between 20 and 80. Higher score indicated a greater anxiety, both for each of the two dimensions explored. Particularly, values between 20-39 indicated the absence of anxiety; values between 40-50 indicating a slight anxiety disorder; scores ranged 51-60 as moderate anxiety and, finally, values from 61-80 indicated severe anxiety condition.

Finally, in the third part of the questionnaire, the Depression Inventory-II (BDI-II) [48] was administered. The Self-report questionnaire reported depressive severity

condition. This version of the inventory consisted of 21 items, in which four response options are presented on a scale of 0 to 3. The total score ranges from a maximum of 63 to a minimum of zero. For values between 1-10 a mood between highs and lows was considered as normal; for values 11-16 it was reported slight mood disturbances; for values 17-20 a condition of clinical depression within limits was highlighted; for values 21-30 there was a moderate depression; for values 31-40 a severe depression and for values above 40 an extreme depression was indicated [49].

Validity and Reliability

As regards the S.T.A.I. Y-1 and Y-2 forms, literature reported to the construct and current validity of the scale, as internal consistency coefficients ranging from .86 to .95 and, test-retest reliability coefficients varied from .69 to .89 [50]. Additionally, concerning the BDI-II scale, evidence suggested an excellent reliability coefficient of α = .92. Its content validity was ensured because most of its items were equivalent to the DSM V criteria for depression. Its construct validity had also been tested successfully by comparing scores with other measures for depression [51].

Data analysis

Data were collected in an Excel datasheet and subsequently processed thanks to the SPSS, IBM version 20 statistical program.

Sampling characteristics, security perception levels and also the S.T.A.Y. Y-1 and Y-2 forms and to the BDI-II scores were all considered as categorical variables and thus presented as frequencies and percentages. Then, linear regressions were performed in order to better assess how anxiety and depression conditions varied according to sampling nursing characteristics. Then, for all significant associations ($p < 0.05$), frequencies and percentages of associations were performed in order to recognize how significant associations varied.

Ethical considerations

The participation to the study, being free and voluntary, was considered as a statement of agreement, since all ethical characteristics were exposed in the presentation of the survey. All the data reported in the questionnaires were handled independently. No form of return of the data provided has been envisaged.

Results

A total of 207 Italian psychiatric nurses were recruited for this study. 58% were females and 42% were males. 30.90% worked less 5 years in a mental health facilities and 69.10% worked more than 6 years in mental health settings, respectively. 64.30% among participants were employed in 3 shifts and 82.10% of them suffered from a physical or verbal aggression. 30.40% among Italian psychiatric nurses considered their work environments as very secure, 32.40% quite secure and 7.70% little secure, too. 1.90% among nurses recorded severe trait anxiety levels and 2.90% of nurses registered severe state anxiety levels and finally, 9.20% of nurses reported extremely severe depression levels (Tab. I).

As shown in the Table II, the state-trait anxiety was significantly associated to physical or verbal aggressions suffered ($p = 0.001$) and also to security level perceptions ($p < 0.001$).

TABLE I. *Sampling characteristics (n = 207).*

Variables	n (%)
Sex:	
Female	120(58.00%)
Male	87(42.00%)
Years of work experience:	
≥ 5years	64(30.9%)
≤ 6 years	143(69.1%)
Shifts:	
1 Shift	34 (16.4%)
2 Shifts	40 (19.3%)
3 Shifts	133 (64.3%)
Verbal and physical assaults suffered:	
No	37 (17.9%)
Yes	170 (82.1%)
When did the incidences of aggression occur:	183 (88.4%)
During the day	24 (11.6%)
Overnight	
Security level perceived:	
Low	16 (7.7%)
Mild	67 (32.4%)
High	63 (30.4%)
State-Trait Anxiety Inventory-Y1:	
Absence	110 (53.1%)
Slight	59 (28.5%)
Moderate	34 (16.4%)
Severe	4 (1.9%)
State-Trait Anxiety Inventory-Y2:	
Absence	110 (53.1%)
Slight	62 (30.00%)
Moderate	29 (14.00%)
Severe	6 (2.9%)
Beck Depression Inventory-II (BDI-II):	
Normal	129 (62.3%)
Mild disorders	29 (14%)
To the limits	14 (6.8%)
Moderate	9 (4.3%)
Severe	7 (3.4%)
Extremely severe	19 (9.2%)

TABLE II. *Associations between State Anxiety Inventory (Y1) and aggressions' conditions.*

Variables	Non-standardized coefficients		Standardized coefficients	T	P-value	CI 95% per B	
	B	SE	Beta			Minimum	Maximum
Sex	.094	.111	.057	.845	.399	-.125	0.126
Work experience	.148	.118	.084	1.259	.209	-.084	0.115
When did the incidences of aggression occur	-.198	.145	-.109	-1.368	.173	-.484	0.122
Shifts	-.050	.088	-.047	-.567	.571	-.224	-0.023
Verbal and physical assaults suffered	.494	.147	.232	3.350	.001*	.203	-0.067
When did the incidences of aggression occur	.011	.162	.004	.067	.947	-.308	0.093
Security level perceived	-.483	.088	-.353	-5.516	.000*	-.656	0.189

**p < .005 is statistically significant.*

TABLE III. *Associations between Trait Anxiety Inventory (Y2) and aggressions' conditions.*

Variables	Non-standardized coefficients		Standardized coefficients	T	P-value	CI 95% per B	
	B	SE	Beta			Minimum	Maximum
Sex	.168	.119	.101	1.411	.160	-.067	.402
Work experience	.034	.126	.019	.272	.786	-.215	.284
When did the incidences of aggression occur	.067	.156	.036	.430	.668	-.240	.374
Shifts	-.019	.095	-.017	-.197	.844	-.205	.168
Verbal and physical assaults suffered	.325	.158	.151	2.055	.041*	.013	.637
When did the incidences of aggression occur	-.066	.173	-.026	-.378	.706	-.408	.276
Security level perceived	-.368	.094	-.267	-3.912	.000*	-.553	-.182

**p < .005 is statistically significant.*

As shown in the Table III, the state-trait anxiety was significantly associated to physical or verbal aggressions suffered ($p = 0.041$) and also to security level perceptions ($p < 0.001$).

As shown in the Table IV, the depression condition was significantly associated to physical or verbal aggressions suffered ($p < 0.001$) and also to security level perceptions ($p < 0.001$).

As regards anxiety and depression conditions related to physical and verbal aggressions suffered from Italian psychiatric nurses, data suggested more prevalence of anxiety and depression in nurses who suffered an aggression (Tab. V). Finally, as regards security level perceptions and anxiety and depression conditions, data reported that nurses who perceived a less safety working environment reported also higher levels in anxiety and depression conditions, too (Tab. VI).

Discussion

The present study aimed to investigate if there were any associations between anxiety and depression con-

TABLE IV. *Associations between Beck Depression Inventory-II (BDI-II) and aggressions' conditions.*

Variables	Non-standardized coefficients		Standardized coefficients	T	P-value	CI 95% per B	
	B	SE	Beta			Minimum	Maximum
Sex	-.204	.223	-.062	-.919	.359	-.643	.234
Work experience	-.031	.237	-.009	-.131	.896	-.498	.436
When did the incidences of aggression occur	.341	.291	.094	1.172	.243	-.233	.915
Shifts	.080	.177	.037	.452	.651	-.269	.429
Verbal and physical assaults suffered	1.433	.296	.338	4.841	> 0.001*	.849	2.017
When did the incidences of aggression occur	-.096	.325	-.019	-.297	.767	-.737	.544
Security level perceived	-.657	.176	-.242	-3.737	> 0.001*	-1.004	-.310

**p < .005 is statistically significant.*

TABLE V. *How varied anxiety and depression conditions in relation to physical or verbal aggression suffered.*

Psychological condition	Physical or verbal aggression suffered	
	Yes n;%	No n;%
State-Trait Anxiety Inventory-Y1:		
Absence	100 (48.31%)	10 (4.83%)
Slight	47 (22.71%)	12 (5.80%)
Moderate	20 (9.66%)	14 (6.76%)
Severe	3 (1.45%)	1 (.48%)
State-Trait Anxiety Inventory-Y2:		
Absence	97 (46.86%)	13 (6.28%)
Slight	49 (23.67%)	13 (6.28%)
Moderate	19 (9.18%)	10 (4.83%)
Severe	5 (2.41%)	1 (.48%)
Beck Depression Inventory-II (BDI-II):		
Normal	113 (54.59%)	16 (7.73%)
Mild disorders	27 (13.04%)	2 (.97%)
To the limits	12 (5.80%)	2 (.97%)
Moderate	8 (3.86%)	1 (.48%)
Severe	3 (1.45%)	4 (1.93%)
Extremely severe	7 (3.38%)	12 (5.80%)

ditions in Italian psychiatric nurses who suffered from an aggression, both verbal and physical according to their safety perception levels and then, also anxiety and depression conditions associated. Our findings suggested that psychiatric nurses who perceived their work environments more secure, less reported an anxiety or depression disorder, too. In this regard, previous literature was in agreement with the current findings, by reporting that work environmental conditions were one of the most essential predictors of nurse goals, including their mental health and wellbeing conditions [52-55]. For example, a meta-analysis of 17 studies focusing on data from 2,677 hospitals in 22 different countries highlighted that unsatisfactory nursing workplaces were connected to mediocre patient and nurse consequences, as well as burnout [54]. Other studies associated unhealthy nurs-

TABLE VI. *How varied anxiety and depression conditions according to security levels perceptions in the nursing work environments.*

Anxiety & depression/Security	Security levels perceptions		
	Low	Mild	High
State-Trait Anxiety Inventory-Y1:			
Absence	2 (.97%)	53 (25.60%)	55 (26.57%)
Slight	6 (2.90%)	38 (18.36%)	15 (7.25%)
Moderate	7 (3.38%)	23 (11.11%)	4 (1.93%)
Severe	1 (.48%)	3 (1.45%)	0 (0%)
State-Trait Anxiety Inventory-Y2:			
Absence	4 (1.93%)	54 (26.09%)	52 (25.12%)
Slight	7 (3.38%)	39 (18.84%)	16 (7.73%)
Moderate	4 (1.93%)	19 (9.18%)	6 (2.90%)
Severe	1 (.48%)	5 (2.42%)	0 (0%)
Beck Depression Inventory-II (BDI-II):			
Normal	69 (2.90%)	68 (32.85%)	55 (26.57%)
Mild disorders	0 (0%)	19 (9.18%)	10 (4.83%)
To the limits	1 (.48%)	12 (5.80%)	1 (.48%)
Moderate	1 (.48%)	6 (2.90%)	2 (.97%)
Severe	1 (.48%)	4 (1.93%)	2 (.97%)
Extremely severe	7 (3.38%)	8 (3.86%)	4 (1.93%)

ing workplaces to bad mental health, particularly anxiety and insomnia conditions [56,57]. Additionally, literature evidenced a significant association between the nursing workplace and perceived patient security [58]. In fact, heavy workload would decrease the quality of patients' treatment and lead to negative patients' outcomes [59, 60]. To prevent this inconvenient, an effective arrangement by nurses in hospital management would allow them to make judgements linked to patient security, which could improve positive patient outcomes and vice versa. In the same way, previous researches suggested that nurses' participation and promotion are key points relating to patient security [60-62]. Therefore, evidence highlighted that the registered levels of mental health in psychiatric nurses issue from several stressors usually present in work actions, such as: aggression, damages, forceful incidents, as well as home damages and family grieving episodes, were connected with work-related tension and with low mental health in nurses [63]. In this regard the present findings are in agreement with current literature by explaining that work environmental aggression could have significant effects on both the physical and mental health of the victims, as nurses [64]. Therefore, people who experienced depressive and anxious symptomatology that is in agreement with literature focusing on the workplace aggression often evolves in depression and anxiety disturbances [65-68]. Furthermore, exposure to aggression provokes tension, worry by both reducing self-confidence and self-esteem [69] and increasing the risk of anxiety and depression [70], as showing in this study.

Limitations of the study

This study was similar to other designed cross-sectional studies where some limitations needed to be considered. The nature of the design mentioned has allowed for the collection of data, the results of which were based on self-reported information provided by nurses who may have feelings related to prejudice or reminiscences of the aggressions suffered. Furthermore, the questions were freely interpreted by the interviewees. Additionally, the number of interviewees, compared to the total number of psychiatric nurses present on the Italian territory also limited the generalizability of the study results. However, although the study presented some limitations, we believed it produced important empirical data that would be the basis for future research with a larger number of participants.

Conclusions

A safe nursing work environment has gained great attention because it was an essential element that influenced physical, psychological, and social health conditions. In fact, working in unsafe conditions associated to high working load, lack of staff and resources, unprofessional communication, and lack of engagement in decision-making policy in psychiatric settings would negatively affect the nurses' health and safety perception levels, respectively.

In this scenario, management positions should improve researches in supporting nurses' rights to take responsibility for their health and to highlight poor work environment conditions, as well as: disruption in nursing

self-worth, increasing the role ambiguity, which in turn might lead to low-quality of life among nurses, unsafety work places.

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All Authors have read and agreed to the published version of the manuscript.

Conflict of interest

The Authors declare no conflict of interest.

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Author contributions

E.V.: Conceptualization, Methodology, Software, Validation, Formal analysis, Data Curation, Writing - Original Draft, Writing - Review & Editing

R.L.: Writing - Original Draft, Writing - Review & Editing

A.C.: Investigation and Resources

L.C.: Review & Editing, Supervision

Ethical consideration

The research was conducted ethically, with all study procedures being performed in accordance with the requirements of the World Medical Association's Declaration of Helsinki.

Written informed consent was obtained from each participant for study participation and data publication.

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