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Founders: Giovanni B. Cassano, Paolo Pancheri

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Books:
Kaplan HI, Sadock BJ. *Comprehensive textbook of Psychiatry.* Baltimore: Williams & Wilkins 1985.
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Cloninger CR. *Establishment of diagnostic validity in psychiatric illness: Robins and Guze's method revisited.* In: Robins LN, Barret JE, editors. *The validity of psychiatric diagnosis.* New York: Raven Press 1989, p.74-85.

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Notes to the text, indicated by asterisks or similar symbols, should appear at the bottom of the relevant page.

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Il Giornale di Psicopatologia pubblica contributi redatti in forma di articoli di argomento monografico, news, articoli di aggiornamento in Psicofarmacologia clinica, forum, relativi a problemi di natura psichiatrica. I contributi devono essere inediti, non sottoposti contemporaneamente ad altra rivista, ed il loro contenuto conforme alla legislazione vigente in materia di etica della ricerca.
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2. **summary** (in inglese) (il summary deve essere costituito da circa 3000 battute (spazi inclusi). È richiesta la suddivisione nelle seguenti 4 sezioni: Objectives, Methods, Results, Conclusions);
3. **key words** (in inglese);
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Nella *prima pagina* del file devono comparire anche i nomi degli Autori e l'Istituto o Ente di appartenenza; la rubrica cui si intende destinare il lavoro (decisione che è comunque subordinata al giudizio del Direttore); il nome, l'indirizzo, il recapito telefonico e l'indirizzo e-mail dell'Autore cui sono destinate la corrispondenza e le bozze.

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3. Articoli brevi: questo spazio è riservato a brevi comunicazioni relative a dati clinico-sperimentali e a dati preliminari di ricerche in corso di particolare interesse. Il testo non dovrà superare i 20.000 caratteri spazi inclusi comprese tabelle e/o figure e una decina di voci bibliografiche.

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Editorial

Original articles

Assessment and instruments in psychopathology

Costituzione SOPSI GRUPPO GIOVANI e relativo Manifesto

Nel corso della diciannovesima edizione del Congresso della Società Italiana di Psicopatologia (SOPSI), svoltosi a Milano dal 23 al 26 febbraio 2015, veniva istituita il 24 febbraio 2015 da parte del Presidente della Società prof. A. Carlo Altamura, per conto del Direttivo SOPSI, la sezione denominata "SOPSI GRUPPO GIOVANI" (SOPSI-GG), avente come rappresentante del Direttivo stesso in tale area la prof.ssa Silvana Galderisi. Nel corso dell'evento veniva proposta dal prof. Altamura e dalla prof.ssa Galderisi una serie preliminare di nominativi di medici specializzandi, dottorandi e specialisti in Psichiatria e nell'area delle Neuroscienze, di età anagrafica non superiore al 40° anno, che si erano distinti nell'attività della ricerca clinica e scientifica. La lista dei nomi, qui in seguito riportata, voleva costituire unicamente una semplice formazione di lavoro iniziale, caratterizzata da una buona rappresentanza sul territorio nazionale, da ampliarsi, successivamente, attraverso l'inclusione di nuovi membri con caratteristiche compatibili con quelle richieste dal gruppo.
Nel corso della presentazione venivano delineati i primi obiettivi per la SOPSI-GG, individuati dal Direttivo, nella presentazione di Simposi nel corso delle edizioni congressuali annuali della SOPSI, lo sviluppo di progetti di ricerca così come di altre iniziative volte a promuovere l'interazione tra i membri della SOPSI-GG e il Direttivo SOPSI.
Dietro richiesta della prof.ssa Galderisi, al termine dell'incontro veniva svolta una prima assemblea da parte dei presenti che portava all'individuazione di tre delegati della SOPSI-GG, con mandato di un anno, nelle persone di Bernardo Dell'Osso (Milano), Annabella Di Giorgio (Bari) e Giorgio Di Lorenzo (Roma). Veniva, altresì, deciso nel corso dell'assemblea la programmazione di un breve Manifesto che raccogliesse i principali obiettivi del nuovo gruppo. Dopo successiva consultazione telematica dei membri appartenenti alla SOPSI-GG veniva redatto il seguente documento:

Manifesto SOPSI GRUPPO GIOVANI

La SOPSI GRUPPO GIOVANI (SOPSI-GG), creata nel corso della 19ª Edizione del Congresso della SOPSI a Milano è formata da medici specializzandi e specialisti in Psichiatria, dottorandi e dottorati nell'area della Psichiatria e delle Neuroscienze che abbiano compiuto non oltre il 40° anno di età e che presentino uno specifico profilo d'interesse nel campo della ricerca clinica e delle neuroscienze, in linea con le attività della SOPSI. Unitamente ai primi componenti individuati dal Direttivo SOPSI, possono fare domanda di partecipazione alla SOPSI-GG tutti coloro che siano regolarmente iscritti alla SOPSI e che presentino i suddetti requisiti, previo invio di domanda e C.V. ai delegati nazionali. La partecipazione alla SOPSI-GG è gratuita.
La SOPSI-GG si consulta attraverso 3 riunioni telematiche, una per quadrimestre, nel corso dell'anno e nel corso dell'assemblea annuale, durante il Congresso SOPSI, elegge i 3 delegati nazionali con un mandato di un anno rinnovabile al massimo per un altro anno. La SOPSI-GG comunica regolarmente al rappresentante del Direttivo SOPSI le minute delle riunioni telematiche, le proposte e le iniziative prese nel corso dell'assemblea nazionale.
In specifico, gli obiettivi che il gruppo si propone sono:

- migliorare la comunicazione tra gli organi direttivi della Società e i giovani psichiatri;
- promuovere iniziative volte a individuare i principali bisogni formativi dei giovani psichiatri;
- favorire l'individuazione e la discussione di tematiche specifiche della formazione continua che risultino di particolare utilità nei primi anni della carriera professionale;
- promuovere forme innovative di formazione (e-learning) e più in generale di comunicazione;
- promuovere la partecipazione dei giovani ricercatori alle edizioni congressuali della SOPSI attraverso iniziative promozionali (incentivi, premi e riconoscimenti) volte a facilitare l'iscrizione dei membri alla Società e al Congresso SOPSI, l'invio di abstract congressuali e l'invio di contributi al Giornale della Società;
- organizzare proposte di Simposio SOPSI-GG da proporre al Direttivo sia in relazione alle edizioni congressuali annuali della SOPSI che al di fuori di esse;
- promuovere l'interazione dei giovani ricercatori sul territorio nazionale;
- favorire lo sviluppo di progetti di ricerca per richieste di finanziamenti nazionali e internazionali da svolgersi sotto l'egida della SOPSI.

Milano, 26 Febbraio 2015

Bernardo Dell'Osso[1], Annabella Di Giorgio[1], Giorgio Di Lorenzo[1], Silvana Galderisi[2]
[1] Delegati SOPSI-GG; [2] Coordinatrice SOPSI-GG per il Direttivo

Composizione SOPSI-GG:

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Early hyperprolactinaemia in acute psychiatric inpatients: a cross-sectional study

Iperprolattinemia precoce in pazienti ricoverati in SPDC: uno studio trasversale

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Summary

Objectives

Hyperprolactinaemia is an important adverse effect of many drugs. Few naturalistic studies have compared rates of hyperprolactinaemia across psychotropic medications, especially antidepressants. In this cross-sectional study, we aimed to: 1) assess the prevalence and severity of hyperprolactinaemia in a sample of individuals with severe acute psychiatric illnesses, and 2) identify the demographic and clinical factors that might influence levels of prolactinaemia.

Methods

225 individuals were consecutively recruited. Individuals with any medical conditions and other not psychopharmacological drugs known to induce hyperprolactinemia were excluded. Blood samples were collected prior to breakfast and medication administration. Prolactin levels were measured by an electrochemiluminescent immunoassay.

Results

About 2 in 3 individuals treated with antipsychotics had hyperprolactinaemia. Treatment with antipsychotics, particularly risperidone ($p = 0.002$), and young age ($p<0.005$) were associated with hyperprolactinaemia. We did not find any association between antidepressants and hyperprolactinaemia ($p = 0.07$).

Conclusions

Hyperprolactinaemia is a common and early phenomenon among individuals treated for acute psychiatric disorders, especially in younger patients and women.

Key words

Early hyperprolactinaemia • Psychotropic medications • Psychiatric disorders

Introduction

Hyperprolactinaemia (HP) refers to an elevation of the level of the hormone prolactin (PRL) in the blood and is a frequent adverse effect of psychopharmacological treatment. HP may have clinical consequences that are more detectable in the short term (reproductive and sexual dysfunction) than in the long term (osteoporosis, weight gain, cardiovascular disorders and an increased risk of breast or endometrial cancer) [1 2]. Antipsychotics which are known to be the most common cause of pharmacological HP have different propensities to induce HP [3 4]. Several mechanisms by which antipsychotics cause HP have been proposed [5]: 1) strong binding to D_2 receptors (expressed by K-off) [6]; 2) $5HT_2/D_2$ receptor antagonism, which exerts a balanced effect on PRL release [7]; 3) permeation of the haematoencephalic barrier [8]; and 4) partial agonism of D_2 receptors [9].
Additionally, antidepressants, mainly tricyclics, monoamine oxidase inhibitors (MAOIs) and selective serotonin reuptake inhibitors (SSRIs), may cause HP although to a lesser degree. Most studies have focused on these three antidepressant categories [10 4]. Pharmacodynamic mechanisms such as serotoninergic receptor modulation [11] and GABAergic stimulation [12] have been suggested.
Few naturalistic studies have compared the rates of HP across psychotropic medications. Most studies have examined antipsychotics [13] whereas there are few and weak data on antidepressants which are from small samples or case reports/series [10]. The results are also difficult to compare because of methodological differences in the units of measurement of PRL, definition of HP (categorical or continuous, different cut-offs), sampling, sample size and a lack of information about pharmacological treatment (add-on medications, dosages) [14]. Given these assumptions, in the present study, we sought to: 1) measure the prevalence and severity of HP in a sample of acute psychiatric patients, and 2) identify the demographic and clinical factors that might influence the elevation of PRL levels.

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Tel. +39 0438 668362 • Fax +39 0438 663728 • E-mail: tommaso.toffanin@ulss7.it

Methods

Study population

Between 2010 and 2011, 225 DSM-IV-diagnosed patients were included in this cross-sectional study. The participants were consecutively recruited in the Psychiatric Unit at the University-Hospital of Padua, Italy. The inclusion criteria were: i) age of 18 years old or greater and ii) same duration of treatment (1 week ± 1 day) with antipsychotics, antidepressants or mood stabilizers, either in monotherapy or in combination. The patients were excluded if they had medical conditions or were receiving medications known to cause HP.

Written informed consent was obtained from all patients, according to the local institutional policy. Medications were administered by nursing hospital staff to ensure adherence.

To compare dosages across different antipsychotics, daily dosages were transformed into haloperidol equivalent doses [15]. All patients received a routine laboratory assessment (including PRL serum level testing). Blood samples were collected from the patients between 8:00 a.m. and 8:30 a.m., prior to breakfast and medication administration. PRL levels were measured by an electrochemiluminescent immunoassay (ECLIA Cobas 6000).

Our laboratory set serum PRL above the upper limit of normal to 25 ng/mL for women and 15 ng/mL for men. The degree of HP was also considered in terms of severity (> 47 ng/mL), based on other studies [13 16].

Statistical analysis

The Kolmogorov-Smirnov method was used to test for the normality of variables. A Student's t-test and Mann-Whitney U test were used for normally distributed and ordinal variables, respectively. For categorical variables, a chi square test was used. To identify the truly independent risk factors for the presence of HP, logistic regression was performed, and variables significantly related to the presence of HP in the univariate analyses were included in the model. The significance level was set at $p<0.05$.

Results

Demographic and clinical characteristics

The characteristics of the sample are presented in Table I. Most patients (56.8%) had PRL blood levels above the upper limit of normal (15 ng/mL for men and 25 ng/mL for women). The mean PRL level was 32.7 ng/mL (SD ± 31.9; range 0.6-183.8).

Univariate analysis

HP was significantly more prevalent in younger (mean age 44.4 ± 16.2 years) than in older (52.45 ± 16.1 years) individuals ($p < 0.005$), in men (73%, N = 75) than in

TABLE I.
Demographic and clinical characteristics of patients (N = 225).
Caratteristiche demografiche e cliniche dei pazienti (N = 225).

	N (%)	Mean ± SD
Gender		
Men	102 (45.4)	
Women	123 (54.7)	
Age (years)		
Men		44.4 ± 16.2
Women		50.6 ± 15.5
Menopausal status		
Premenopausal	64 (52)	
Postmenopausal	59 (48)	
Diagnoses		
Psychotic Disorders	121 (53.8)	
Depressive Disorders	47 (20.9)	
Bipolar Disorders	32 (14.2)	
Personality Disorders	18 (8)	
Others Disorders	7 (3.1)	
Duration of illness (years)		14.6 ± 3.5
Medications		
APs	167 (74.2)	
FGAs	31 (13.8)	
Haloperidol	17 (7.6)	
Perphenazine	6 (2.7)	
Promazine	8 (3.6)	
SGAs	119 (52.9)	
Olanzapine	36 (16)	
Risperidone	33 (14,7)	
Quetiapine	28 (12.4)	
Aripiprazole	10 (4.4)	
Clozapine	12 (5.3)	
2 APs (FGA + SGA)	17 (7.5)	4.98 ± 3.03
APs dosage (mg/day)		
ADs	70 (31.1)	
SSRIs	40 (17.8)	
SNRIs	24 (10.7)	
Other ADs	6 (2.7)	
APs + ADs	43 (19.1)	
MSs	81 (36)	
Lithium	15 (6.7)	
Valproate	60 (26.7)	
Other MSs	6 (2.7)	
Prolactin level (ng/mL)		32.7 ± 31.9
Range		(0,6 – 183,8)
Hyperprolactinemia	128 (56.8)	
Men (> 15 ng/mL)	75 (33.3)	
Women (> 25 ng/mL)	53 (23.5)	
HP severity	≤ 47 ng/mL	> 47 ng/ml
All	83	45
Men	61 (81,3%)	14 (18,7%)
Women	22 (41,5%)	31 (58,5%)

women (43%, N = 53) ($p < 0.005$) and in premenopausal (53%, N = 34) than in postmenopausal (32%, N = 19) women ($p = 0.020$). Among women, 58% (N = 31) had PRL levels above 47 ng/mL ($p < 0.005$). HP was significantly more prevalent in patients with diagnosis of psychosis (71.9%) ($p < 0.005$) and in individuals treated with antipsychotics (65%, N = 108) ($p < 0.005$). HP was also associated with a higher daily antipsychotic dose (mean haloperidol equivalent daily dose 5.33 ± 3.05 mg/day vs. 4.33 ± 39 mg/day, $p = 0.02$). When the severity of HP was considered, women showed significantly higher levels of HP than men ($p < 0.005$).

Other variables were not associated with HP (particularly, the combination of two antipsychotics or one antipsychotic and antidepressants; $p = 0.34$).

Prevalence and degree of HP according to the type of single antipsychotic are shown in Table II. Risperidone showed the highest prevalence of HP (90.9%) ($p = 0.002$), and 16 of 30 risperidone-medicated patients showed PRL levels above 47 ng/mL ($p < 0.03$). Among other second generation antipsychotics (SGAs), HP was under 47 ng/mL in the vast majority of cases. The combination of antipsychotics and antidepressants/mood stabilisers was also not significantly associated with HP ($p = 0.07$).

We found HP in 20 patients not treated with antipsychotics; only two of 20 cases were treated with antidepressants.

Multivariate analysis

Variables significantly related to HP in univariate analysis (age, gender, diagnosis and antipsychotic treatment) were used as independent variables in a multivariate logistic regression. All variables except diagnosis were significantly associated with HP, and the regression function predicted 71% (95% CI 65-77%) of all cases of HP.

Discussion

In our sample, the overall prevalence rate of HP was high (57%), and was even higher among patients treated with antipsychotics (65%). Our rates were similar to those values reported in previous studies, in which HP was present in 28% [2] to 69% [17] of patients on antipsychotic treatment.

Younger age was associated with HP for both genders. This result is frequently reported in the literature [18]. We found higher rates of HP in men than in women. This result is not in accordance with the findings of other studies which showed higher rates of HP among women [19,20]. This discrepancy may be related to different laboratory criteria for defining HP and the different duration of treatment.

When the severity of HP was considered, women presented a more severe degree of HP, in agreement with the results of other studies [21].

Our study confirmed that HP was more prevalent in premenopausal than in postmenopausal women, in accordance with the findings of other studies [18]. In women, reproductive age has been associated with a more pronounced risk of HP due to oestrogens having an indirect stimulating effect on PRL release by inhibiting hypothalamic dopamine synthesis and a reduction in the number of pituitary D_2 receptors [22].

Our study confirmed the strong association between HP and the use of antipsychotics [4,23]. We did not ob-

TABLE II.
The prevalence of hyperprolactinaemia according to the type of pharmacological treatment. *La prevalenza dell'iperprolattinemia a seconda del tipo di trattamento farmacologico.*

Drug	HP (>15/25 ng/mL)		HP (≤ 47 ng/mL)		HP (> 47 ng/mL)	
	N	%	N	%	N	%
APs	108	64.7	70	64.8	38	35.2
FGA monotherapy	22	70.9	17	77.3	5	22.7
SGA monotherapy	73	61,3	45	61.6	28	38,4
Risperidone	30	90,9	14	46.7	16	53.3
Olanzapine	22	61.1	14	63.6	8	36.4
Quetiapine	10	35.7	7	70	3	30
Clozapine	7	58.3	7	100		
Aripiprazole	4	40	4	100	-	-
2 APs (FGAs + SGAs)	13	76.4	8	61.5	5	31.5
MSs and/or ADs	20	34.5	13	65	7	35

HP: hyperprolactinemia; APs: Antipsychotics; FGAs: First Generation Antipsychotics; SGAs: Second Generation Antipsychotics; MSs: mood stabilisers; ADs: antidepressants.

serve significant differences when antipsychotics were administered in monotherapy or in combination with another antipsychotics or antidepressants. We also found that a higher dosage may exert an influence on elevating PRL levels, consistent with the findings of previous studies [17].

It is noteworthy that the association of first-generation antipsychotics (FGAs) with high rates of HP has been confirmed [17 21]. Olanzapine, clozapine, aripiprazole and quetiapine were also associated with HP, even though these drugs have been known to induce only transient and milder PRL elevation by different pharmacodynamic properties [24 25]. Aripiprazole, can even reduce HP [26]. Risperidone was confirmed to be the most PRL-elevating medication [14 16]. This drug has been reported to induce an early and persistent rise in PRL levels, even if tolerance occurs in the long term [27].

Interestingly, we did not find any association between HP and antidepressants. This result confirms that antidepressants may exert only an occasional PRL-elevating effect [10]. Out of 128 subjects with HP, 20 were not treated with antipsychotics.

These HP patients were taking mostly mood stabilisers and antidepressants in only two cases. This result may be explained by other, unmeasured factors such as recent antipsychotics which were mostly not available for retrospective quantification, hospitalisation or environmental stress. In fact, stress is a condition known to induce HP [3 23]. Further studies may include tools such as rating scales to measure these factors.

Lastly, in the present study, detection of HP was performed by PRL sampling after one week of pharmacological treatment, regardless of clinical symptoms. Our results are consistent with the findings of previous naturalistic cross-sectional studies that used different (mostly longer) times for the stabilisation of pharmacological treatment [19 28].

Clinical guidelines do not provide precise recommendations on measuring PRL which is suggested only in the presence of clinical symptoms [29 30]. Our study seems to indicate that systematic and early examination of PRL serum levels might be a preliminary tool to identify HP and to more promptly manage emergent HP side effects in acutely treated patients.

Conclusions

These preliminary findings suggest that during the early stage of pharmacological treatment HP is very frequent in patients who are younger, women of reproductive age and undergoing treatment with risperidone. Future prospective studies examining these factors are needed to evaluate the causal relationship with HP and its clinical symptoms in both the short and long terms.

Conflict of interests

None.

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Parental alienation syndrome or alienating parental relational behaviour disorder: a critical overview

Sindrome da alienazione parentale o disturbo del comportamento relazionale genitoriale di tipo alienante: un'overview critica

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Summary

Objective
Parental alienation is very common in conflictual separations and is a serious problem in most parts of the world. In 50% of separations and in one-third of divorces a child under 18 is involved. One of the major problems in these cases is when children reject a parent after divorce. In conflictual separations a real psychopathology, defined as parental alienation syndrome (PAS) in 1985, can develop. In recent years, a growing interest in this syndrome has been seen in the international scientific community: several studies have been carried out and the necessity for a more accurate definition of PAS has been considered beneficial because courts, scientific and clinical practice are interested in this syndrome. In order to understand parental alienation better, our investigation aims to identify which findings in published studies may be useful to clinical practice involving both parents and children.

Methods
Our study systematically reviewed all publications in the MEDLINE/PubMed database searching for the terms "parental alienation", "parental alienation syndrome", or "parental alienation disease" as keywords. We included studies and books that were published online between 1985 and 2015, included original data or reviews and involved assessment and/or diagnosis and/or treatment of PAS. This assessment will reveal strengths and weaknesses in the current PAS literature; moreover, we present suggestions for improving the refinement of the literature.

Results
A total of 28 articles and books were appropriate for this review. The studies included raised many fundamental questions such as the scientific validity of PAS, the proposal of specific diagnostic criteria and the importance of an accurate diagnosis. Findings from studies that met inclusion criteria in our review are presented, suggesting new clinical perspectives and raising new questions concerning assessment and treatment.

Conclusion
The theme of parental alienation is currently the subject of important research and debate. Based on the research carried out, we could state that parent alienation does not correspond to a "syndrome" or a specific individual psychic "disorder". It can better defined as a dysfunctional family relation model determined by the excluding or "alienating" parent, the excluded or "alienated" parent and the child, each member of this triad with his/her own responsibilities and contribution. The explanation of this disorder has its own validity, but thorough research to clarify its features, (e.g. duration and intensity of symptoms) should be conducted, otherwise it could be instrumentally used in litigations. Further systematic and large-scale studies of parental alienation are needed that take into account the issues discussed and proper objective diagnostic criteria should be defined for scrupulous diagnosis and valid treatment.

Key words
Alienation • parental alienation • denigration • parent-child relational problems

Introduction

Parental Alienation is very common in conflictual separations and is a serious problem in most parts of the world. Nearly half (48.7%) of separations and one-third (33.1%) of divorces concern marriages with at least one child under 18. The number of minor children who were placed in foster care in 2012 amounted to 65,064 in separations and 22,653 in divorces. In separations, 54.5% of children in foster care were under 11 years of age; 20% of cases were court divorces, and the legal dispute usually involved child custody [1]. One of the major problems in these cases is when children reject a parent after divorce [2]. In conflictual separations, a real psychopathology, defined as parental alienation syndrome (PAS) in 1985, can develop [3]. In recent years, a growing interest in this subject has been seen in the international scientific community: several studies have been carried out and the necessity for a more accurate definition of PAS has been considered because

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courts, scientific and clinical practice are interested in this syndrome. PAS is the subject of a heated debate in both the scientific and legal fields. In particular, while attention is paid to the reliability and scientific validity of the syndrome, there is also the risk of the disorder being exploited in legal disputes or in the media.
In order to understand parental alienation better, our investigation aims to identify which findings in published studies may be useful to clinical practice with both parents and children.

Method

This article provides an up-to-date critical review of scientific articles on parental alienation. We will begin by reviewing the criteria for its definition, postulated pathogenesis and subtypes in order to lay the foundation for understanding PAS; next, we will delineate how PAS is placed in the psychiatric classification, including its relationship with official diagnostic categories of psychopathology.
Our study systematically reviewed all publications in the MEDLINE/PubMed database searching for the terms "parental alienation", "parental alienation syndrome", or "parental alienation disease" as keywords. We included studies and books that: (i) were published online between 1985 and 2015, (ii) included original data or reviews and (iii) were concerned with assessment and/or diagnosis and/or treatment of PAS. Consequently, we excluded publications that concerned child maltreatment or abuse not acknowledged as PAS. In the end, we selected relevant studies according to the inclusion criteria specified above. A total of 28 articles and books were appropriate for this review. This assessment will reveal strengths and weaknesses in the current PAS literature; moreover, we present suggestions for improving the refinement of the literature.

PAS: definition

PAS was defined for the first time in 1985 by Richard Gardner as a disorder that primarily arises in the context of court divorces that involve a dispute over the custody of the children. Its primary manifestation is the unjustified campaign of denigration by the child of one parent. In the words of the author, PAS can be described as "a childhood disorder, which arises almost exclusively in the context of child custody disputes. Its primary manifestation is the child's campaign of denigration against a parent that results from the combination of a parent's programming (brain washing) indoctrinations and the child's own contributions to the vilification of the target parent" [3 4].
More recently Bernet defined PAS as PAD, i.e. parental alienation disorder. "The essential feature of parental alienation is that the child – usually over a very contentious divorce – stipulates an alliance with one of the parents (the preferred parent) and rejects the relationship with the other parent (the rejected parent) without legitimate justification" (Fig. 1) [5 6].
This definition was later clarified by Cavedon and Magro in 2010, who defined the following criteria:

1. the child is allied with one of the parents and rejects the relationship with the other parent without any legitimate justification, usually in the context of a conflictual separation that can involve a child custody dispute;
2. the child shows the following behaviour: a) constant rejection of a parent that can become a real campaign of denigration; b) use of futile, weak or absurd rationalisations, in order to criticise the rejected parent persistently;
3. the child shows at least two of the following behaviours and attitudes: a) lack of ambivalence; b) phenomenon of the independent thinker; c) automatic support of the alienating parent; d) no guilty feelings for not respecting and not accepting the feelings of the alienated parent; e) presence of borrowed scenarios; f) spread of animosity towards the alienated parent's extended family [7].

PAS: Features

Gardner described PAS as a preoccupation by the child with criticism and deprecation of a parent, and stated that PAS occurs when, in the context of child custody disputes, one parent deliberately or unconsciously attempts to alienate a child from the other parent [4 8 9].
The author described eight symptoms:
Campaign of denigration: It involves the active participation of the child to the disparaging campaign against the target spouse, without scolding or punishment by the alienated parent.
Weak, frivolous, and absurd rationalisations for the child's criticism of the targeted parent: When they are asked to report specific incidences or explicit examples which support their accusations, they are unable to document credible, significant, or factual examples.
Lack of ambivalence: very likely, PAS children will report a long list of deficits about their targeted parent while minimising or refuting any positive attribute or redeeming quality of that parent.
The independent thinker phenomena: the child claims to be independent in making decisions and judgments about the alienated parent, rejecting accusations of being a weak and passive person.
Reflexive support of the alienating parent: the phenomenon of the ''identification with the aggressor" can be connected to this. The child being weak supports the alienating parent because of his/her power.

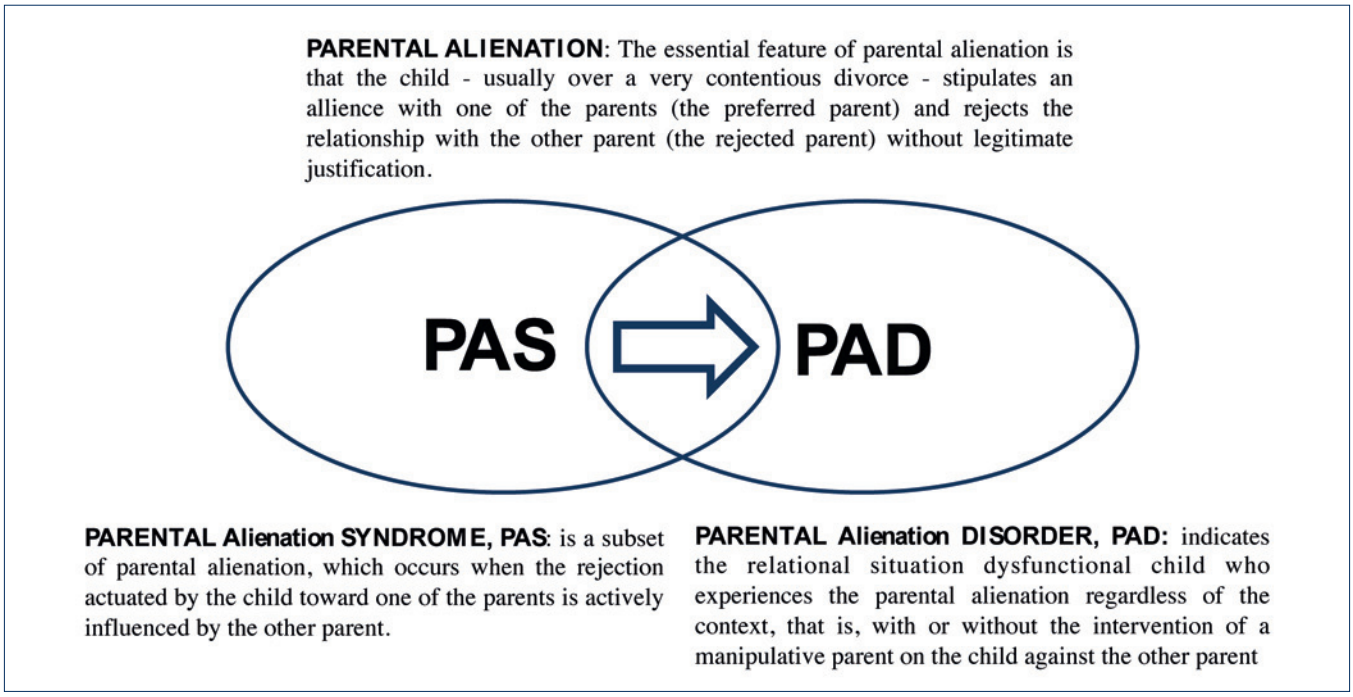

FIGURE 1.
Definitions according to Bernet, 2008 [6]. *Definizioni secondo Bernet, 2008* [6].

Absence of guilt over cruelty to or exploitation of the alienated parent: Child victims of the alienating parent's campaign of denigration do not feel guilt or empathy towards the victim parent and do not feel a decrease in their self-esteem, which is part of the guilt.
Presence of borrowed scenarios: Children use phrases and expressions learned from the adults' vocabulary and relate events they have never lived or cannot know about, but that are part of the smear campaign.
Spread of the child's animosity to the extended family of the alienated parent: PAS children also inexplicably reject those relatives they had previously had a loving relationship with and turn hostile to them.
Later, Gardner [4] added four more diagnostic criteria:

- difficulties of transition when visiting the non-custodial parent;
- behaviour of the child during visits or periods of stay at the alienated parent's;
- bond with the alienating parent;
- bond with the alienated parent (before the start of the process of alienation).

Depending on the intensity of the symptoms, Gardner established three levels of PAS severity: mild, moderate, and severe. In mild PAS, alienation is relatively superficial, and children mostly cooperate with visitation but are intermittently critical and disgruntled with the victimised parent; in moderate PAS, alienation is more intense, and children are more disruptive and disrespectful. There are transitional difficulties at the time of visitation; in severe PAS, all of the eight characteristic symptoms are present with severe intensity, and the children refuse to have contact with the alienated parents [8-10].
In clinical cases of mild PAS psychological intervention is not usually needed. However, it is important to raise awareness among relevant experts to avoid incorrect assessment and incorrect handling of situations, and it is essential to reassure the alienating parent about the possibility of keeping custody of child.
In cases of moderate PAS, which are the most common, the court should establish a system of effective sanctions to be inflicted on the alienating parent, if he/she tries to sabotage the therapeutic program agreed on with the psychotherapist.
In cases of severe PAS, it is necessary, according to Gardner, to enact stringent measures that provide for the transfer of primary custody to the alienated parent, and simultaneously placing the child's residence in his/her house. If this is the case, it is possible to gradually transfer the child to the alienated parent's house by arranging some "transitional accommodation" (e.g. the home of a friend, of a relative, community housing, or hospitalisation) [10 11].

DSM-5 and parental alienation

In the DSM-5 the expression "parental alienation" is not present, and the phenomenon is called differently. Paren-

tal alienation can, in fact, be framed within the category of Relational Problems. The DSM-5 defines Relational Problems as "persistent and dysfunctional patterns of feelings, behaviours, and perceptions involving two or more partners in an important personal relationship", laying stress on the individual in the relationship. In order to be diagnosed, the relational disorder requires a pathological interaction between the actors involved in the relationship. DSM-5 classifies the parent-child relational problems among Relational Disorders. This category should be used when the main object of clinical attention is the quality of the relationship existing between parent and child, or when the quality of the parent-child relationship dramatically influences the course, prognosis or treatment of a mental or a medical disorder. Parent-child relational problems are associated with impairment in social, behavioural, cognitive and emotional functioning.

Cognitive problems, in particular, may include "negative attributions of the other's intentions, hostility toward or scapegoating of the other, and unwarranted feelings of estrangement". The word alienation appears instead of estrangement in the Italian translation of DSM-5. However, in English the two words are considered synonyms [13]. Bernet [5 6] was one of the leading promoters of the inclusion of parental disorder in the DSM-5. He argued 20 reasons for including it, stating that parental alienation is a valid concept, has been present in the literature for a long time, may be conceptualised as an attachment disorder and defined by dimensional characteristics in line with the entire structure of the new Diagnostic Manual for Mental Disorders. Despite controversies on the terminology and aetiology, the phenomenon is almost universally recognised by mental health professionals from different countries who assess and treat children involved in highly conflictual divorces. The diagnostic criteria proposed for PAS are reliable. Systematic research indicates that the diagnostic criteria can be considered reliable both on the basis of test-retest reliability and internal consistency and it is possible to estimate the spread of parental alienation. Systematic research indicates that in the United States 1% of children and adolescents suffer from parental alienation, which is a serious mental condition. Its course often continues in adulthood and can cause serious problems over time. Bernet also stressed the urgent need to establish adequate diagnostic criteria that can be helpful to clinicians working with divorced families and separated parents who are trying to do what is best for their children, in order to reduce the possibility for molesting parents and unethical lawyers to misuse the concept of parental alienation in disputes over children.

In his proposal to include PAD in DSM-5, Bernet (2008) purported the eight diagnostic symptoms already described by Gardner (1992), without the inclusion of the other four symptoms Gardner later proposed (1998):

A. The child – whose parents are usually involved in a highly contentious divorce – is strongly allied with one of the parents and persistently refuses the relationship with the other alienated parent without any reasonable justification. The child refuses to visit the alienated parent and his/her custodial relationship.
B. The child experiences the following behaviours:
   1. persistent rejection or denigration of a parent that reaches the level of a campaign of denigration;
   2. weak, superficial and absurd rationalisations for persistent criticism towards the rejected parent;
C. The child shows two of the six following attitudes and behaviours:
   1. lack of ambivalence;
   2. phenomenon of the independent thinker;
   3. automatic support of one parent against the other;
   4. absence of guilt towards the rejected parent;
   5. presence of borrowed scenarios;
   6. extension of hostility to the extended family of the rejected parent.
D. The duration of the disturbance is at least 2 months.
E. The disturbance causes clinically significant distress or impairment in social, academic, occupational, or other important areas.
F. The child refuses to visit the rejected parent without a reasonable justification. The parental alienation disorder is not diagnosed if the rejected parent abuses the child.

Current debate on parental alienation and its diagnosis

Despite a growing literature, the term parental alienation syndrome (PAS) continues to raise controversy in child custody matters. Controversy exists, however, in conceptualising the problem of alienated children and in using the term PAS [14-17]. Those favouring the term believe it helps in understanding and treating a well-recognised phenomenon. Those opposing the term believe that it lacks an adequate scientific foundation to be considered a syndrome and that courts should not admit testimony on PAS. Critics argue that PAS is either an unnecessary or potentially damaging label for normal divorce-related behaviour, that it oversimplifies the aetiology of the symptoms it subsumes, and that it may result in custody decisions which fail to promote children's welfare.

Is there scientific evidence?

Many authors criticise the existence of PAS, claiming that clinical and empirical evidence is rather limited and therefore there is not adequate scientific evidence. Actually, careful research in the literature on the subject of parental alienation has shown that there are more than

500 studies on parental alienation [5], including several in Italy [18-22].

Is there gender imbalance?

Many PAS critics stressed that gender imbalance was present and that this was used by abusive fathers to discredit women who requested protection for traumatised children. Recent studies have shown that the alienating parents may be equally mothers or fathers. Initially, Gardner indicated the mother as the alienating parent in 75-95% of the cases; this statement has later been revised and researchers have recently confirmed the fact that there is no gender prevalence [16 17].

Baker and Darnall found that there were no differences between the gender of the targeted parent and gender of the child, meaning that both mothers and fathers were alienating parents and both sons and daughters were targets of alienation. However, the gender and the age of the targeted child were associated with the severity of alienation.

Is it possible to talk about syndrome?

The various criticisms addressed to the concept of PAS agree in considering scientifically unfounded the reference to a "syndrome" as a constellation of symptoms that characterise the discomfort of a contended child [23]. The problem whether or not there is a "syndrome" related to the alienation of a parental figure is posed in an inadequate way. PAS seems to be better defined as a "Disorder of Relational Behaviour", not as a syndrome. Phenomena such as bullying, stalking and cruelty exist and have legal significance regardless of recognition of disorders that can be identified as symptomatic. For example, sexual abuse exists even if there is not a "syndrome of the abused child" [22-24].

Is PAS a risk factor?

Another criticism towards the definition of PAS is that not only is there no mention of a possible suffering of the child, but also there is no specification of the psychic function that would be altered; the only aspect mentioned is this "campaign of denigration" (essentially the refusal expressed by the child of a relationship with one of the parents) that, again, does not account for subjective suffering of the minor. PAS is the first illness in the world for which a diagnosis is made without subjective suffering. PAS and conflictual separations represent for the child involved an evolutionary risk condition that, however, does not determine itself and especially not in the short term, a psychopathological condition. Data in literature and clinical practice highlight that parental alienation needs to be considered as psychological trauma and therefore an important risk factor for the onset of psychiatric disorders [22 25].

Clinical and epidemiological research has shown that a high incidence of traumatic experiences during infancy and childhood has an impact on the subsequent development of the person [26]. The psychopathological circuit generated by trauma begins when a highly stressful event interacts maladaptively with the individual's coping strategies: if these are inefficient, the traumatic event and its memory cannot be integrated and become dystonic. Among the factors that reduce coping ability there can be an excessive malleability of the subject, as happens in children: they are not resilient, but malleable. Risk factors concern all the existential conditions of the child and his/her environment that involve a higher risk of developing a psychopathology than what is observed in the general population; "minor" traumatic events or life stress events, and all their variables, interacting with each other, may they be biological, temperamental, family and/or social variables that can be reinforced through cumulative effects. They consequently determine a higher psychopathological risk if compared to what can be observed in the general population. Clearly, vulnerability to life events is extremely variable, so it is reasonable to assume that the different circumstances which affect individual lives can determine a mental disorder only if they act on a particular organisation of the person [27 28]. A multiplicity of clinical expressions connected to a history of childhood trauma have been described including major depressive disorder [29 34], dissociative disorders [30], or borderline personality disorder [31]. Given the same type of trauma at different ages, in childhood it causes alterations in different areas of the brain and different neuroendocrine systems [32 33]. Considering the short- and long-term negative effects of trauma on individuals, the identification of the risk factors such as parental alienation is important for both prevention and treatment of related disorders.

Bernet et al., 2015, retrospectively analysed the alienating behaviour present in an sample of Italian children and described the psychosocial symptoms associated with them. An anonymous and confidential survey about their childhood exposure to parental alienating behaviour and measures of current symptomatology was completed by s739 adults in Chieti, Italy. About 75% of the sample reported some exposure to parental alienating behaviour; 15% of the sample endorsed the item, "tried to turn me against the other parent." The results showed strong and statistically significant associations between reported exposure to parental alienating behaviour and reports of current symptomatology [34].

The alienating parental relational behaviour disorder (APRBD): our new concept

Based on the research carried out, we can state that parent alienation does not correspond to a "syndrome"

or a specific individual psychic "disorder". It can better be defined as a dysfunctional family relation model determined by the excluding or "alienating" parent, the excluded or "alienated" parent and the child, each member of this triad with his/her own responsibilities and contribution. It would, therefore, be more correct to define the old concepts of PAS and PAD as an "Alienating Parental Relational Behaviour Disorder" (APRBD). Different clinical features can then be defined, depending on the presence or absence of an effective alliance with the alienating parent (Alienating Relational Behaviour Disorder with parental alliance; Alienating Parental Behaviour Disorder without parental alliance) or the presence or absence of a motivation that underlies such dysfunctional behaviour (Alienating Parental Relational Behaviour Disorder with motivation; Alienating Parental Relational Behaviour without motivation) (Fig. 2).

The DSM-5 defines relational problems as "persistent and dysfunctional patterns of feelings, behaviour and perceptions involving two or more partners in an important personal relationship". To be diagnosed as such, a relational disorder requires the existence of a pathological interaction between the individuals involved in the relationship. It is not caused only by a pathological frame of one of the subjects. A more correct definition of this disorder would be as follows: unmotivated activation by one parent (alienating) of a campaign of denigration against the other parent (alienated) which results in the child tenacious and unmotivated refusal of the alienated parent, with or without alliance with the alienating parent, with or without a reasonable motivation to determine the campaign of denigration.

The psychopathological frame can be determined by various risk factors and various mediation factors:

- developmental phase;
- family variables (e.g. presence of brothers, extended family);
- intellectual level;
- style of attachment;
- coping strategies;
- resilience and malleability abilities.

A child that presents with these risk factors might then experience the separation of their parents as a psychological trauma (life stress event) that results in the onset of the "Alienating Relational Behaviour Disorder" (Fig. 3).

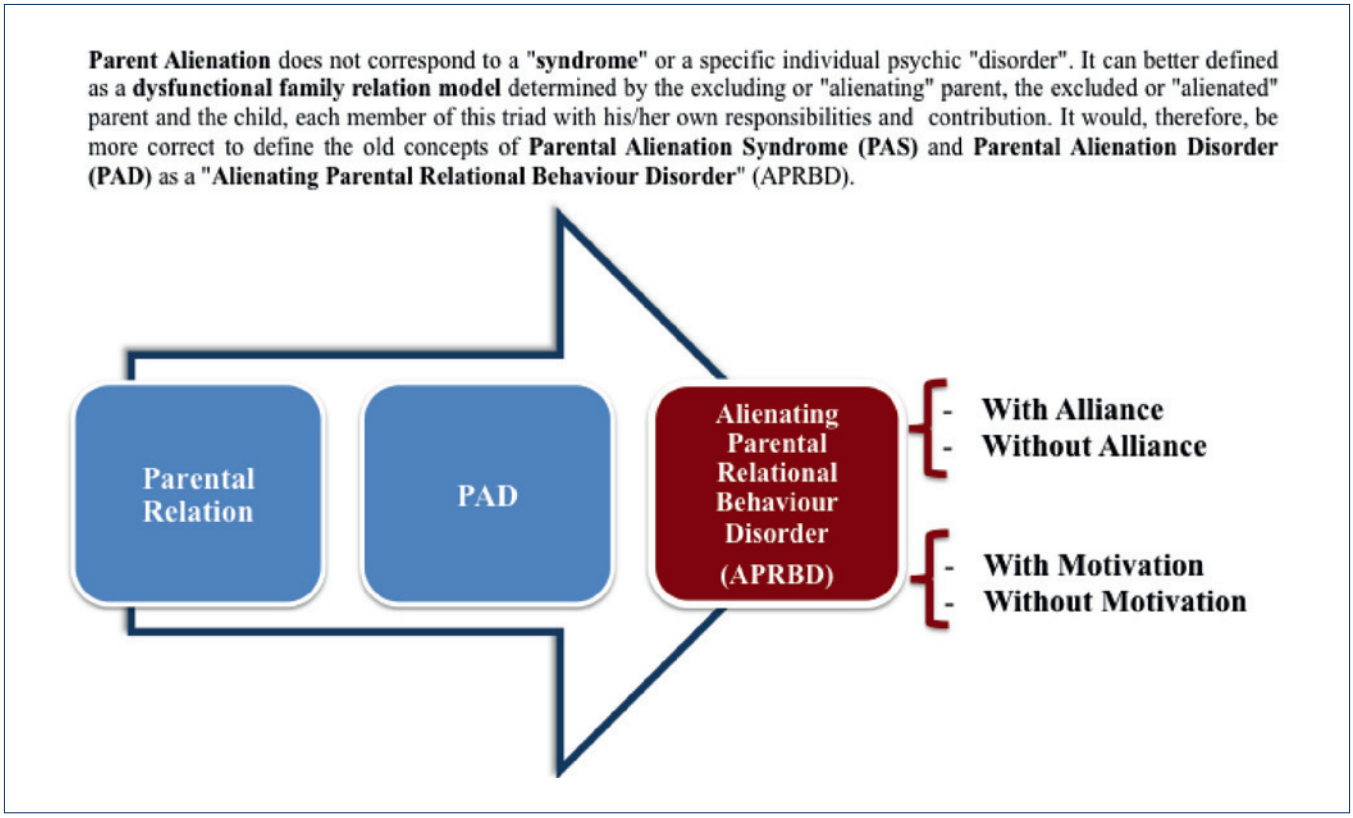

FIGURE 2.
PAS/PAD: an Alienating Parental Relational Behaviour Disorder? *PAS/PAD: un disturbo del comportamento relazionale genitoriale di tipo alienante?*

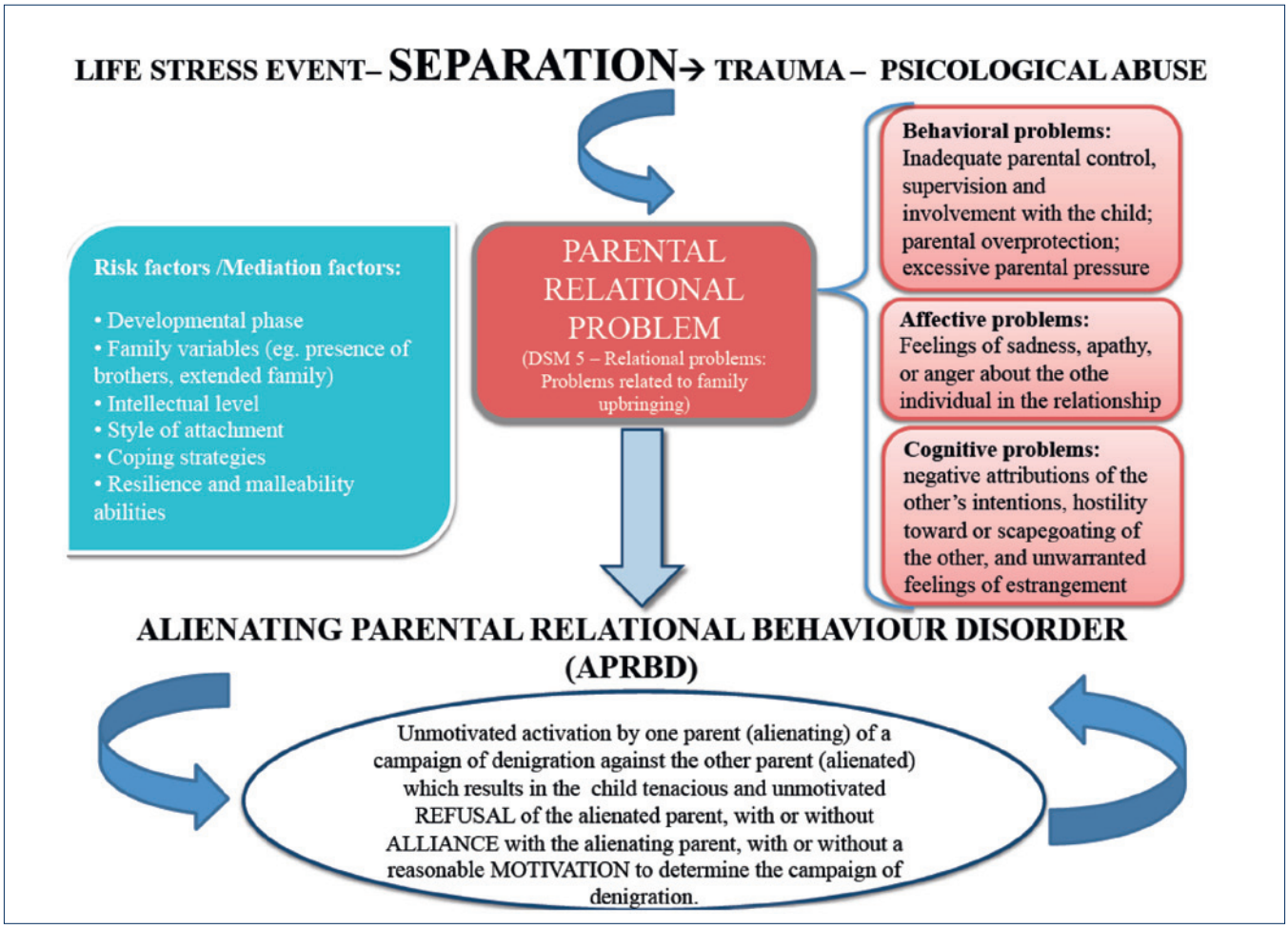

FIGURE 3.
Alienating Parental Relational Behaviour Disorder (APRBD). *Disturbo del comportamento relazionale genitoriale di tipo alienante.*

In adulthood, the same child might develop narcissistic personality disorders, manipulative and egocentric behaviour, sexual dysfunctions, or eating disorders.

Conclusions and future perspectives

The explanation of this disorder has its own validity, but thorough research to clarify its features (e.g. duration and intensity of symptoms) needs to be carried out, otherwise it could be instrumentally used in litigations. Further systematic and large-scale studies of parental alienation are needed that take into account the issues discussed, and proper objective diagnostic criteria should be defined for scrupulous diagnosis and valid treatment.
With adequate scientific evidence about diagnosis, therapy and prognosis, and the possibility of using appropriate assessment tools, the alienating parents and unethical lawyers would have fewer possibilities to misuse the concept of parental alienation in disputes over children. A nationwide systematic research is necessary to avoid the misuse of this term and to consent to proper use of the concept in clinical and forensic areas.

Conflict of interests
None.

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MISM: Clinical and epidemiological data of a new Italian Public Mental Health Care Model in development

"MISM" Modulo Integrato Sperimentale per la Salute Mentale: i dati clinici ed epidemiologici di una prospettiva assistenziale istituzionale in evoluzione

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Summary

An overview is provided of the characteristics and critical aspects of a psychiatric community model that forms the basis for psychiatric assistance in Italy. In particular, the MISM (Modulo Integrato Sperimentale per la Salute Mentale; integrated experimental module for mental health) project in the Lazio region is described, which integrates assistance, research, training and teaching between a psychiatric clinic and a community health unit in Rome inspired by the guidelines of the World Psychiatry Association Action Plan (2008-2011). The indicators of success of the project (reduction in total number of hospitalisations in the catchment area) required by the Lazio region were fully achieved. In addition, the overall efficacy and efficiency of the assistance offered, along with the pilot experience of the partnership between the university and local health services considering training, research activities and teaching, were obtained without an increase in regional healthcare expenses and in accordance with local regulations. The number and types of hospitalisations over time were compared before and after the implementation of the MISM in May 2010. From a clinical standpoint, the prevalence of hospitalised patients [including those already under care (generally for recurrent acute psychotic and mood disorders) and those experiencing first contact with psychiatric services] increased in recent years, because of the second ones, with shorter hospitalisation times.

Objectives

The aim of this study is to describe the psychiatric health care management of a territorial catchment area through the partnership between a University Hospital agency for acute patients together with public psychiatric network agencies, sharing common clinical guidelines.
The goal of the research is to evaluate quality of this partnership through a specific goal, consisting in assessing the amount of hospitalizations per year, from 2010 onward, confronting these results with those of preceding years.

Key words

Community psychiatry • Outpatient center • School of medicine • Catchment area

Introduction

Psychiatric assistance in Italy is based on a community model [1]. Community mental healthcare is founded on deinstitutionalisation; the need to reduce the level of dependence on assistance required; better utilisation of non-professional resources; greater level of patient participation in decision-making processes [2]. In Italy, over time, there has been sporadic reorganisation of psychiatric services, one example of which is the experience of the South Verona Community Mental Health Service [3]. The South Verona CMHS, provides a comprehensive and well-integrated spectrum of services to a population of about 100,000 inhabitants who live within a defined geographical area in the south of Verona. These services include: in-patient, day patient and out-patient care, rehabilitation, community care (including home visits), a 24-hour emergency service and residential facilities for long-term patients. The clinical model, a public health one, is characterised by continuity of care – both longitudinal continuity (through the different phases of treatment) and cross-sectional continuity (through the different components of the service) [4].

A particularly important aspect of the system in Verona is "the single staff model", where each patient is assigned to a particular psychiatric team and is followed by a member of the staff (the "case manager"). Case managers may be doctors, psychologists or senior nurses. All staff work both inside and outside the hospital setting, and retain responsibility for the same patients across different components of the service and through all phases of treatment. This system was designed to ensure continuity of care, both longitudinal continuity and cross-sectional continuity.

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While respecting the basic assumptions of community care, which direct the organisation of services, some of these changes have been maintained [5 6].
The goal of local mental health services, as reinforced by national objectives defined during 1998-2000, consists in understanding the needs of and caring for patients with severe mental health issues. This priority thus defines the major aims and justifies several basic premises: their public nature (not necessarily to provide service but to take responsibility); deliver services to the entire territory; the organisational model adopted (such as the facilities used and standards of care); a multidisciplinary approach and centralisation of the management team; a proactive approach to care that neither questions nor refuses treatment; development of high-risk, targeted interventions (e.g. in prison settings); the assumption of active protection against highly impaired clients (which are complex from both technical and ethical viewpoints); the extension of intervention to social insertion of severely compromised patients in employment and support networks; defend against social stigma; involve family members in treatment as an essential component of care in interventions aimed at overcoming social isolation [7 8].
Such a guiding philosophy is becoming increasingly widespread in economically advanced countries [9], but it still unclear how this is being applied in Italy. In this regard, the process initiated in the 1980s (1978) appears to have slowed down, with the risk that this may lead to marginalisation within the international psychiatric community [10].
The reasons behind such anomalies in Italy also involve a reduction in economic resources over the last decade (from 2000 to 2007 per capita health expenditure grew less than the OECD average). Moreover, some of the most resistant obstacles to change include: residual ideologies, not necessarily political, which even if well-intentioned, have created a hierarchy in which individual professionals govern clinical processes; a progressive lack of interest in scientific publications that can provide guidance for patient management, except for the use of diagnostic categories from recognised classification systems [11].
In this regard, and considering the increasing need for 'accountability' [12], it would appear that greater focus should be placed on the quality of intervention (including user satisfaction and quality perceived by family members) [13], overall expenses and competitiveness between care facilities. Ideally, this could lead to closure of less efficient facilities [14] and redistribution of resources. It is also necessary to review the organisation of services, where each facility is autonomous and free of specific geographic constraints, and able to function without considering other facilities within the same territory. On the basis of this hypothesis, community psychiatric services should be accurately evaluated on the basis of proven efficacy, and those based on evidence rather than political requisites should be privileged. This prospect is still not possible in Italy, which has given less attention to planning and establishing goals, with the creation of services oriented only towards 'needs' [15]. Another negative consequence is the lack of attention given to user participation in treatment choices and in reducing their dependency on services, and not considering the patient as a valid participant in the therapeutic partnership [16 17].
In some European countries, the emergence of new social and youth problems and increased demand has been met with greater determination than in Italy, where the percentage of spending on mental health has reached 9% of healthcare resources [18 19].
Franco Basaglia believed that scientific research carried out in a university setting could produce knowledge that is separate from the harsh reality of a psychiatric hospital, and assumed that academic and scientific research had little connection with practical issues. The professionalism advocated by Dr. Basaglia was more pragmatic than scientific. Indeed, the Italian law on deinstitutionalisation and psychiatric reform (Law 180) makes no mention of the role of the university and psychiatric clinics, and limited their activity to voluntary admissions within the framework of the National Health System.
In fact, Law 180 abolishes hospital psychiatric clinics, and limits their objectives to training and teaching within the university. Due to this law, which no longer allowed university-based psychiatric assistance, universities were forced for decades to train healthcare professionals in hospitals and ambulatory clinics independently of the university, and participated in daily clinical activities that had little to do with training, teaching or research. Only recently have universities become reinserted in patient management with the opening of clinics in community hospitals, even if their overall contribution is still modest and only a small proportion of university psychiatric clinics are directly involved in management of community metal health.
On the other hand, management, which relies on costly organisation of complex healthcare resources such as those in community psychiatric services, should concentrate on selected key parameters: objective evaluation of efficacy and efficiency of care, health status of clients, quality and efficiency of therapeutic processes, innovation and development of the skills needed to overcome potentially negative processes where operators tend to assume neutral roles in order to become interchangeable operators that can 'do everything' [20-22].
As reiterated in the National Project Objective (1998-2000), the mission of psychiatric services is to take care of individuals affected with severe mental health disorders. The largest proportion of human and economic resources are utilised in the treatment of severe psychiatric

disorders in adults, although it is increasingly evident that emerging disorders are also having substantial impact: recurrent episodes in adolescents and young adults, over time, can lead to severe psychotic disorders; personality disorders; dual diagnoses; eating disorders; comorbidities with somatic disorders or in older individuals; youth unrest. Such disorders have the potential to become epidemic, with subthreshold aspects that can lead to their underestimation [23].

Over the last 15 years, two mental health projects have been undertaken that have contributed to the development and organisation of current mental health services, even though the role of the university has been minimal. In reality, universities have been largely excluded from projects aimed at reforming psychiatric services in Italy.

University psychiatry, which is responsible for training over 95% of psychiatric healthcare personnel, must have an increasing role in hospitals and in territorial services. At the same time, in specialised training centres, 30-60% of teaching is carried out by those involved in local psychiatric services. The university now has the opportunity to play a more active role in training healthcare operators and to be a driving force between the evolution of scientific psychiatry and economic-organizational services with the framework of public assistance.

Organisation of the m.i.s.m. project

The present study describes the clinico-epidemiological results, the organisational aspects and the specific objectives, established Lazio Region, of the MISM pilot project (*Modulo Integrato Sperimentale per la Salute Mentale*; integrated model for mental health), based on a partnership between the university and community psychiatric services in terms of client assistance and a network of local hospital and territorial facilities. We have tried to adopt the guidelines of the WPA Action Plan 2008-2011, Community Mental Health Care [24].

The protection of mental health in a defined geographic area was thus entrusted to a Department of Mental Health in which a University Psychiatric Clinic has been inserted.

The MISM began its activities in May 2010 based on decrees from the Lazio region, and a protocol was agreed the Department of Mental Health, university and Sant'Andrea Hospital regarding exchange of personnel.

The objectives of MISM, established as 'indicators' by the Lazio region, were reduction in admittances to the emergency department and hospitalisations in the geographic areas covered by the project. The catchment area, facilities and operators primarily affected by MISM include:

- Regional healthcare system ASL RMA IV (population 130,000);
- Mental Health Centre (C.S.M.), via Lablache, 4;
- Ambulatory Facility (C.D.), via Pasquariello, 4;
- Sant'Andrea Hospital Psychiatry Department (Sapienza University of Rome).

Interns at the Department of Psychiatry divided their time between the hospital and satellite facilities, consisting of: regular shifts, following patients and tutoring by senior psychiatrists; regular emergency department shifts; home visits; individual and group psychotherapy (recent techniques introduced by the regional mental health care centre) [25]; participation in regular organisational and training meetings.

Starting November 2012, weekly multifamily group psychotherapy sessions were held in the ward, that involved healthcare operators, in-patients and families and at outpatient facilities at later dates: preliminary reports show an increased compliance to treatment, in the next six months from dehospitalisation, for those patients and their families involved.

The in-hospital management schemes and collaboration between caregivers tended to follow the overall characteristics of the multidisciplinary team at local facilities [26].

Moreover, the degree programme for technicians in psychiatric rehabilitation at Sant'Andrea hospital, which is a joint collaboration with the university and Mental Health Care, allowed for mobility of personnel during training [27] [28] [29].

Statistical analysis

Descriptive statistics were used in studying the catchment area data, with quantifiable data expressed as mean ± standard deviation, and socio-demographic and clinic factors as frequency and percentage. Statistical analyses were performed using the Chi square (χ^2) and Kruskal-Wallis test.

Results

Figure 1 shows the number of hospitalisations from 2008 to 2014: total number of hospitalisations, total number of hospitalisations in the catchment area and number of 'first' hospitalisations at the Department of Mental Health. As can be seen, there is an increase in the number of hospitalisations from 2010 onwards when MISM was instituted.

Figure 2 shows the trend of the number of hospitalisations since 2008 to 2014. It shows the total amount of hospitalisations, the total number of in-patients, the number of previously-hospitalised (known patients) and first hospitalisations patients (unknown patients) at the Mental Health Centre. It can be seen that the number of hospitalisations of already-known patients decreased after implementation of the MISM, while those for first hospitalisations increased. There was a statistically significant difference between the two groups, known *vs.* unknown patients ($p < 0.001$).

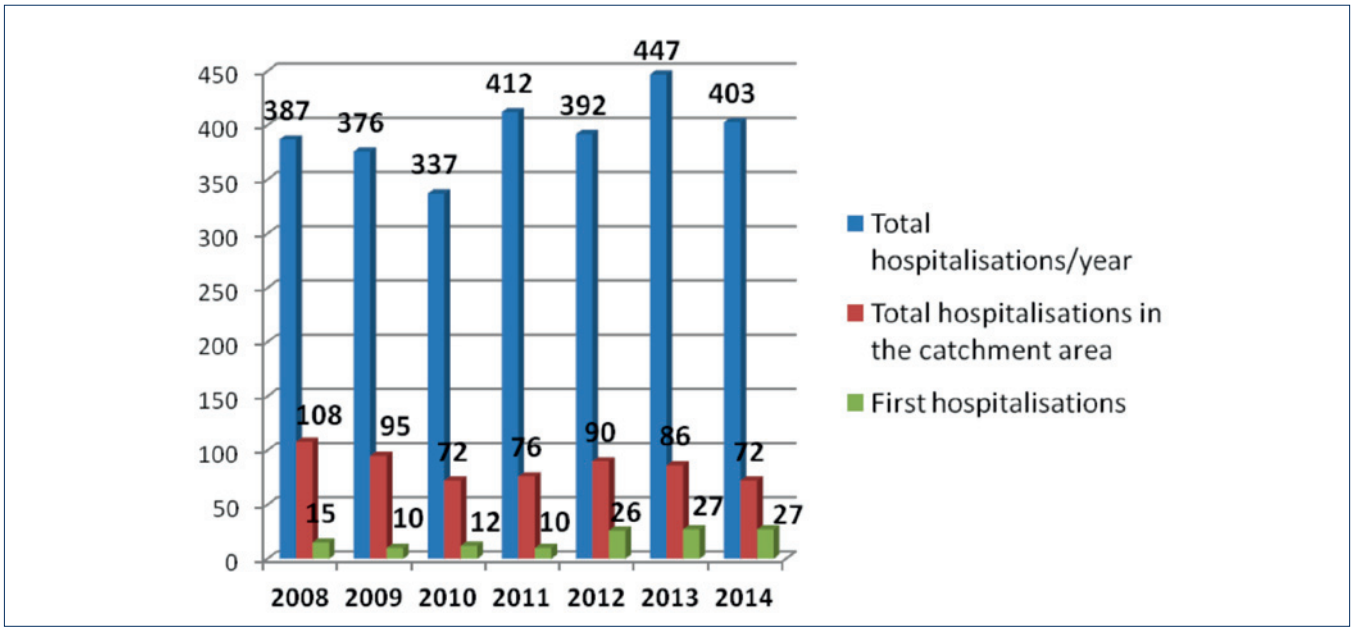

FIGURE 1.
Hospitalisations during the period from 2008 to 2014. *Ricoverati totali in S.P.D.C. dal 2008 al 2014.*

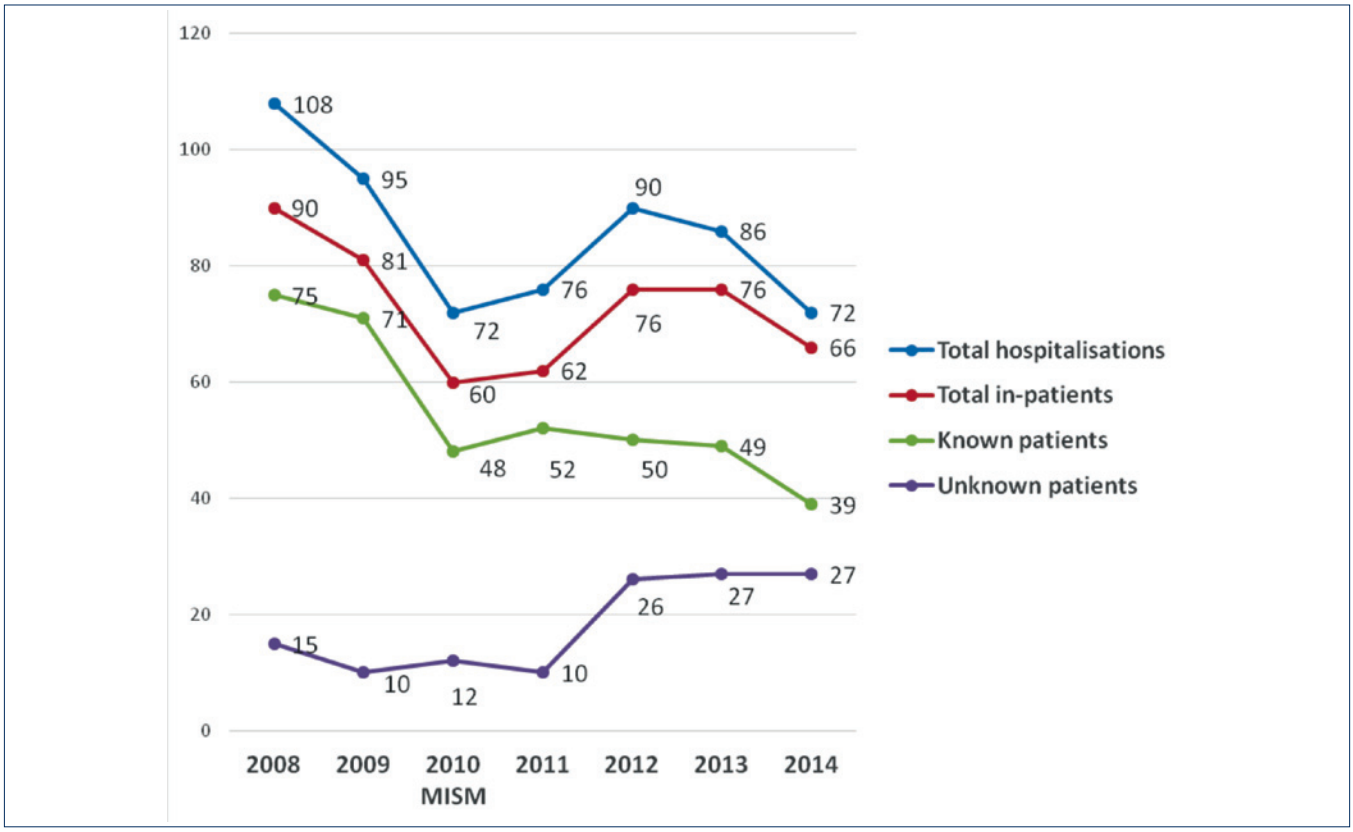

FIGURE 2.
2008-2014 trend of hospitalisations. Chi square test between known *vs* unknown patients ($p < 0.001$; $\chi^2 = 30.61$; 6 d.f.). *Andamento delle tipologie di ricovero dal 2008 al 2014.*

TABLE I.
Clinical and epidemiological characteristics of first hospitalisations during 2012-2014. Details first hospitalisations over the last three years. *Caratteristiche clinico-epidemiologiche dei ricoveri di pazienti sconosciuti ai Servizi dal 2012 al 2014.*

Year	Patients	Mean age* (±SD)	Mean age males§ (±SD)	Mean age females† (±SD)	Reactions %	Psychoses %	Affective disorders %	Non-voluntary hospitalisation %	Non-Italian %	Substance abuse %
2012	26	39,5 (±15.2)	42,1 (±16.1)	38,4 (±15.1)	23	38	39	46	23	18
2013	27	40,3 (±13.8)	36,0 (±12.7)	47,7 (±12.9)	41	22	37	22	26	33
2014	27	39,7 (±13.5)	36,4 (±9.7)	43,2 (±16.3)	22	44	33	41	19	30

* § † Kruskal-Wallis test ($p > 0.05$).

Discussion

The MISM project was initiated in May 2010. During the first 6 months of this innovative network of psychiatric facilities, a decrease in the number of hospitalisations by about 15% at the Department of Mental Health was observed in the catchment area over the previous reference year. Figure 1 shows the number of in-patient recoveries at Sant'Andrea hospital from 2008 to 2014: the total number of yearly hospitalisations can be compared for known and previously-unknown patients, both from the catchment area. Considering this, there was a decrease in the number of overall hospitalisations after the project was initiated, from 108 in 2008 (29% of total), to 72 in 2014 (18% of total).

During 2012, an increase (n = 90) in the total number of hospitalisations was observed in the catchment area compared to 2011 (n = 76), although there was a deep increase in hospitalisation for first episodes (26 in 2012 and 10 in 2011). These were generally attributed to acute psychotic episodes in young patients, and recurrent episodes in middle-age patients: thus these were individuals who had not been in previous contact with psychiatric services, or who had had first contact within two weeks prior to hospitalisation. The tendency towards a net increase in previously-unknown patients was also seen in 2013 and confirmed in 2014, although a decrease in total hospitalisations was also observed. The large number of hospitalisations compared to the previous year could be attributed to a shift in economic resources in Rome and surrounding areas in which some facilities were closed due to structural reorganisation, with a corresponding increase in the patient load at Sant'Andrea hospital.

There was, therefore, an increase in hospitalisations for first episodes during the last years. On one hand, this can be attributed to the ability of psychiatric services to meet increased demands, while on the other it also represents the expression of a phenomenon of diffuse social and economic malaise as some clients may no longer be able to afford private care, in contrast with past years.

These patients, previously unknown to psychiatric services, had a higher mean age than analogous patients in previous years (Table II). Thus, these are not young patients with a first symptomatic psychotic episode, but older patients with prevailing affective symptoms. In 2012, 11 of these hospitalisations, or 46% of the first 26 hospitalisations, were non-voluntary. Moreover, non-voluntary hospitalisations were distributed homogeneously in terms of age (an index of severity of symptoms and independent of age). Thus, these recoveries did not involve only young patients with a first symptomatic episode and poor compliance to therapy, as was generally observed in previous years.

During 2013, and confirmed in 2014, a slight increase was observed in the number of first hospitalisations as seen in Figure 2. In addition, there was an increase in the frequency of substance abuse, largely cannabinoids, and an increase in the proportion of males hospitalised, with a mean age that was greater than that of hospitalised females; the proportion of non-Italian patients remained unchanged. The changes in diagnostic categories observed, along with the percentage of non-voluntary hospitalisations compared to the previous year, are worthy of note. In 2013, the mean length of hospital stay for patients with first hospitalisations was 7.8, while it was 12.9 days for those who had been hospitalised before 2013.

During 2013, the presence of significant symptomatology, even if of uncertain diagnosis upon admission, was sometimes referred to as "Brief Reactive Psychosis", nonetheless required hospitalisation and demonstrates that there was a reactive component at the basis of the disorder.

In our patient cohort, we often observed manifestations of life events that were frequently related to the economic crisis, especially in low income families, where there was a deterioration of relationships both within families and

TABLE II.
Socio-demographic and clinical characteristics of patients in the catchment area. Summarises the socio-demographic and clinical characteristics of patients in the Catchment Area from 2008 to 2014. *Caratteristiche cliniche e socio-demografiche dei pazienti provenienti dalla Catchment Area dal 2008 al 2014.*

Year	Total hospitalisations	Hospitalisations in catchment area (N)	Hospitalisations in catchment area (%)	Patients with first hospitalisation (%)	Non-voluntary admissions with first hospitalisation (%)	Mean age at first hospitalisation (±SD)
2008	387	108 (90)	28%	15 (14%)	9 (60%)	25,3 (±3.5)
2009	376	95 (81)	25%	10 (11%)	6 (60%)	27,2 (±5.3)
2010 May MISM	337	72 (60)	21%	12 (17%)	4 (33%)	27,6 (±7.4)
2011	412	76 (62)	18%	10 (13%)	5 (50%)	28,3 (±7.5)
2012	392	90 (76)	22%	26 (34%)	11 (46%)	38,3 (±14.1)
2013	447	86 (76)	19%	27 (35%)	4 (22%)	40,4 (±13.2)
2014	403	72 (66)	18%	27 (56%)	15 (56%)	39,7 (±13.5)

social surroundings, involving Italians as well as the outsized immigrant population.
Moreover, it was apparent that there is widespread substance abuse due to the easy availability of illegal drugs [30]. Even if there is a recognisable cause, intervention is not made easier, given that it requires economic, pharmacological and psychotherapeutic interventions that are rendered difficult by the lack of trained personnel and resources.
In Figure 2 an interesting trend can be observed over time between the proportion of known patients and those with first recovery. During the present project, a decrease in hospitalisations of previously-known patients was noted, which can be interpreted as an indicator of the quality of service provided. This is in consideration that there was less need for in-patient hospitalisation among those followed by Community Mental Health Services, generally involving chronic schizophrenic and affective disorders.
Figure 2 shows the number of hospitalisations of patients who were already known to psychiatric services, which relative to previous years before the institution of the MISM, was around 50 per year. This would seem reasonable based on the population base of 130,000. It is possible to believe that this number could be further reduced, as it happened in 2014, if additional resources were available. It is, nonetheless, a valid indicator of the authenticity and quality of the project in that it describes stable but improved efficiency of the organisation of care provided.
Table II details the characteristics of the population in the catchment area over time, including the number of overall first hospitalisations and proportion of non-voluntary in-patient recoveries. In the most recent years, this was about 20% of total hospitalisations, which is in agreement with decrease seen after the initiation of the MISM project.
If one considers that characteristics of the study population in the catchment area (Table I), it can be seen that in 2013 there was an increase in the mean age of female patients, while that of males remained stable compared to 2012, with a consequent slight decrease in female mean age in 2014.
In recent years, the 'revolving door' problem has been somewhat reduced, even if numerically very limited, through better integration between various facilities and insertion of patients in community therapies.
Figure 3 summarises the diagnostic categories at discharge in the catchment area during the period of study. The high percentage of 'other' is related to the increase seen in recent years of dual diagnoses, comorbid symptomatology and personality disorders. Schizophrenic disturbances are more frequent than mood disorders, which confirms observations in previous time periods.

Conclusions

1) In our opinion, for decades there has been outdated management of Mental Health Departments that has created intractable fractures in satellite and hospital services, with little communication, which has led to deficits in knowledge and the quality of care. Such a situation is undoubtedly far removed from a clinical approach based on efficacy and accountability, and can bring about reciprocal distrust and tensions among healthcare operators. It is our belief that our study favoured integration between the university and the Department of Mental Health, as well as innovative organisation and guidelines, which led to benefits in terms of therapeutic continuity.
2) After about five years, many of the objectives of the MISM have been achieved – at no additional cost –

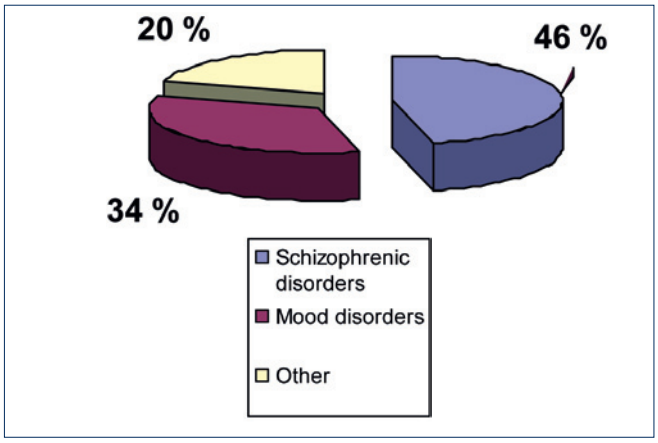

FIGURE 3.
Overall percentage of diagnoses at discharge from 2010 to 2014. *Diagnosi alla dimissione dal 2010 al 2014.*

and further provide evidence of its value. One important objective, in addition to respecting already Lazio Region established indicators: reduction in the number of emergency admissions and hospitalisations in the catchment area. These proportions would be even smaller if the increase in first recoveries over the last three years was not considered.

3) This positive data can be attributed to the development of a clear statement of the overall philosophy and tangible objectives of the project, which will be the subject of future efforts. This positive data can be attributed to a greater presence of psychiatric services on a local level and better coordination with the hospital, thereby rapidly meeting the needs of the entire population through better utilisation of available personnel.

Conflict of interests
None.

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Metabolic syndrome in acute psychiatric inpatients: clinical correlates

Sindrome metabolica in pazienti ricoverati in S.P.D.C.: correlati clinici

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Summary

Objectives

Compared to the general population, patients with major mental disorders have a higher prevalence of metabolic syndrome (MetS), which is known to increase cardiovascular risk and mortality. Many factors contribute to development and maintenance of metabolic disturbances in psychiatric patients. Nevertheless, gaps remain in relevant aspects, encouraging further studies in specific subgroups to evaluate the impact of each variable in developing MetS. Our aim is to identify the clinical and sociodemographic features consistently associated with the occurrence of MetS in a sample of inpatients affected by severe and acute mental illness.

Methods

Our study had a naturalistic design and involved inpatients consecutively admitted to the Psychiatric Unit of 'S Luigi Gonzaga Hospital' of Orbassano from December 2013 to September 2014. At study entry, general sociodemographic and clinical information was collected for each subject, including lifestyles and comorbidity for cardiovascular diseases and diabetes. Through index visit and routine blood exam, all metabolic parameters were assessed to define the presence of MetS according to NCEP ATP III modified criteria. Sociodemographic and clinical correlates of MetS were then investigated.

Results

One hundred twenty-five patients were enrolled. Of these, 37 (29.6%) had schizophrenia spectrum and other psychotic disorders, 47 (37.6%) had bipolar and related disorders, 28 (22.4%) had depressive disorders and 13 (10.4%) had personality disorders.
MetS was present in 35.2% of the sample. Low HDL-C levels were the most frequently endorsed criterion, present in 57.6% of subjects. Abdominal obesity, high triglycerides, hypertension and fasting hyperglycaemia were observed in 51.2%, 30.4%, 28.8% and 20% of patients, respectively. Patients who fulfilled MetS definition were more often characterised by current atypical antipsychotic treatment, current alcohol abuse, current psychiatric comorbidity with substance related disorders and longer duration of illness. After performing regression analysis, only current atypical antipsychotic treatment was significantly associated to MetS.

Conclusions

Our study confirms the increased risk of MetS in patients treated with atypical antipsychotics. No other clinical or sociodemographic variables were associated with MetS. These findings suggest a shared susceptibility to antipsychotic-related metabolic dysregulation that is not primarily related to psychiatric diagnosis or concomitant to other psychiatric treatment.

Key words

Metabolic syndrome • Atypical antipsychotics • Inpatients • Schizophrenia • Bipolar disorder

Introduction

Patients with major mental disorders are subject to premature death from all causes compared to the general population [1]. Among causes of death, cardiovascular (CV) disease is responsible for as much as 50% of excess mortality. The association between CV risk and major mental disorders such as bipolar disorder and schizophrenia is well established and comparable [2-4]. Furthermore, individuals with unipolar major depression have levels of CV risk that are at least as high as those in patients who suffer from bipolar disorder [5 6].
There are many reasons why patients with mood and psychotic disorders have elevated CV risk, but one source of CV risk, which is overrepresented in this population, is the cluster of findings that define metabolic syndrome (MetS) [7-10].
More specifically, MetS occurs in nearly one-third of patients with schizophrenia [11 12], while 37.3% of patients with bipolar disorder develop MetS, which is nearly twice the rate in the general population [13 14].
Many factors contribute to development and maintenance of MetS in psychiatric patients including poor lifestyle choices, such as excessive caloric and cholesterol intake, cigarette smoking and physical inactivity [15 16]. Moreover, major psychiatric disorders have been related to genetic liability and lifelong use of medications such as antipsy-

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chotics or mood stabilisers that have been associated with weight gain, dyslipidaemia and development of diabetes. Longitudinal follow-up studies to estimate changes in MetS rates among patients with schizophrenia and bipolar disorder suggest that the prevalence of MetS usually increases over time, in parallel with duration of illness and treatment [17-19]. A recent study from our research group showed that MetS rapidly increases from 28.6 to 44.3% over 2 years follow-up in a sample of patients with bipolar disorder treated as usual; moreover, patients developing MetS over time were taking antipsychotics at baseline, most of which were atypical antipsychotics, confirming the increased risk associated with this class of medications [20]. In addition to duration of illness, gender should be another clinical parameter that needs to be highlighted in evaluating the risk profile of MetS. Few studies have reported higher rates of MetS in males with bipolar disorder, with a prevalence of around 32% in men and 22% in women [21]. On the other hand, a high prevalence of MetS was noted in women (52%) compared to men (36%) with schizophrenia [8].

While considerable debate exists regarding the causes of the high prevalence of metabolic disturbances in patients with severe mental illness, gaps remain in relevant aspects, encouraging further studies in specific subgroups of psychiatric patients to evaluate the impact of each variable in developing MetS. Our aim is to identify the clinical and sociodemographic features consistently associated with the occurrence of MetS across different diagnostic groups in a sample of patients affected by severe and acute mental illnesses.

Materials and Methods

The study had a naturalistic design and involved inpatients consecutively admitted to the Psychiatric Inpatient Unit of the San Luigi Gonzaga Hospital, Orbassano (University of Turin, Italy) from December 2013 to September 2014.

Subjects

All patients consecutively admitted to the inpatient unit were considered for the present study. Patients with a main diagnosis of schizophrenia spectrum and other psychotic disorders, bipolar and related disorders, depressive disorders or personality disorders (DSM-5) [22] were asked to participate. The aims of the study and study procedures were thoroughly explained to potential participants who gave oral consent before participation. Exclusion criteria included age < 18 years, severe and unstable general medical conditions, any of the remaining main psychiatric diagnoses (e.g. substance related disorders, neurodevelopmental disorders, neurocognitive disorders), pregnancy or having just given birth and refusal to give consent prior to participating in the study.

Assessments and procedures

At study entry, general sociodemographic and clinical information was collected for each subject. Lifestyles were also investigated in the study sample: information about exposure to cigarette smoking, duration of alcohol and drug consumption and physical activity was obtained by directly interviewing patients. A score was assigned to the intensity of physical activity: absent, mild (< 4 h/week), moderate (4 h/week) and intense (> 4 h/week, regular) [23]. Comorbidity and family history for diabetes or cardiovascular diseases and current treatments for hypertension, diabetes or dyslipidaemia were assessed by looking at medical reports and by directly interviewing patients. At index visit, weight, height, waist circumference and blood pressure were measured. Weight was measured with the participant undressed and fasting height was measured barefoot. Waist circumference, measuring central adiposity, was measured midway between the inferior margin of the ribs and the superior border of the iliac crest, at minimal respiration. Two blood pressure measurements were obtained by using a mercury sphygmomanometer: the first with the subject in a supine position and the second with the subject in a seated position at least 2 min after the first measurement. The mean blood pressure of the two measurements was used. All the procedures were performed by the attending physician in the hospital setting.

A blood draw for routine blood exam was performed upon hospital admission, as part of routine clinical management. At the time when blood was drawn, patients were fasting for the previous 10 h; patients who did not fast were rescheduled. Blood exams included assessment of the following: glucose, total cholesterol, triglycerides, LDL and HDL-C. Patients were stated to have MetS if they endorsed at least three of the following five criteria, according to NCEP ATP III modified criteria:

- abdominal obesity: waist circumference ≥ 102 cm in men and ≥ 88 cm in women;
- hypertriglyceridaemia: ≥ 150 mg/dl or on being lipid-lowering medication;
- low HDL-C: < 40 mg/dl in men and < 50 mg/dl in women or being on triglyceride-lowering medication;
- high blood pressure: systolic pressure ≥ 130 mmHg or diastolic pressure ≥ 85 mmHg or on antihypertensive medication;
- high fasting glucose: ≥ 100 mg/dl or being on glucose-lowering medication.

Statistical analysis

Characteristics of subjects were summarised as mean and S.D. for continuous variables and frequency and percentage for categorical variables. We examined sociodemographic and clinical correlates of MetS using a chi-square test in the case of categorical variables, performing the

Yates correction in the case of a 2×2 table and independent-samples t tests in the case of continuous variables. In order to control for confounding factors, we entered the significant independent variables in a stepwise logistic regression analysis (LogReg) with MetS as the dependent variable.

Results

One hundred twenty-five patients were recruited in the study. The mean (±S.D.) age of the sample was 44.94 (±13.51) years; 48% of patients were females; 29.6% had schizophrenia spectrum and other psychotic disorders, 37.6% had bipolar and related disorders, 22.4% had depressive disorders and 10.4% had personality disorders.

Sociodemographic and clinical characteristics are shown in Table I.

Of the 125 patients, MetS was present in 35.2% of the sample. Low HDL-C levels were the most frequently endorsed criterion, present in 57.6% of subjects. Abdominal obesity was the second most frequent metabolic abnormality, affecting 51.2% of participants. High triglycerides, hypertension and fasting hyperglycaemia were observed in 30.4%, 28.8% and 20% of the sample, respectively (Table II).

We divided the sample in two groups according to the presence (n = 44) or the absence (n = 81) of MetS criteria. As shown in Figure 1, patients with a main diagnosis of schizophrenia spectrum and other psychotic disorders and bipolar and related disorders showed a higher rate of MetS, respectively 34.1% and 29.5%. MetS was observed in 25% of individuals affected by depressive disorders, while 11.4% of patients with a main diagnosis of personality disorders met MetS criteria. These differences were not statistically significant.

The other sociodemographic and clinical features of the

TABLE I.
Baseline sociodemographic and clinical characteristics of the sample. *Caratteristiche socio-demografiche e cliniche del campione*.

Characteristics	Value
Sex, *n* (%)	
Male	65 (52.0)
Female	60 (48.0)
Age (years), mean (±SD)	44.94 (±13.51)
Marital status, *n* (%)	
Never married	64 (51.2)
Married	39 (31.2)
Separated or divorced	16 (12.8)
Widowed	6 (4.8)
Education level (years), mean (±SD)	9.94 (±3.60)
Occupational status, *n* (%)	
Employed full-time	34 (27.2)
Employed part-time	10 (8)
House-wife	6 (4.8)
Student	4 (3.2)
Unemployed	53 (42.4)
Retired	18 (14.4)
Main diagnosis (DSM V), *n* (%)	
Schizophrenia spectrum	37 (29.6)
Bipolar and related disorders	47 (37.6)
Depressive disorders	28 (22.4)
Personality disorders	13 (10.4)

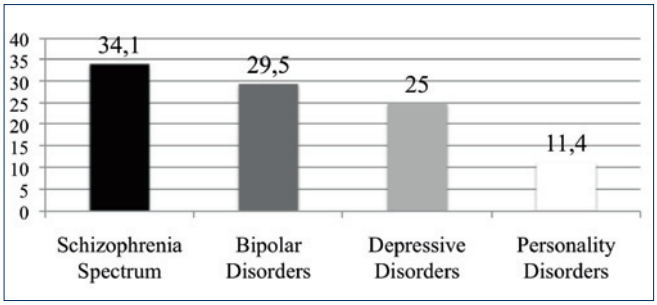

FIGURE 1.
Prevalence of MetS (NCEP ATP III modified criteria) in the main different diagnoses of the sample. *Prevalenza della sindrome metabolica nelle differenti diagnosi principali del campione*.

TABLE II.
Prevalence of MetS (NCEP ATP III modified criteria) and its components. *Prevalenza della sindrome metabolica e delle sue componenti nel campione*.

Criteria	*n* (%)
Abdominal obesity: > 102 cm (men) or > 88 cm (women)	64 (51.2)
Hypertriglyceridaemia: ≥ 150 mg/dl or being on triglyceride-lowering medication	38 (30.4)
Low HDL-C: < 40 mg/dl (men) or < 50 mg/dl (women) or being on lipid-lowering medication	72 (57.6)
High blood pressure: ≥ 130 mm systolic or ≥ 85 mm diastolic or being on antihypertensive medication	36 (28.8)
High fasting glucose: ≥ 100 mg/dl or being on glucose-lowering medication	25 (20)
MetS (three or more criteria)	44 (35.2)

TABLE III.
Comparison between patients with MetS (n = 44) and without MetS (n = 81): sociodemographic and clinical characteristics.
Confronto tra pazienti con MetS (n = 44) e senza MetS (n = 81): caratteristiche socio-demografiche e cliniche.

	MetS	No MetS	p
Sex, *n* (%)			0.458
Male	56.8	49.4	
Female	43.2	50.6	
Age (years), mean (±SD)	47.09	43.78	0.192
Positive family history for psychiatric disorders, *n* (%)	34.1	41.8	0.445
Positive family history for bipolar disorder, *n* (%)	9.1	7.6	0.744
Positive family history for CV disease, *n* (%)	45.2	38.5	0.560
Positive family history for diabetes, *n* (%)	19.0	15.4	0.616
Educational level (years), mean (±SD)	9.52	10.16	0.346
Occupational status, *n* (%)			0.810
Employed full-time	27.3	27.2	
Employed part-time	6.8	8.6	
House-wife	4.5	4.9	
Student	0	4.9	
Unemployed	47.7	39.5	
Retired	13.6	14.8	
			0.701
White collar	73.3	80.8	
Blue collar	26.7	19.2	
Marital status, *n* (%)			0.786
Never married	52.3	50.6	
Married	29.5	32.1	
Divorced	6.8	2.5	
Separated	6.8	9.9	
Widowed	4.5	4.9	
Locality, *n* (%)			0.158
Urban	2.3	9.9	
Rural	97.7	90.1	
Living arrangement, *n* (%)			1.000
Family of origin	38.6	38.3	
Own family	50.0	50.6	
Therapeutic facility	9.1	9.9	
Homeless	2.3	1.2	
Current smoking, *n* (%)	54.5	59.3	0.705
Lifetime smoking, *n* (%)	59.1	61.7	0.849
Current alcohol abuse, *n* (%)	18.2	4.9	**0.025**
Lifetime alcohol abuse, *n* (%)	22.7	12.3	0.200
Current substance abuse, *n* (%)	11.4	8.6	0.752
Lifetime substance abuse, *n* (%)	20.5	21.0	1.000
Main diagnosis (DSM V), *n* (%)			0.583
Schizophrenia Spectrum	27.7	72.3	
Bipolar and related disorders	40.5	59.5	
Depressive disorders	39.3	60.7	
Personality disorders	38.5	61.5	

(continues)

Table III - Follows

	MetS	No MetS	p
Current psychiatric comorbidity, *n* (%)			
Neurodevelopmental disorders	0	2.5	0.540
Anxiety disorders	0	1.2	1.000
Obsessive compulsive and related disorders	2.3	0	0.352
Somatic symptom and related disorders	4.5	1.2	0.283
Feeding and eating disorders	0	1.2	1.000
Substance related disorders	11.4	1.2	**0.020**
Neurocognitive disorders	2.3	0	0.352
Personality disorders	13.6	17.3	0.799
Lifetime psychiatric comorbidity, *n* (%)	34.1	27.2	0.421
Neurodevelopmental disorders	0	2.5	0.540
Depressive disorders	2.3	0	0.352
Anxiety disorders	0	1.2	1.000
Obsessive compulsive and related disorders	2.3	0	0.352
Somatic symptom and related disorders	4.5	1.2	0.283
Feeding and eating disorders	0	1.2	1.000
Substance related disorders	18.2	7.4	0.081
Neurocognitive disorders	2.3	0	0.352
Personality disorders	18.2	18.5	1.000
Age of onset (years), mean (±SD)	31.03	31.70	0.804
Duration of illness (years), mean (±SD)	16.31	11.47	**0.034**
Lifetime aggressiveness, *n* (%)	56.8	46.9	0.350
Lifetime suicide attempted, *n* (%)	40.9	34.6	0.561
Involuntary treatment, *n* (%)	9.1	8.6	1.000
Duration of involuntary treatment (years), mean (±SD)	7.00	10.33	0.104
Duration of hospitalisation (years), mean (±SD)	15.56	15.23	0.866
Seasonal admission, *n* (%)			0.209
Autumn	56.8	40.7	
Winter	22.7	40.7	
Spring	6.8	7.4	
Summer	13.6	11.1	
Hospital discharge, *n* (%)			0.283
Ordinary	95.5	98.8	
Patient request	4.5	1.2	
Current typical antipsychotic treatment, *n* (%)	20.5	9.9	0.110
Current atypical antipsychotic treatment, *n* (%)	59.1	39.5	**0.041**
Current treatment with mood stabilizers, *n* (%)	34.1	27.2	0.421
Current treatment with antidepressants, *n* (%)	38.6	39.5	1.000
Current treatment with anxiolytics, *n* (%)	52.5	50.6	1.000
Lifetime psychiatric treatment, *n* (%)	95.3	86.4	0.216
Lifetime treatment with antipsychotics, *n* (%)	75.6	62.0	0.157
Lifetime treatment with mood stabilisers, *n* (%)	56.4	39.7	0.115
Lifetime treatment with antidepressants, *n* (%)	63.4	58.2	0.695
Lifetime treatment with anxiolytics, *n* (%)	88.1	72.2	0.065
Physical activity			0.069
Absent	100	86.4	
Mild (< 4 hours/week)	0	7.4	
Moderate (4 hours/week)	0	1.2	
Intense (> 4 hours/week)	0	4.9	

two subgroups (with MetS and without MetS) are summarised in Table III.

Patients who fulfilled MetS definition were more often characterised by current atypical antipsychotic treatment (59.1% *vs* 39.5%; p = 0.041), current alcohol abuse (18.2% *vs* 4.9%; p = 0.025), current psychiatric comorbidity with substance related disorders (11.4% *vs* 1.2%; p = 0.020) and longer duration of illness (16.31 years *vs* 11.47 years; p = 0.034).

Next, a LogReg analysis was conducted to assess the relationship between the above-mentioned variables and the occurrence of MetS. The following explanatory variables were included in the analysis as independent variables: current atypical antipsychotic treatment, current alcohol abuse, current psychiatric comorbidity with substance related disorders and duration of illness. The only variable significantly associated with the presence of MetS was current atypical antipsychotic treatment (p = 0.005).

Discussion and conclusions

MetS increases the risk for cardiovascular diseases, insulin resistance and diabetes mellitus, and can lead to increased morbidity and mortality, in addition to impairing patient adherence to medication[24]. These are the reasons why, in recent years, MetS has emerged as a significant problem in both psychiatry and public health. There is thus a need to detect high-risk groups for developing MetS that should especially be screened and treated.

This study investigated the sociodemographic and clinical correlates of MetS in a sample of inpatients with major psychiatric disorder. More specifically, we highlighted whether the risk profile is the same depending on diagnostic subgroup, since several original reports as well as reviews did not provide unequivocal evidence. Moreover, we explored whether MetS rates differ depending on individual variables such as age, gender, duration of illness and treatment settings in order to guide clinicians in monitoring and treatment decisions.

The sample comprised 125 consecutively recruited hospitalised patients with a main diagnosis of schizophrenia spectrum and other psychotic disorders (34.1%), bipolar and related disorders (29.5%), depressive disorders (25%) or personality disorders (11.4%).

In our sample, the overall prevalence of MetS was 35.2%. This result is similar to that reported among patients affected by schizophrenia spectrum disorders [12 25-27] and mood disorders [13 28 29]. Nevertheless, this is higher than the prevalence of MetS (23.7%) found among hospitalised psychiatric patients by Centorrino and colleagues [30]. This could be due to a younger average age of the study subjects (35.7± 13.0 years) than in sample (44.94 ± 13.51 years).

We did not observe a specific psychiatric disorder significantly associated with MetS. This finding is in line with previous studies evaluating inpatients affected by psychotic and mood disorders [30 31] and with a recent meta-analysis in which no difference was seen in MetS in studies directly comparing schizophrenia and bipolar disorder, or in those directly comparing bipolar disorder to major depressive disorder [32].

Furthermore, we found no significant differences in the prevalence of MetS between men and women. Several studies are consistent with our results, indicating that both sexes deserve the same attention [9 13]. However, other studies have reported higher rates of MetS in females, especially with schizophrenia [8] and recurrent major depressive disorder [33], while higher MetS rates were found in young males with bipolar disorder [21]. Nevertheless, in the bipolar disorder population, the majority of studies have reported no differences between sex or do not report on it specifically [9].

We found that 59.1% of patients in the MetS subgroup were taking atypical antipsychotics (SGAs) compared with 39.5% in the subgroup of patients without MetS. This difference was statistically significant and confirmed by LogReg analysis (p = 0.005). The lower proportion of MetS (30%) found by Centorrino and colleagues in a sample of antipsychotic-exposed hospitalised patients is probably due to the younger mean age of subjects; nonetheless, patients taking antipsychotics presented MetS more frequently than those who had never taken antipsychotics [30]. The association between SGAs and MetS is confirmed by several studies in patients with different diagnoses. In particular, Correll and colleagues found that inpatients with bipolar disorder and schizophrenia who are treated with SGAs have similarly high rates of MetS [31].

It must be emphasised that in our study only current use of atypical antipsychotics was significantly associated with MetS. This is a relevant finding, although current treatment with SGAs could underlie previous antipsychotic treatments that are not always easy to retrace, especially for length and dosage. However, our results showed that exposure to atypical antipsychotics, even for a brief period of time, can lead to the development or worsening of metabolic dysregulations that can consequently give rise to MetS.

Published data examining changes in weight during short-term antipsychotic treatment (4-12 weeks) of schizophrenia revealed that increases in weight and body mass index in subjects who received risperidone, amisulpride or olanzapine were clinically and statistically significantly greater than in those who received placebo [34]. Considering glucose tolerance, Sacher et al. investigated the acute effects of oral administration of olanzapine and ziprasidone in healthy volunteers and observed a significant decrease (p < 0.001) in whole body insulin sensitivity after oral intake of olanzapine (10 mg/day) for 10 days [35].

In conclusion, our study confirms the association between

treatment with SGAs and increased risk of MetS among psychiatric patients independently of the diagnosis and other clinical features. Our findings are in agreement with those reported in a recent meta-analysis, although our study was conducted in an Italian sample of acute inpatients [32]. These conclusions suggest a shared susceptibility to antipsychotic-related metabolic dysregulations that is not primarily related to psychiatric diagnosis or concomitant to other psychiatric treatment.

The limitations of the present study include its observational nature and the relatively small sample size, especially regarding individuals primarily affected by personality disorders. Therefore, our conclusions are to be considered as suggestive. However, the alarmingly high frequency of MetS in all diagnostic subgroups and its relevant association with current atypical antipsychotic treatment warrant further analyses of risk factors in patients with major mental disorders in order to administer safer and better-tolerated treatments, giving particular attention when using atypical antipsychotics that are known for their metabolic side effects, and preventive programs targeting general health among psychiatric patients.

Conflict of interests

None.

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Exploratory factor analysis of the Mini instrument for the observer rating according to ICF of Activities and Participation in Psychological disorders (Mini-ICF-APP) in patients with severe mental illness

Analisi fattoriale esplorativa del Mini instrument for the observer rating according to ICF of Activities and Participation in Psychological disorders (Mini-ICF-APP) in pazienti con disturbi mentali gravi

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Summary

Objectives
After publication of the WHO International Classification of Functioning, Disability and Health (ICF), the Mini-ICF-APP (Mini instrument for the observer rating according to ICF of Activities and Participation in Psychological disorders) was derived and validated in three languages to assess limitations in activities or capacities and restrictions in participation in patients with mental illness. Although the Mini-ICF-APP has been demonstrated to have sound psychometric properties, factor analytic studies of this instrument have not been conducted, and the total score is generally used. We aimed at examining the structure of this instrument, in order to identify possible factors, which would allow a more sensitive measurement of an individual's specific limitations.

Methods
Patients with schizophrenia or bipolar disorder attending a community mental health center were recruited consecutively over an index period and underwent standardised assessment, including the 13-item Mini-ICF-APP 24-item and Personal and Social Performance scale and the Brief Psychiatric Rating Scale (BPRS-24). Factor analysis with maximum likelihood estimation and oblique rotation was performed on Mini-ICF-APP items.

Results
A three-factor solution provided the best goodness of fit indices. Factors were interpreted as proficiency, relational capacity and autonomy. Factor scores were significantly higher in patients with schizophrenia than in those with bipolar disorder. The 'proficiency' factor exhibited the strongest associations with BPRS, CGI-S and total PSP. Moreover, correlations between Mini-ICF-APP factors and PSP dimensions were in the expected direction, indicating good convergent and discriminant validity of the instrument;in fact, the highest correlations were found between the corresponding factors/dimensions of the two instruments (proficiency with PSP socially useful activities, relational capacity with PSP personal and social relationships, autonomy with PSP self-care) and the lowest correlations were observed with PSP dimension 'disturbing and aggressive behaviour, that is not assessed in the Mini-ICF-APP.

Conclusions
The factors extracted are clearly interpretable and have convergent/discriminant validity. Our findings may have clinical implications, as the distribution of factors distinguishes the two patient groups, which may require different interventions to achieve an optimal therapeutic response.

Key words
Exploratory factor analysis • Schizophrenia • Bipolar disorder • Capacity • Activity • Participation

Introduction

Severe mental illness is often associated with problems in social or occupational adjustment and functioning [1-4]. According to the bio-psycho-social model of the International Classification of Functioning, Disability and Health, ICF [5], a person's illness is the result of the complex interrelations between functions, capacities, context factors and participation. Activities are defined as "the execution of a task or action". There is a differentiation between "performance", i.e. what a person does, and "capacity", i.e. what a person can do. Capacity and even more disorders of capacity are defined in relation to a "uniform or standard environment" and "reflect the environment adjusted ability of the individual".

Participation is involvement in a life situation and is defined as the degree to which a person can fulfil role requirements in his/her job, family, or leisure time. This is partly dependent on "context factors", which define the

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type and complexity of requirements that have to be fulfilled and which therefore must also be described and taken into account.

Since the publication of the ICF, research on the measurement of social and occupational consequences of illnesses has increased [4 6-8]. In the field of mental disorders, the relation between functions, capacities and participation poses special problems [9-10]. Relevant domains of capacities that may be impaired especially in the presence of mental illness are adherence to regulations, planning and structuring of tasks, flexibility, endurance, assertiveness, self-maintenance, mobility, or competence to make judgements or decisions.

The Mini-ICF-APP [9-12] is a shortened version of the ICF that also takes into account the definitions of the Groningen Social Disabilities Schedule II [13]. It has been designed to be a clinician-rated instrument to assess limitations of capacities and/or participation restrictions in patients with mental disorders.

It was originally developed in German [12], later validated in English and Italian [14-15], and recently translated to Georgian [16]. The Italian validation study, carried out in patients diagnosed with schizophrenia, major depression, bipolar I disorder and anxiety disorders, showed that MINI-ICF-APP has a good inter-rater and test-retest reliability, and a high correlation with psychopathology measures (BPRS and CGI-S) and other measures of functioning such as the Personal and Social Performance Scale (PSP) and the Social and Occupational Functioning Assessment Scale (SOFAS) [15].

The aim of the present study is to examine the structure of the instrument in patients with severe mental illness in order to identify possible factors that may support clinical and research efforts to summarise and monitor limitations in patient capacity and participation restriction to be targeted in rehabilitation interventions.

Methods

One hundred patients (50 with schizophrenia and 50 with bipolar I disorder) were consecutively recruited from those attending the Community Mental Health Centre (CMHC) of North-Udine (Italy). The diagnosis was assigned on clinical grounds by psychiatrists working in the CHMC using DSM-5 criteria. All patients signed a written consent to participate. The study was approved by the Local Ethics Committee.

Instruments

Patient assessment included a socio-demographic form, Mini-ICF-APP, Personal and Social Performance Scale, Brief Psychiatric Rating Scale (BPRS) and Clinical Global Impression Scale (CGI-S).

The *Mini-ICF-APP* consists of 13 items that explore: (1) adherence to regulations, (2) planning and structuring of tasks, (3) flexibility, (4) competency, (5) judgement, (6) endurance, (7) assertiveness, (8) contacts with others, (9) integration, (10) intimate relationships, (11) spontaneous activities, (12) self-care, (13) mobility. Each item is rated on a five-point Likert scale (0: no disability, 1: mild disability, 2: moderate disability, 3: severe disability, 4: total disability). A total score is obtained by adding the item scores.

The Mini-ICF-APP rater collects information on the "uniform standard environment" or the social reference group, whichever applies to the case. The appraisal is based on available information (self-reports, information from the family, colleagues, friends, caregivers and health staff involved in the case management, from clinical observations and from medical exams or standardised tests) about the person and his/her living condition. The Mini-ICF-APP assessment requires sufficient knowledge of the proband. This is the usual situation of people in care with community mental health services. When sufficient knowledge of the patient has been acquired, compilation of the Mini-ICF-APP requires about 20 min.

The Personal and Social Performance Scale (PSP) [17-19] is a clinician-rated tool designed for completion by trained clinical staff. PSP has been developed through focus groups and reliability studies on the basis of the social functioning component of the DSM-IV Social and Occupational Functioning Assessment Scale (SOFAS). Patient functioning is assessed in four main areas: 'socially useful activities', 'personal and social relationships', 'self-care' and 'disturbing and aggressive behaviours'. Difficulty in each area is rated on a single item using a six-point scale, where lower ratings indicate better functioning. A global item is rated by the interviewer, ranging from 1 to 100 in 10-point intervals, where lower scores indicate poorer functioning. The PSP global score incorporates ratings for the four main areas, as well as levels of functioning in other areas, to adjust the precision of the rating within the ten-point intervals. This instrument has been demonstrated to have sound psychometric properties and has been previously used in a number of studies in patients with severe mental illness in Italy and elsewhere [20-25].

The Brief Psychiatric Rating Scale (BPRS) is a well-known clinician-rated tool designed to assess the severity of psychopathology [26]. The BPRS items focus on symptoms that are common in patients with psychotic disorders and mood disorders. Items range from 1 to 7, where 1 denotes the absence of the symptom and 7 the highest severity. In the present study, we used the expanded (24-item) version of the scale [27].

The Clinical Global Impression Scale (CGI) is a 3-item observer-rated scale that measures illness severity (CGI-

S), global improvement or change (CGI-C) and therapeutic response [28]. The illness severity and improvement sections of the instrument are used more frequently than the therapeutic response section in both clinical and research settings. In this study only the CGI-S has been used.

Statistical analysis

Exploratory factor analysis of MINI-ICF-APP items was performed using a robust weighted least square estimator to take into account the ordinal-level measurement of items. For this analysis, 2 missing items in 2 cases were replaced with mean values. Kaiser-Meier-Olkin index was used to measure sampling adequacy. This measure varies between 0 and 1. Values above 0.8 are excellent and indicate that the patterns of correlations are relatively compact and factor analysis should yield distinct and reliable factors. The number of factors to be extracted was determined using goodness of fit indices. These included the χ^2 test and the root mean square error of approximation (RMSEA). A non-significant χ^2 test denotes a good fit to the data. RMSEA values < 0.05 indicate good model fit and values between 0.05 and 0.08 indicate a reasonable error of approximation in the population.

Oblique rotation was performed using the promax method, under the hypothesis that the factors to be extracted were correlated.

Standardised factor scores were calculated using the regression method. These scores are expressed as Z scores (mean 0 and standard deviation 1) and are an estimate of the score each subject would have on each factor, if it were measured directly. Mann-Whitney test or Spearman›s correlation coefficient was used as appropriate to analyse the relationship of factor scores with diagnosis, psychosocial functioning (PSP scores) and severity of psychopathology (BPRS and CGI-S). Five multivariate analyses of variance were conducted to examine the relationship of factors with demographic characteristics (age, gender, marital status, working status and living arrangement). In these analyses, the dependent variables were the factors and the independent variables were the demographic characteristic of interest, diagnosis and interaction between diagnosis and demographic characteristic. Diagnosis was included in the model to take into account the different distribution of demographic characteristics between diagnostic groups. Marital status was coded as single, married, divorced/separated/widow;working status was coded as employed, unemployed, student/housewife, retired and living arrangement as self-sufficient vs. living in a residential facility.

All analyses were performed using MPLUS and IBM SPSS Statistics 20.0 for Windows.

Results

Characteristics of the study participants are provided in Table I by diagnostic group. They had a mean age of 49.7 years, 61% were male with a mean duration of illness of 19.7 years. The large majority of patients with schizophrenia were single, 52% had at least a high school diploma, 22% were employed and 88% were living with their family or independently. In patients with bipolar disorder, 30% were single, 67% had at least a high school diploma, 32% were employed and 94% were living independently.

At the time of the assessment, 91% were treated pharmacologically and 46% had been admitted to the hospital at least once; 64% of patients with schizophrenia were involved in a psychosocial rehabilitation program.

Factor analysis

KMO measure was 0.92, indicating an excellent sampling adequacy for factor analysis. Therefore, factor analysis was conducted and 1, 2, 3 factor solutions were derived. The three-factor solution accounted for 75% of item variance and had the best fit to the data (Table II), as shown by the non-significant χ^2 value and a satisfactory RMSEA index. Factor loadings to the three factors, arranged in decreasing order by factor, are shown in Table III. Loadings lower than 0.30 were not reported.

Factor 1, including 7 items, was interpreted as 'proficiency', since the items that load on it represent the cognitive and performance-related skills necessary to begin and maintain a task such as a work or a commitment in general. The items with the highest loading on this factor were *endurance, adherence to regulations* and *planning and structuring of tasks*.

Factor 2, including 3 items, *contacts with others, integration, and intimate relationships*, was interpreted as 'relational capacity' and lastly factor 3, including *mobility, self-care, and spontaneous activities* was defined as 'autonomy'.

Factors were correlated with each other, supporting the choice of using an oblique rotation (1 with 2 Spearman's $\rho = 0.719$, 1 with 3 $\rho = 0.531$, 2 with 3 $\rho = 0.532$).

Convergent and discriminant validity of factors

All MINI-ICF-APP factors were positively and significantly correlated with severity of illness, and negatively with the total PSP (because it is scored in the opposite direction) (Table IV). The 'proficiency' factor exhibited the strongest associations with BPRS ($\rho = 0.696$), CGI-S ($\rho = 0.612$) and total PSP ($\rho = -0.761$). Moreover, correlations between MINI-ICF-APP factors and PSP dimensions were in the expected direction, indicating good convergent and discriminant validity of the instrument;in fact, the highest correlations were found

TABLE I.
Characteristics of the sample. Data are reported as percentages or as mean ± SD. *Caratteristiche del campione. I dati sono riportati come percentuali, o medie ± DS.*

Characteristics	Schizophrenia (N = 50)	Bipolar disorder (N = 50)	Total (N = 100)
Gender			
Males	74	48	61
Females	26	52	39
Age (mean ± SD)	41.1 ± 10.5	58.3 ± 13.1	49.7 ± 14.7
Marital status			
Single	80	30	55
Married	12	38	25
Separated/divorced	8	32	20
Education			
Less than primary school	0	4.3	2.1
Primary school	8	13.1	10.4
Secondary school	40	5.2	28.1
High school diploma	46	47.8	46.9
University degree	6	19.6	12.5
Living situation			
Self-sufficient/with relatives	88	94	91
Clinic/Residential facility	12	6	9
Occupation			
Employed	22	32	27
Temporary job	4	4	4
Unemployed	40	14	27
Housewife/student	10	12	11
Retired	24	38	31
Previous psychiatric contacts			
No	36	16	26
Yes	64	84	74
Previous admissions to hospitals			
No	60	48	54
Yes	40	52	46
Previous compulsory admissions			
No	8	20	14
Yes	92	80	86
Previous use of psychotropic drugs			
No	34	26	30
Yes	66	74	70
Current use of psychotropic drugs			
No	8	10	9
Yes	92	90	91
Social network			
Absent	6.1	10	8.1
Family/friends	81.6	86	83.8
Public/co-op services	12.2	4	8.1
Perception of social support			
Positive	58.3	58.7	58.5
Negative	31.2	17.4	24.5
Not available	10.4	23.9	17.0
Presence of legal/administrative representative			
No	74.4	75	74.7
Yes	25.6	25	25.3

(continues)

Table I - Follows

Characteristics	Schizophrenia (N = 50)	Bipolar disorder (N = 50)	Total (N = 100)
Stressful events in the last 12 months			
No	49	48	48.5
Yes	51	52	51.5
Alcohol/substance abuse			
No	76	80	78
Yes	24	20	22
Ongoing rehabilitation program			
No	36	91.3	62.5
Yes	64	8.7	37.5
Funded project			
No	74.2	50	70.3
Yes	25.8	50	29.7
Duration of illness (mean ± SD)	17.4 ± 10.0	22.0 ± 11.8	19.7 ± 11.1
Duration of untreated illness (mean±SD)	13.1 ± 10.3	15.1 ± 11.9	14.1 ± 11.1
PSP scoring:			
Socially useful activities	3.10 ± 1.15	1.86 ± 1.32	2.48 ± 1.38
Personal and social relationships	3.00 ± 1.07	1.86 ± 1,07	2.43 ± 1.21
Self-care	1.36 ± 1.27	0.70 ± 0.86	1.03 ± 1.13
Disturbing/aggressive behaviours	1.78 ± 1.53	0.84 ± 0.98	1.31 ± 1.36
Total score	42.0 ± 17.3	59.8 ± 18.9	50.9 ± 20.1
CGI-S severity score	5.6 ± 1.0	4.6 ± 1.2	5.1 ± 1.2
BPRS total score	68.9 ± 20.4	50.0 ± 19.6	59.0 ± 22.3

TABLE II.
Goodness of fit indices for the 1, 2, 3 factor solutions. *Indici di bontà di adattamento per le soluzioni ad 1,2,3 fattori.*

	Solution		
	1 factor	2 factors	3 factors
χ^2 (p)	217.9 (< 0.001)	155.3 (< 0.001)	56.8 (0.06)
RMSEA	0.153	0.063	0.059

between the corresponding factors/dimensions of the two instruments (proficiency with PSP socially useful activities, ρ = 0.780, relational capacity with PSP personal and social relationships, ρ = 0.770, autonomy with PSP self-care, ρ = 0.803) and the lowest correlations were observed with PSP dimension 'disturbing and aggressive behaviour, which is not assessed in the MINI-ICF-APP.

Factor scores were significantly higher in patients with schizophrenia compared with those with bipolar disorder (Mann-Whitney test, $p < 0.001$).

Relationship of factors with demographic variables

Multivariate analyses of variance revealed that age, gender and marital status were unrelated with the three factors, after adjusting for diagnosis. The autonomy factor was associated with living arrangement ($F = 2.89$, $p < 0.05$), indicating that patients living in a residential facility had lower levels of autonomy and working status (employed had lower autonomy than unemployed, $F = 197$, $p < 0.05$). Proficiency and relational capacity were not associated with working status and living arrangement.

Discussion

The findings of the present study indicate that three factors underlie the 13 Mini-ICF-APP items.

The factors identified (proficiency, relation capacity and autonomy) proved to have good convergent and discriminant validity with the PSP dimensions, indicating that they measure psychometrically robust constructs. In addition, they appear to be consistent with a conceptual model of psychosocial assessment of functional and participation capacities that is easily understandable and applicable to rehabilitation programs.

The factors were positively correlated with psychopathology, as assessed by the BPRS and the CGI-S. These results confirm our previous findings, indicating a high correlation of Mini-ICF-APP with BPRS and CGI-S [15], and those of Schaub et al. [29], who found a high correlation between PSP and both Mini-ICF-APP and PANSS five-factor model

TABLE III.
Factor loadings to the three factors, arranged in decreasing order. *Pesi fattoriali rispetto ai tre fattori, ordinati in modo decrescente.*

	1 Proficiency	2 Relational capacity	3 Autonomy
Endurance	0.933		
Adherence to regulations	0.921		
Task planning	0.852		
Flexibility	0.821		
Judgement	0.661		
Assertiveness	0.601		
Competency	0.597		
Contacts with others		0.933	
Integration		0.815	
Intimate relationships		0.705	
Mobility			0.847
Self-care			0.757
Spontaneous activities			0.619

TABLE IV.
Spearman's correlations (ρ) between factor scores, psychosocial functioning (PSP) and psychopathology variables (BPRS e CGI-S). *Coefficienti di correlazione di Spearman (ρ) tra i punteggi fattoriali, il funzionamento psicosociale (PSP) e le variabili che misurano la psicopatologia (BPRS e CGI-S).*

	PSP socially useful activities	PSP personal and social relationships	PSP self-care	PSP disturbing and aggressive behaviours	PSP total	BPRS total	CGI-S
Proficiency	0.780 *	0.756 *	0.551 *	0.585 *	-0.761 *	0.696 *	0.612 *
Relational capacity	0.673 *	0.770 *	0.563 *	0.431 *	-0.665 *	0.571 *	0.572 *
Autonomy	0.680 *	0.650 *	0.803 *	0.337 *	-0.668 *	0.509 *	0.558 *

* $p < .01$

scores. In particular, in the present study we found that severity of illness was most strongly associated with the first factor 'proficiency', which explores capacity limitations, i.e. the cognitive abilities and skills required to perform daily tasks and to work.

Lastly, the MINI-ICF-APP factors had good known-group validity because capacity limitations were higher in patients with schizophrenia than in patients with bipolar disorder, as expected based on the differential achievement of social and work milestones between these groups.

The autonomy factor was associated with working status and living arrangement. The results are consistent with the expectation that being unemployed and living in a residential facility entails lower autonomy.

The MINI-ICF-APP can be used in everyday clinical practice, and can be administered after an in-depth assessment of patients or after a reasonable time period (e.g. a few months) from the first examination, when a sufficient number of mental-health operators remember the characteristics of the patients at a specific point in time. Thus, it is suitable for sharing information among a multidisciplinary team of carers, such as those working in mental health community-based services, who know the degree of restrictions of the subject on different activities or participation. The main advantage of Mini-ICF-APP over other existing instruments such as the PSP or the Global Assessment of Functioning (GAF) is the possibility to detail the restrictions that can hinder the full accomplishment of the daily life duty. Thus, the MINI-ICF-APP fulfils the need of an accurate description of the specific restrictions of the proband, which is a consolidated principle of rehabilitation programs.

The factors derived in the present study can be useful for

research purposes, to monitor changes in limitations and participation restriction over time and to establish the effectiveness of rehabilitation programs targeted to specific subgroups of patients.

Our results should interpreted keeping in mind some limitations. First, the sample size was relatively small to conduct a factor analysis. However, although some authors recommend a 10:1 patient/items ratio, a 5:1 ratio is in general sufficient when the sampling adequacy is good, as is the case in the present study. The sample size was also limited to draw conclusions about the relationship of factors with demographic characteristics because some subgroups had very few patients. Therefore, confirmation of our results is warranted in larger samples.

Moreover, patients were not administered a structured diagnostic interview. Nonetheless, they had on average a 20-year duration of illness and were well known to the staff of the community mental health service.

Conflict of interests

None.

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Can we modulate obsessive-compulsive networks with neuromodulation?

Neuromodulazione dei network ossessivo-compulsivi: è possibile?

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Summary

Neuromodulation techniques represent a network pathway-oriented treatment that can be considered as a promising tool in the achievement of "precision medicine" and a research domain criteria -based approach to treat several psychiatric disorders, including obsessive-compulsive disorder (OCD).
Both repetitive transcranial magnetic stimulation (rTMS) targeting the pre-supplementary motor area (pre-SMA), deep TMS (dTMS) targeting the orbitofrontal cortex (OFC) and deep brain stimulation (DBS) targeting the nucleus accumbens (Nacc) and ventral capsule/ventral striatum (VC/VS) seem to be effective in improving obsessive-compulsive symptoms and to restore dysfunctional prefrontal-striatal and pre-motor circuitries. Transcranial direct current stimulation (tDCS) effects on obsessive-compulsive symptoms have been less investigated, and the bulk of the available data is from case reports. Nevertheless, promising results are shown for cathodal stimulation of the OFC, while stimulation of the dorsolateral prefrontal cortex (DLPFC) failed to improve symptomatology. The aim of this review is to discuss the effects of both invasive and non-invasive neuromodulation techniques in OCD, focusing on its core dysfunctional networks such as prefrontal-striatal and SMA networks.

Key words

Obsessive-compulsive disorder • Neuromodulation • Transcranial magnetic stimulation • Transcranial direct current stimulation • Deep brain stimulation

Introduction

Current systems of classification in psychiatry, such as the DSM-5 and the ICD-10, are based on a categorical approach that often fails to align to emerging findings from genetics and neuroscience and do not capture the underlying mechanism of dysfunction [1]. Moreover, despite the rigid boundaries between disorders, the presence of clinically observed overlaps and neutral territories give rise to hybrid diagnoses, such as atypical or mixed forms. This results in limited knowledge regarding the neurobiological underpinnings of most psychiatric disorders and their exact pathophysiology. In the last years, the United States NIMH (National Institute of Mental Health) launched the Research Domain Criteria (RDoC) project as an attempt to overcome the limitations of current diagnostic systems and to "develop, for research purposes, new ways of classifying mental disorders based on dimensions of observable behavior and neurobiological measures" [1]. Therefore, RDoC projects aim to create a framework integrating the most recent contributions in neuroscience and genomics to guide future classification schemes. The RDoC project is based on the idea that psychiatric disorders result from underlying alterations in neural circuits, and that these dysfunctions can/will be identified by current or future tools of neuroscience: its ultimate goal is "precision medicine" for psychiatry, or, in other words, a diagnostic refinement based on a deeper understanding of the circuitries and networks of psychiatric disorders considered to be responsible for brain diseases [2].
Neuromodulation techniques represent a network pathway-oriented treatment that can be considered as a promising tool in the achievement of "precision medicine" and a RDoC-based approach to treat several psychiatric disorders. Both invasive (deep brain stimulation, DBS) and non-invasive (transcranic magnetic stimulation, TMS, and transcranial direct current stimulation, tDCS) techniques have been used in the last years in order to modulate several dysfunctional networks underlying different psychiatric disorders and to optimise treatment [3].
Non-invasive techniques (TMS and tDCS) are able to modulate cortical and brain regions with electromagnetic fields or direct electrical currents over the scalp, which can either increase or decrease cortical excitability in relatively focal areas depending on stimulation parameters. Repetitive TMS (rTMS) is a TMS protocol usually employed for treatment: high-frequency stimulation (≥5 Hz) stimulation is usually excitatory, whereas low-frequency (< 5 Hz) is

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usually inhibitory [4], with effects on the brain such as long term potentiation (LTP) and long term depression (LTD) [5]. The electromagnetic field generated from an rTMS coil placed over the scalp is able to reach a depth of 2 cm, so that some deep areas of the brain cannot be targeted: for this reason, a coil with greater intracranial penetration has been developed to reach limbic areas, administrating a protocol of stimulation termed deep TMS (dTMS). tDCS uses direct electrical currents to stimulate specific parts of the brain. A constant, low intensity current is passed through two electrodes placed over the head, which modulates the membrane potential depending on the type of electrode application. In fact, anode is able to facilitate the depolarisation of neurons, while in contrast cathode hyperpolarises the resting membrane potential, reducing the neuronal firing [6].

On the other hand, DBS is an invasive technique, which requires the stereotactical implantation of uni/bilateral electrodes in specific target brain regions through a neurosurgical procedure. Therefore, it resembles a kind of brain pacemaker that electrically stimulates specific areas to achieve a reduction in symptoms.

Both invasive and non-invasive procedures have been investigated in a broad range of neuropsychiatric disorders, among which, obsessive-compulsive disorder (OCD) and related disorders. Even if still unclear, the neurobiology of OCD is one of the most characterised among all psychiatric disorders. Thus, the aim of this paper is to review the effects of neuromodulation techniques on dysfunctional networks in OCD, focusing on its core dysfunctional networks such as prefrontal-striatal and supplementary motor area (SMA) networks [3 7].

Main dysfunctional networks in OCD

Structural and functional neuroimaging research has shown that the pathophysiology of OCD is associated with dysfunction of the orbitofronto-striato-pallido-thalamic circuitry, including several prefrontal and subcortical areas [8]. More recently, several studies have shown reward circuitry and frontal areas dysfunctions [9], so that the neurobiology of OCD has shifted from the anxiety-avoidance paradigm – involving amygdala and prefrontal cortex networks dysfunctions – to the reward-dysfunction one, involving nucleus accumbens (NAc) and frontal network dysfunctions [9 10]. Moreover, several studies showed the relevance of networks involving pre-motor areas, such as the pre-supplementary motor area (pre-SMA), in regulating inhibitory control functions (response inhibition and error monitoring) in OCD patients [11 12]. Therefore, neuromodulation studies have focused on these two main dysfunctional networks (prefrontal-striatal and premotor networks).

Neuromodulation targeting prefrontal-striatal networks

In the last years increased functional connectivity between the orbito-frontal cortex (OFC) and the ventral striatum (VS) has been reported in patients with OCD [13 14]. These data have also been confirmed by recent optogenetic studies on animal models of OCD [15]. Repeated stimulation of the OFC-ventromedial striatum (VMS) projections in mice using optogenetic techniques that increased the firing of postsynaptic VMS cells and the frequency of over-grooming behaviour, which represents OCD-like symptoms in mice [15]. Recently, the hyperactive connection from the OFC to the VS has been further confirmed by a resting-state fMRI study performed in non-medicated OCD patients and healthy volunteers [16]. This fronto-striatal hyperconnectivity has been targeted with several neuromodulation techniques, such as DBS, repetitive and deep TMS, and tDCS.

Several studies have investigated the effectiveness of DBS targeting different spots of prefrontal-striatal networks. DBS targeting the NAc and the ventral capsule/ventral stiatum (VC/VS) seems to be the most promising [3]. In a relevant paper of 2013, Figee et al. investigated NAc-frontal network modulation of DBS in OCD patients using functional magnetic resonance imaging (fMRI) and electroencephalography (EEG) in a DBS-ON/OFF paradigm [17]. In this study DBS was effective in reducing OCD symptoms and restored blunted NAc activity during a reward anticipation task. Moreover, DBS reduced the hyperconnectivity between the NAc and prefrontal areas (the lateral prefrontal cortex (lPFC) and medial prefrontal cortex (mPFC). DBS-induced changes in connectivity were correlated with changes in obsessions and compulsions, suggesting that DBS reduces OCD symptoms by decreasing excessive frontostriatal connectivity. Finally, the authors also found that DBS attenuated the increase in low-frequency activity elicited by symptom-provoking stimuli, suggesting that DBS tapered the frontal brain response evoked by symptom-provoking events [17].

Several TMS and one tDCS studies targeted the prefrontal-striatal network stimulating the dorso-lateral prefrontal cortex (DLPFC) in OCD patients. However, a recent meta-analysis shows that rTMS over both the left and right DLPFC does not seem to be effective in reducing obsessive-compulsive symptoms [7]. Moreover, a study with tDCS over the DLPFC failed to show benefits for obsessive-compulsive symptoms [18]. In fact, in this study the authors reported that cathodal-tDCS applied over the DLPFC decreased anxiety and depressive symptoms, but failed to alleviate obsessive-compulsive symptoms in a patient with treatment-resistant OCD [18].

On the other hand, encouraging results has emerged by a deep-TMS study that explored the effects of dTMS over

the left OFC [19]. The authors found that low-frequency dTMS resulted in significant reductions (> 25 %) on YBOCS score for 8 of 16 patients and a reduction > 35 % for 4 of 16 patients, with benefits lasting up to 10 weeks after the end of dTMS treatment. In addition, the effectiveness of OFC stimulation seems to be supported by a recent tDCS study that reported a 26 % reduction in YBOCS one month after the completion of 10 sessions of cathodal tDCS over the left OFC in a single patient with treatment-resistant OCD [20].

Neuromodulation targeting pre-SMA networks

Recently, both neuroimaging and neurophysiological studies have focused on supplementary motor area (SMA) hyperactivity in the clinical expression of OCD SMA networks seem to be involved in two main cognitive endophenotypes of OCD. In fact, pre-SMA (the more ventromedial region of the SMA) is involved in the cognitive process of response inhibition and has been shown to be hyperactive in OCD patients during response inhibition tasks [11]. Response inhibition deficit is a consistent finding in the OCD literature and has been proposed as the cognitive endophenotype since it also seems to be present in unaffected relatives [21 22]. Furthermore, hyperactive performance monitoring, a well-replicated finding in OCD research (measured by error-related negativity (ERN) in the event-related potential), is correlated to SMA hyperactivity in OCD patients [12].

A recent meta-analysis concluded that rTMS seems to be efficacious in the treatment of resistant OCD [7] and low-frequency protocols targeting the pre-SMA seem to be the most promising interventions [7], even compared to usual augmentation with neuroleptic agents [3]. One open-label and two randomised, sham-controlled studies investigating the effects of low-frequency rTMS over the SMA have shown its efficacy in treatment-resistant OCD patients [23-25]. Moreover, Mantovani et al. found that clinical improvement seems to be correlated to the inhibitor effect of low-frequency rTMS on cortical excitability [26].

A recent study has also investigated the effects of inhibitory (cathodal) tDCS over the pre-SMA [27] in OCD. D'Urso et al. observed differential effects of excitatory (anodal) and inhibitory (cathodal) stimulation of the pre-SMA. After 10 sessions of cathodal tDCS, dramatic clinical improvement (overall 30 % reduction in baseline symptoms severity score on the Y-BOCS) was observed, whereas 10 sessions of anodal tDCS led to worsening of OCD symptoms. These results support the hypothesis that pre-SMA hyperfunction might be responsible for OCD symptoms and, consequently, that inhibitory stimulation of this region might be an effective new treatment strategy (ibidem).

Interestingly, a recent case study [28] investigated the effects of integrated low-frequency (1 Hz) rTMS of the pre-SMA and exposure and response prevention (ERP) for an OCD patient with minimal response to psychopharmacological treatment. The combined protocol showed effectiveness for all obsessive-compulsive symptom dimensions and resulted in large and rapid reduction in symptoms. This suggests the existence of synergistic effects between TMS and ERP that should be further investigated: ERP may mitigate the shortcomings effects of pre-SMA rTMS in OCD and TMS may improve the speed of ERP. Of note, high-frequency rTMS over the left DLPFC has also been employed to enhance the effects of cognitive behavioural therapy (CBT), since its ability to induce long-term potentiation [29] has prompted further investigation and development of combined treatment options.

Conclusions

Neuromodulation techniques allow a network pathway-oriented treatment for several psychiatric disorders, including OCD. The identification of the core dysfunctional networks of the disorder and key nodes to target is crucial to optimise treatment. A range of recent investigations have suggested a central role for prefrontal-striatal networks and SMA networks in OCD, with detected abnormalities in their functional connectivity and cortical excitability. Therefore, a growing number of treatment and functional studies have focused on modulation of these circuitries, targeting specific key nodes.

rTMS targeting the pre-SMA, deep TMS targeting the orbitofrontal cortex OFC and DBS targeting the Nacc and VC/VS seem to be the most effective stimulation protocols in improving OC symptoms and restoring dysfunctional prefrontal-striatal and pre-motor circuitries. The effects of tDCS on OC symptoms have been less investigated, and most evidence is from case reports. Nevertheless, promising results have been shown for cathodal stimulation of the OFC, while stimulation of DLPFC failed to improve symptomatology.

Further research is needed to clarify the exact mechanism of action of this network-targeted treatment approach.

Conflict of interests

None.

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Treatment of resistant mood and schizoaffective disorders with electroconvulsive therapy: a case series of 264 patients

Trattamento dei disturbi resistenti dell'umore e schizoaffettivi con la terapia elettroconvulsiva: una casistica di 264 pazienti

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Summary

Objectives
Electroconvulsive therapy (ECT) is a non-pharmacological treatment whose effectiveness has been demonstrated for patients suffering from severe and resistant depression, bipolar disorder and schizophrenia. Several studies demonstrated the efficacy of ECT in different subgroups, such as patients with bipolar depression, mixed state, psychotic features and suicidal ideation. Herein we report a case series of 264 patients with mood and schizoaffective disorders who were resistant to multiple pharmacological trials and treated with ECT to achieve a clinical improvement or remission.

Methods
Patients underwent ECT at the psychiatric unit of Montichiari Hospital. All subjects had at least 18 years of age and met DSM-IV TR criteria for major depressive disorder (n = 89, 33.7%), bipolar disorder (manic n = 5, 1.89%; mixed n = 17, 6.4%; depressed n = 92, 34.85%), mood disorder with catatonic features (n = 8, 3.03%) or schizoaffective disorder (n = 50, 18.94%). Patients were evaluated before treatment (T0) and at one week (T1), 6 months (T2) and 1 year (T3) after treatment with the Clinical Global Improvement scale (CGI). Suicidal ideation was evaluated clinically at each follow-up visit.

Results
Clinical evaluations made one week after ECT showed clinical improvement in 100% of patients with manic episodes, 92% with bipolar depression, 91% with major depression, 90% with schizoaffective disorder, 82% with mixed episode and 62.5% with catatonic features. The same evaluation repeated 6 months and 1 year after the ECT reaffirmed global clinical improvement in 100% of manic patients, 88.5 with bipolar depression, 88% with mixed episode, 83.5% with major depression, 77% with schizoaffective disorder and 75% with catatonia.

Conclusions
ECT appears to be effective in providing overall clinical improvement. These conclusions are, however, limited by the experimental design and therefore liable to many uncontrolled variables.

Keywords
Electroconvulsive therapy (ECT) • Treatment resistant depression • Bipolar disorder • Schizoaffective disorder • Global clinical improvement

Introduction

Treatment resistance is a highly discussed topic in psychiatric clinical practice, especially in the case of mood disorders. In the STAR*D (Sequenced Treatment Alternatives to Relieve Depression) study, only 67% of patients completely responded to antidepressant treatment; the rate of response decreased at any further treatment (from 37% at the first antidepressant trial to 13% at the last trial) [1].
Regarding to bipolar disorder, the STEP-BD (Systematic Treatment Enhancement Program for Bipolar Disorder) study reported that 58% of patients achieved remission in 2 years follow-up; in this group of patients, nearly 50% had recurrences of illness, with depressive episodes doubling the number of manic, hypomanic or mixed episodes [2]. The most important staging protocols for the assessment of treatment resistance in major depressive disorder are those of Thase and Rush [3], Souery [4] and the Massachussetts General Hospital [5]. Thase and Rush's classification consists of five stages of increasing resistance to antidepressant medications up to electroconvulsive therapy (ECT), without considering dosage/duration of antidepressant trial or combinations/potentiation strategies. Souery's staging model identifies three stages of treatment resistance; stage one consists of cases that did not respond to a full trial of antidepressant medications (including a trial of bilateral ECT) of at least 6-8 weeks of duration; stage two (treatment resistant depression) includes cases with resist-

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ance to at least two trials of antidepressant medications of different pharmacological groups; stage three (chronic resistant depression) includes cases with resistance to different antidepressant trail, including potentiation strategies, for at least 12 months of trial duration.
The Massachusetts General Hospital classification considers both the number of failed antidepressant trials and potentiation/combination strategies, without any hierarchy of antidepressants, creating a continuous variable that reflects the degree of treatment resistance.
There are no staging protocols for assessment of treatment resistance in bipolar disorder. An operationalised definition of treatment resistance should consider non-response to at least two different trials of medications approved for bipolar disorder, adequate for dosage and duration (at least six weeks for mania, 12 weeks for depression, 12 or more months for maintenance therapy), excluding patients who responded to treatment but discontinued because of side effects [6].
According to the American Psychiatric Association Task Force on ECT [7], primary clinical indications for ECT are: major depressive episode (both unipolar and bipolar), manic/mixed episode, acute psychotic relapse in schizophrenia, schizophreniform disorder and schizoaffective disorder.

Materials and methods

The initial sample consisted of 287 patients treated with ECT at the psychiatric ward of the Montichiari Hospital between January 2005 and July 2012. All subjects were at least 18 years old; diagnosis was assessed with clinical interview by two experienced psychiatrists (O.B and G.F.) according to DSM IV-TR criteria.
All subjects did not respond to at least three different pharmacological treatments in the last six months. All subjects gave written informed consent to ECT treatment.
Patients were evaluated with CGI (Clinical Global Impression) scale at the beginning of the treatment (T0), and after one week (T1), six months (T2) and 12 months (T3); we defined response to ECT as a CGI score of 2 (moderately improved) or 1 (very improved). Suicidal ideation was assessed clinically at every follow-up visit.
From the initial sample we excluded 23 subjects: 15 withdrew consent to undergo ECT; 1 had a cardiac complication; 7 were lost to follow-up.
Procedure for ECT: anaesthesia was induced using thiopental sodium (2 mg/kg) or etomidate (0.30 mg/kg), succinylcholine was used as a relaxing neuromuscular (0.5-1 mg/kg); patients were pre-medicated with 0.5 mg atropine to reduce bronchial secretions.
ECT was administered using a brief pulse stimulator Mecta 5000Q, three times a week. The electrode placement was bitemporal until February 2009, subsequently applying LART (Left Anterior Right Temporal), reserving the bitemporal placement for cases with florid psychotic symptoms or problems to the convulsion. Patients were ventilated with 100% oxygen until resumption of spontaneous respiration.
The monitoring of vital signs included pulse oximetry and electrocardiogram. The stimulation parameters were: wave width 0.30 mA, frequency 20 Hz, duration of the stimulus 4 sec, if the seizure was not satisfactory, the duration of the stimulus was increased to 8 sec.
The number of sessions of ECT for each patient was decided by the treating physician based on clinical observation and course of disease.
Regarding concomitant therapies, anticonvulsants and benzodiazepines were suspended during the sessions of ECT and re-administered after treatment; lithium plasma levels were maintained at less than or equal to 0.4 mEq/L in the days immediately preceding session of ECT and during the course of treatment.
In case of resistant convulsion, we used the following options: change anaesthetic to etomidate; use of low dose pro-convulsant drugs (bupropion, clozapine, maprotiline); laryngeal mask.

Results

The group was composed of 264 patients (110 men) with a mean age ± SD of 51.06 ± 16.89 years for men and 51.38 ± 13.9 for women. The mean duration of disease prior to ECT was 13.5 ± 11.7 years. The distribution of patients was:

- 92 (34.85%) bipolar disorder type I and II, major depressive episode;
- 89 (33.7%) recurrent major depressive disorder;
- 50 (18.94%) schizoaffective disorder (major depressive episode);
- 17 (6.4%) bipolar disorder type I, mixed episode;
- 8 (3.03%) mood disorder with catatonic features;
- 5 (1.89%) bipolar disorder type I, manic episode.

At T1 follow-up, ECT treatment produced a clinical improvement in 100% of patients with bipolar manic episode, 92% of patients with bipolar major depressive episode, 91% of patients with major depressive disorder and 90% of patients with major depression in schizoaffective disorder; lower percentages were found in bipolar mixed episodes (82%) and mood disorders with catatonic features (62.5%).
At T2 and T3 follow-up times, patients with major depressive episodes did not maintain the level of clinical improvement achieved at T1 (at T2: bipolar depression 90%, major depression 84%, schizoaffective disorder 80%; at T3: bipolar depression 87%, major depression 83%, schizoaffective disorder 74%), while manic, mixed and catatonic patients performed far better (at T2

and T3: bipolar manic 100%, bipolar mixed 88%, catatonic 75%).
Regarding the presence of suicidal ideation, 53% of patients with bipolar major depression, 37.5% of patients with catatonic features, 36% of patients with major depressive disorder, 29% of patients with bipolar mixed episode, 22% of patients with schizoaffective disorder and 20% of those with bipolar manic episode presented suicidal ideation at the baseline evaluation pre-ECT (T0). In subsequent follow-up (T1-T2-T3), patients with bipolar manic and mixed episode and those with catatonic features no longer had the presence of suicidal ideation; a sharp reduction in suicidal ideation was also detected in other disorders (ranking bipolar major depression> unipolar major depression > schizoaffective disorder); two suicides occurred at T2 (1 patient with major depressive disorder, 1 patient with schizoaffective disorder).

Discussion

In our sample, ECT was found to produce a rapid clinical improvement in patients with treatment resistant bipolar mania, bipolar and unipolar major depression and schizoaffective disorder. These findings are consistent with those reported in the literature [8-10]. We found a progressive reduction in clinical improvement in patients with a major depressive episode: this can be explained by the fact that ECT has a rapid antidepressant response and a mood stabilising effect over time.
Our data also confirm the effectiveness of ECT in relieving suicidal ideation [11]. Patients with mania, mixed episode and catatonia had the best response to ECT in terms of antisuicidal effects, which were maintained throughout follow-up. The rate of suicide in our sample of patient treated with ECT was 0.75%, which is well below the rate of untreated severe mood and psychotic disorders [11].
This study has several limitations: 1) the observational design of the study is subject to many uncontrolled variables; 2) treatment resistance was defined widely and we did not report information regarding pharmacological treatment before ECT; 3) the outcomes after ECT were evaluated only with the CGI scale and not with other valid rating scales; 4) suicidal ideation was evaluated clinically; 5) co-morbidity with other psychiatric disorders and with substance abuse/addiction was not evaluated; 6) the patients' diagnostic distribution is asymmetric, and so it is difficult to make meaningful comparisons between responses to ECT.

Conflict of interests
None.

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Strategies to implement physical health monitoring in people affected by severe mental illness: a literature review and introduction to the Italian adaptation of the Positive Cardiometabolic Health Algorithm

Strategie per implementare il monitoraggio della salute fisica in soggetti affetti da disturbi psichiatrici gravi: revisione della letteratura e presentazione dell'adattamento italiano del Positive Cardiometabolic Health Algorithm

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Summary

Objectives
To review the strategies implemented in clinical practice to increase monitoring and active interventions to reduce cardiovascular risk in individuals with severe mental illness and their possible implementation in first episode psychosis (FEP) care.

Methods
A PubMed literature search was performed using the following key words: "metabolic syndrome", "antipsychotic", "schizophrenia", "psychosis", "severe mental illness", "intervention", "obesity", "weight", "physical health" and a combination of all above. Additional papers were identified through references and based on expert consultation as necessary.

Results
The review identified 14 studies in which a variety of different monitoring instruments were adopted in a range of clinical settings. Only three studies were carried out in subjects affected by FEP. The degree to which systematic monitoring was successfully utilised varied across studies and was mediated by a broad range of barriers. Nevertheless, some studies showed that the introduction of a systematic approach can improve the monitoring by up to 100%.

Conclusions
Despite heightened risk of developing cardiovascular and metabolic disorders, systematic monitoring of physical health is often suboptimal and haphazard. There is a paucity of specific protocols for people with FEP. Results seem more promising when the approach to physical health is multidisciplinary and integrated with primary care. In this regard, a computerized version of the Australian Positive Cardiometabolic Health Algorithm, along with a health check list completed by psychiatric nurses, seems to be the basis to improve monitoring and effective interventions aimed at preventing cardiovascular events in individuals suffering from FEP.

Key words
Cardiovascular disease • Early intervention • Metabolic syndrome • Obesity • Psychotic disorders

Introduction

Compared to the general population, people affected by schizophrenia have up to 20% shorter life expectancy, with cardiovascular disease representing the leading cause of death, occurring at a rate that is 10-fold higher than suicide [1-6]. Factors contributing to the overall poorer health are those associated with lifestyle, such as an unhealthy diet, lack of exercise and high rates of smoking [7 8]. While the distinction between first and second generation antipsychotics is becoming more controversial [9 10], some drugs described as belonging to the second generation antipsychotic (SGA) class appear more likely to affect the metabolic profile (e.g. clozapine and olanzapine) [11]. A matter of concern is represented by the fact that SGAs are usually preferred over typical antipsychotics in individuals affected by first episode psychosis (FEP) [12 13], despite a higher incidence of weight gain and metabolic side effects compared to the majority of first generation antipsychotics [9]. A large number of studies have reported high rates of metabolic syndrome among patients treated with SGAs; prevalence rates are over 50% for pre-diabetes or type II diabetes in adult psychiatric inpatient populations [14]. Moreover, younger

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individuals appear to be at higher risk than adults for developing weight gain and metabolic abnormalities related to antipsychotic treatment [14-17]. An average weight gain of 12 kg has been reported in patients with severe mental illness (SMI) within 24 months of their first psychotic episode and subsequent treatment [18]. In addition, as many as 9% of SMI patients are at high risk of cardiovascular disease (CVD) within 12 months of their FEP, due to their vulnerability to weight gain and metabolic dysfunction [18-20]. These alarming data clearly emphasise the importance of close monitoring of physical health in patients enrolled in FEP programs undergoing antipsychotic treatment. In response to these concerns, several management guidelines and quality standards have been published in recent years [21-40]. However, the evidence suggests that the availability of guidelines and standards does not always translate into their implementation in routine clinical practice [41].

The aim of this paper is to provide an overview of the most recent literature on strategies implemented in clinical practice to increase monitoring and active interventions to reduce cardiovascular risk in individuals suffering from severe mental illness and their possible implementation in care of first episode psychosis (FEP). The Italian adaptation of the Positive Cardiometabolic Health Algorithm.

Methods

A thorough literature search was performed on PubMed and Internet databases to identify articles dealing with strategies, adopted by different mental health providers worldwide, to implement monitoring and intervention for physical health in SMI. Words used, in varying combinations, were "metabolic syndrome", "antipsychotic", "schizophrenia", "psychosis", "severe mental illness", "intervention", "obesity", "weight", "physical health", "cardiovascular". Further references were extracted from selected articles based on authors' choices. Articles were excluded when full text was not available.

Results

A total number of 128 articles were identified; of 114 papers excluded, 47 reported efficacy of specific interventions, both pharmacological as non-pharmacological, rather than strategies to implement such intervention in routine care and therefore were not included in the current review, as shown in Figure 1. A total of 14 articles were finally selected, as reported in Table I.

Among the 14 articles identified, only three focused on people at first episode of psychosis (FEP), while 11 addressed the problem in people affected by a severe mental illness (SMI).

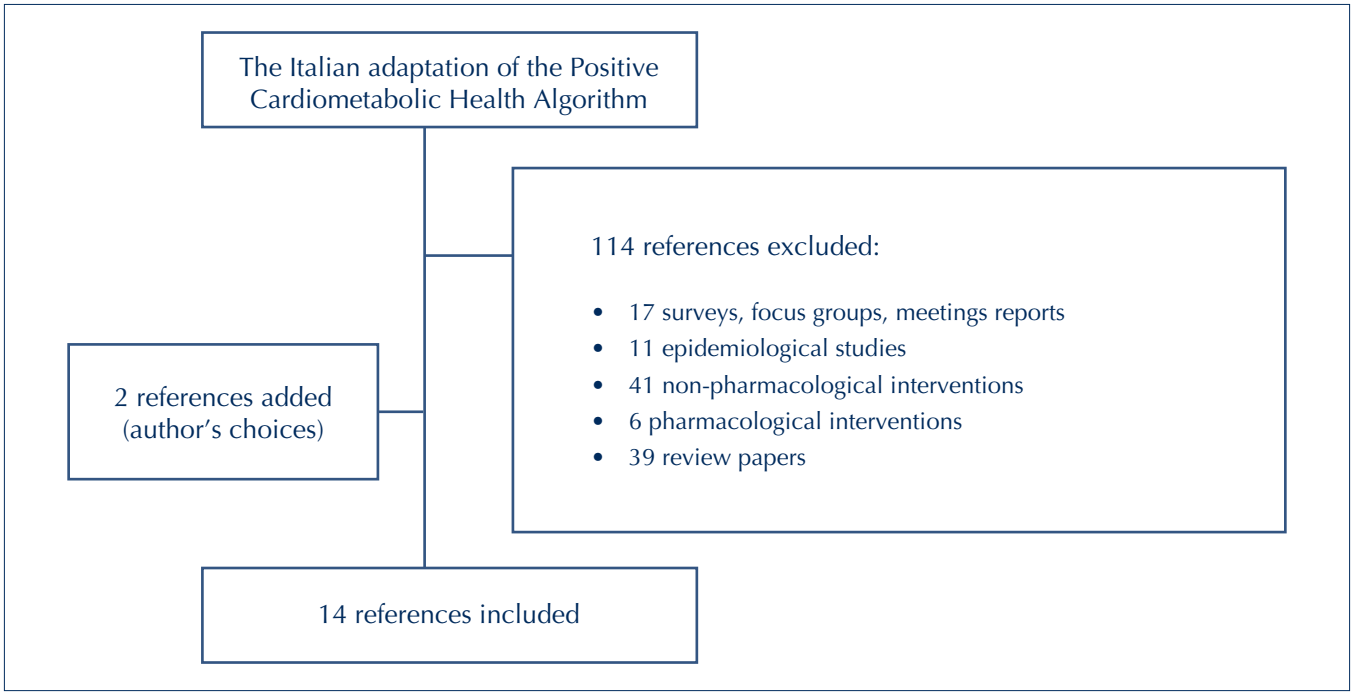

FIGURE 1.
Results. *Risultati.*

TABLE I.
Studies included in current review. *Studi selezionati ai fini della revisione della letteratura.*

First Author	Year	Country	Population studied	Method/methods applied	Results
Bressington	2014	Hong Kong	148 community-based patients with severe mental illness, Hong Kong population.	A consecutive prospective case series design. HIP** was used as a screening tool at baseline and repeated at 12 months follow-up	HIP** was feasible and useful, 93% applied at baseline. No statistical improvement in relation to health behaviours adopted by patients and indicators of vascular disease.
Curtis	2012	Australia	FEP† patients attending Bondi Service	Multidisciplinary approach using the paper sheet Positive Cardiometabolic Algorithm as framework.	NA‡
DelMonte	2012	USA	Psychiatric inpatient unit. 171 and 157 patients taking SGAs §, respectively in the pre-alert group, and post alert group.	Pop-up alert for ordering lipid and glucose checking.	Significantly improved rates of ordering fasting blood glucose and lipid levels. Significantly more post-alert laboratory orders were submitted at the same time as the SGA§, drug order. Overall rates remained suboptimal
Gonzalez	2010	UK	Community mental health Center. 126 patients pre-audit, 106 post-audit, all treated with antipsychotics.	Audit, 3 meetings with local consultants, 2 brief educational talks to junior doctors, single page monitoring tool sheet implemented.	Significant improvement in the performance of each test, except for glycated haemoglobin and prolactin.
Hardy	2012	UK	29 patients with SMI*.	To examine patients' views about the physical health check delivered by a nurse trained in the Northampton Physical Health and Wellbeing project	All of the patients reported that they had started to make changes to their lifestyle since the health check.
Hardy	2012	UK	92 Psychiatric patients and 416 diabetic patients	Invitation appointment letter to attend a physical health check in primary care. Comparison with patients affected by diabetes.	66% of SMI* vs. 81% diabetic patients attended the practice on the date stipulated in the letter.
Rosenbaum	2014	Australia	60 users, inpatient psychiatric unit.	Audit, educational training, including waist circumference measurement in the paper-sheet monitoring form.	Improved monitoring of waist circumference from 0 to 58%
Shuel	2010	UK	31 community patients with SMI*	Qualitative evaluation of a paper-sheet screening instrument implemented: the serious mental illness health improvement profile.	Qualitative feedback on the instrument was positive. 28 discreet interventions were used.
Thompson	2011	Australia	Patients with FEP† taking antipsychotics: 119 in the pre-intervention audit, 86 in the post-intervention audit.	Audit, analysis of barriers, provision of monitoring equipment, interactive educational events, reminders and prompts.	Significant improvements in both the screening and the monitoring of metabolic indices following initiation of antipsychotic medications. Improvements in the number of active interventions offered. Level of guideline concordant monitoring remained low.

(continues)

Table I - Follows

First author	Year	Country	Population studied	Method/methods applied	Results
Vasudev	2010	UK	15-bed male medium secure forensic psychiatric rehabilitation unit.	Audit cycle completed in 1 year. Physical health monitoring sheet introduced in the patients record.	Monitoring sheet adopted in 100% charts. Serum lipid and cardiovascular risk reduced.
Vasudev	2010	UK	Patients with SMI* under the care of early intervention psychosis service: 66 FEP† at baseline, 76 at re-audit.	Audit: evaluate physical health monitoring practices and Re-Audit. Letter to the general pratictioner for inviting patients taking a physical exam and lab tests.	The number of patients undergoing at least one annual physical health check increased from 20% to 58%.
White	2011	UK	Adult patients with a SMI*diagnosis.	Protocol: single blind parallel group randomised controlled trial with secondary economic analysis and process observation. To determine the effects of the HIP** programme on patient's wellbeing.	NA ‡
Wiechers	2012	USA	206 adult patients of a psychiatric resident outpatient clinic	Quality improvement intervention: focus group, resident education, and metabolic screening bundle for electronic devices.	Rates of screening single metabolic item increased between 3.5 to 10 fold. Screening for the full metabolic bundle increased 30 fold.
Wilson	2014	Australia	Physical health month (PHM)1: 224 users taking clozapine. PHM2: 232 users taking clozapine.	Audit, scheduled monitoring 6 months apart, lessons by physicians, overseen weekly.	Monitoring of physical health improved from 0 to 68%. Interventions did not increase.

Abbreviations:
*SMI: Severe Mental Illness; † FEP: First Episode Psychosis; ‡ NA: Not available; § SGAs: Second Generation Antipsychotics; **HIP: Health Improvement Profile

Strategies to improve physical health monitoring in FEP

Among the three papers dealing with strategies to improve physical health monitoring in FEP, two reported on studies performed in Australia [42 43] and one in the UK [44]; the aim was to adapt current guidelines to the stricter population of people affected by FEP. In order to overcome barriers to implementation of the UK NICE guidelines [45] on monitoring physical health in FEP, Vasudev et al, [46] carried out an audit. Actions implemented were: a) mandatory letters to general practitioners (GPs) emphasising the importance of physical tests, and b) a nurse-led support for patients to book two appointments with their GP (one for prescription of laboratory tests and physical examination, one for discussing results). A significant increase (from 20% to 58% screened) in the rates of physical health check performed in FEP patients was documented. Authors underlined that within the same period of time a Quality Outcome Framework (QOF) of the general medical services agreed to financially reward GPs who maintained a registry of people with SMI and checked their physical health annually [46]; this reward measure might have significantly contributed to the positive result of the audit. A year later Thompson et al. [42] carried out a study on measures to improve levels of screening and management of physical health within a FEP service in Australia. An analysis of possible barriers and enablers, availability of local guidelines, educational interventions, service changes, and provision of monitoring equipment preceded the study. Despite a significant improvement in both overall screening and initial monitoring of metabolic indicators in people enrolled in FEP services, rates of clinical management of physical health was still far from guidelines standards, underlying again the demand for more 'creative' strategies addressing specific needs of young people affected by FEP, such as, 'headspace' initiatives. In the field of FEP, 'The Bondi Early Psychosis Programme' targets young people (aged 15–25 years) experiencing their first episode of psychosis with the 'Keeping the Body in Mind Programme' lifestyle intervention as part of standard care [43]. The Bondi Service has developed a model of metabolic screening and a treat-

ment algorithm called "Positive Cardiometabolic Health" to provide clinicians with recommendations for early detection, prevention and intervention strategies targeting antipsychotic-induced metabolic abnormalities and cardiovascular risk factors [43].

Strategies to improve physical health monitoring in subjects with SMI

In the context of community mental health services, the strategies adopted to assess the level of awareness towards cardiometabolic risk in subjects with SMI have been mostly audits.

In 2010, Gonzalez et al. [47] performed an audit to improve physical health assessment in outpatient clinics: it included a review of medication charts and patient notes, 3 meeting with the local consultants and two brief educational talks, plus the introduction of a paper monitoring sheet. A significant improvement was reported in the overall performance of many laboratory tests, for example, glucose test prescription increased from 24.6% to 72.6%; however, the screening was still suboptimal and did not include anthropometric measures (waist circumference-WC, body mass index-BMI, blood pressure-BP, ECG monitoring).

Hardy et al. [48] performed an audit to promote attendance of patients suffering from SMI to GPs for an annual physical health check; a letter offering an appointment with a predetermined date and time at the GP office was sent to patients. Up to 70% patients with SMI attended their GP surgeries for a health check.

Wiechers [49] created a quality improvement intervention in an academic hospital psychiatric outpatient clinic to improve rates of metabolic screening in patients receiving antipsychotics. The core components of the intervention were focus groups, resident education and creation of a metabolic screening bundle template in electronic medical records, in addition to a focus group mid-way along the intervention to identify ongoing barriers to the intervention itself. The documentation increased from 1% to 31% of the full metabolic screening bundle, with blood pressure measure resulting the least documented index in charts. More recently, Wilson [50] carried out an audit focused on patients taking clozapine. He reported a suboptimal rate of health check monitoring; thus, he scheduled two monitoring visits 6 months apart for patients on clozapine during two "physical health months". Unfortunately, the increased level of physical health monitoring did not automatically translate into an appropriate documented intervention: in fact, only 30% of patients with metabolic syndrome were followed.

Accordingly to Hardy et al. [41] educational intervention itself could be the object of investigation, as the lack of evidence based education could strengthen the idea that monitoring physical health is not a necessary task and is not responsibility of psychiatric nurses. Offering education in this area will improve patient outcomes through a direct and/or indirect change in nurse attitude, knowledge and behaviours [41 51]. The same group subsequently developed a training package for practice nurses (PhyHWell) that was shown to be effective in modifying misconceptions regarding physical health in people with SMI [51].

A screening instrument, called Heath Improvement Profile (HIP), first developed and implemented by Shuel in 2010 [52] was adopted by Bressington et al. [53] in a community outpatient sample in Hong Kong. HIP is a 27-item screening and change tool that directs nurses and patients to select interventions to improve physical health. The implementation was found to be feasible and useful to identify areas where physical health requires intervention. To test which instruments were more effective in improving physical wellbeing in patients with SMI than those in current practice, White et al. designed a single blind parallel group cluster RCT; however, the results have not yet been published [54]. Vasudev et al. [55] introduced a single A4 physical health monitoring sheet in the chart of patients of a 15 bed male medium secure forensic psychiatric rehabilitation unit. Nurses and junior doctors completed this chart every 6 months. After one year, re-audit showed that 100% of the patient records reported up-to-date information on monitoring sheets. Moreover, it was observed that the introduction of the monitoring sheet prompted the prescription of hypolipidaemic drugs. Rosenbaum [56] included waist circumference as a routine measure to assess during admission to a psychiatric inpatient unit. An audit based on psychiatric nurses practice was performed thereafter. The authors provided 20 min of educational training and created a blank space slot for the registration of waist circumference (WC) measurement in the patient file completed by nurses at admission. This economic and relatively simple intervention led to an increase of WC measurement and recording from 0% to 58% within 12 weeks, with a 'persisting' effect on clinical practice even after 9 months from the time of the educational intervention.

Finally, work on the implementation of metabolic screening pop-up alert in the computerised physician order entry system was carried out by DelMonte et al. for people taking SGAs after the admission to a 22 bed general psychiatric unit [57]. Despite this, implementation was quite successful (for instance the availability of data regarding fasting glucose and lipid levels increased from 12.9% to 47.8%), but overall physical health monitoring remained suboptimal and incomplete: in fact, the pop-up alert takes into account only two of the six monitoring parameters recommended by the 2004 ADA consensus guideline recommendations for people taking SGAs.

Discussion

Among many studies on the increased cardiovascular risk associated with poor physical health in people affected by SMI, only a few focus on the assessment and intervention programs. Despite the great concern expressed by the scientific community regarding the need to monitor physical health in young people affected by a severe mental illness at the earliest, only 3 studies have been published to date on this issue i; however, strategies adopted in Mental Health Services for people affected by SMI can be adapted to FEP users.

There are few studies on the increased cardiovascular risk associated with poor physical health in people affected by SMI, and research to evaluate assessment and intervention programs is needed. Despite the great concern expressed by the scientific community regarding the need to monitor early physical health in young people affected by a severe mental illness, only 3 studies have been published to date on this issue in FEP; however, strategies adopted in Mental Health Services for people affected by SMI can be adapted to FEP users.

The majority of the studies reviewed focused on outpatient community services, while only 3 addressed the problem of physical health in the context of psychiatric inpatient units [55-57]. Inpatient admission represents a valuable opportunity to register baseline anthropometric and metabolic data since patients experiencing FEP are still drug naïve. In fact, despite the wider availability of specialised community mental health services, patients through FEP tend to have their first contact with psychiatric service thorough emergences services (emergency room in the general hospital, inpatient unit, crisis team) [58 59], and 63% to 81% of patients with FEP require hospitalisation for treatment [59-63]. While some studies have shown that obesity and insulin resistance might already be present in people at FEP [34 64-68], it is also evident that these problems can accelerate rapidly after starting antipsychotic treatment [20 68]: laboratory tests performed during the initial hospital admission could be subsequently shared with community mental health professionals and GPs in order to monitor and track changes and to make ad hoc, individualised interventions when necessary, e.g. start hypoglycaemic medications, switch antipsychotics etc.

The diffusion of smartphone usage offers new potentials for medical applications that could help clinical decisions, reduce errors and increase overall quality of care [69]. However, only two studies implemented either a metabolic screening bundle template in the electronic medical records [49] or a metabolic screening pop-up alert in the computerised physician order entry system [57]. Both strategies appeared feasible and effective in increasing the screening for physical health in people affected by SMI. This approach is potentially user friendly both for patients, especially younger patients who are more familiar with mobile apps, and for clinicians using apps or alarm as a mandatory reminder for scheduling lab tests or physical check. On the other hand, the traditional invitation letter adopted by two studies [44 48] highlighted potential barriers: it was observed that the letter addressed to the GP was more effective when it was mandatory for the nurses to send it out, coinciding with GPs being rewarded for maintaining a registry of people with SMI, a factor likely to have increased adherence to the physical health check by GPs. A barrier to the effectiveness of the letter addressed to the patient could be related to illness factors, such as the letter provoking undue suspicion or anxiety in the patient in response to an invitation to undergo physical examination or laboratory tests, particularly in the acute phase of the illness [70]. Other barriers might include ease of making appointments, lack of familiarity with the health practitioner and delayed appointments in noisy waiting areas [71 72]. Moreover, younger patients may already be ambivalent to health checks [73]; this observation is particularly relevant to people experiencing FEP, mostly adolescents and young adults between 15 and 25 years old, and is worthy of careful consideration by clinicians and service planners. In this regard, a SMS and email reminder was found to be effective in improving adherence to treatment in young people affected by type 1 Diabetes [74 75].

In five studies, a paper chart was attached to patient medical records [43 55 53 56], improving screening for metabolic disturbances in all cases. However, data on cardiovascular risk factor vary substantially, remaining suboptimal in few cases [47 56] as shown in Table II. Electronic pop-ups could potentially be more effective in reminding clinicians and nurses to perform a physical check. However, they usually require time and additional funds for community mental health services. Meanwhile, a paper sheet algorithm could be a user-friendly instrument to share with GPs, facilitating communication between clinicians and enabling them to improve their holistic approach. Prompts to patients and their families to request the application of the algorithm is another way to reinforce adherence and is currently being utilised in the implementation of the Lester UK version of the Australian Positive Cardiometabolic Health Algorithm [43 76].

An audit approach was adopted in 6 of 14 studies, with the specific intention to improve the quality of care in the outpatient services. The majority of the audits were supported by educational intervention targeted at mental health professionals nurses [42 50], psychiatrist residents [47 49], general practitioners [44 48], service changes and provision of monitoring equipment [42 56], but rarely scheduled supervisions [50]. Despite the general opinion that educational intervention directed to specialised nurses is crucial to

get positive results, no evidence has been reported [77] supporting a correlation between that intervention and clinical outcome; thus, evidence based educational interventions are needed to change misconceptions and attitudes of mental health professionals and providers to improve the overall service.

The majority of the studies reviewed reported strategies to improve metabolic screening and intervention to be performed exclusively by mental health professionals, with only a few exceptions [41 42 44 52]. This could explain, at least in part, why screening was suboptimal in the majority of cases and why it was rarely followed by adequate interventions, as already reported by Cahn et al. [30] and De Hert et al. [7]. Clinicians often complain of obstacles preventing adequate implementation of physical health checks in routine practice. These include lack of basic equipment to perform physical assessments [78], poor information technology support for recording and sharing laboratory investigations, being overwhelmed with emergencies in a time-limited consultation setting and lack of sufficient training or skills to provide a holistic intervention [79]. An integrated approach with general practitioners, as reported by Curtis [43], Vasudev [44] and Hardy [48], could be an effective strategy to overcome the above barriers and improve routine care. However, in any integrated approach clinical accountability should be clear. NICE [80] recommends that mental health services take lead responsibility for physical health monitoring in the first 12 months following initiation of antipsychotic medication, and that lead responsibility may shift to primary care thereafter. The algorithm developed by Curtis et al. [43] may be a useful instrument in clinical practice, evidence-based and offer a simple framework of what should be measured and actions to consider if problems are detected. Scaled up to national level, the Lester UK Adaptation provides the core monitoring instrument of a National Commissioning for Quality and Innovation initiative to financially incentivise mental health services to improve physical health monitoring (NHSE CQUIN 2014/15 guidance). Moreover, after reviewing all the instruments adopted in various clinical settings, the Algorithm first published by Curtis in Australia seemed the most complete regarding physical health data collected, as shown in Table II; it is easy to apply in real world settings, as shown by its implementation in Australia, UK, Canada and Japan (www.iphys.org.au), and designed to be shared with GPs. In consideration of the above data, an Italian adaptation of the Curtis et al. Positive Cardiometabolic Health Algorithm [43] has been produced (Appendix). Further improvements could potentially be gained if the clinical algorithm is implemented in an electronic format and with pop-up alerts for timely administration.

TABLE II.
Data collected in studies reviewed regarding cardiovascular risk factors. *Dati clinici riguardanti fattori di rischio cardiovascolare inclusi negli studi identificati.*

First author, Year	Metabolic syndrome					SMOKING STATUS	EXERCISE	OTHER
	GLU	LIP	WC	BMI	BP			
Curtis, 2012	✓	✓	✓	✓	✓	✓	✓	Polycystic ovary syndrome, lifestyle
Delmonte, 2012	✓	✓	NA	NA	✓	NA	NA	Weight
Gonzales, 2010	✓	NA	NA	NA	✓	NA	NA	FBC, urea, electrolytes, liver and thyroid function, prolactin, Hb_2Ac, weight
Rosenbaum, 2014	NA	NA	✓	✓	✓	✓	NA	NA
Shuel, 2010	✓	✓	NA	✓	NA	✓	✓	Pulse, temperature, liver function, cervical smear, diet, safe sex, sleep, dental health, breast check, testicle and prostate self examination, menstrual cycle, teeth, eyes, feet, bowels, urine, cannabis and caffeine use.
Thompson, 2011	✓	✓	✓	✓	✓	✓	✓	NA
Vasudev, 2010	✓	✓	✓	✓	✓	✓	NA	FBC, CV RISK, ECG, alcohol intake
Wiechers, 2012	✓	✓	NA	✓	✓	NA	NA	NA
Wilson, 2014	✓	✓	✓	✓	✓	✓	✓	Alcohol intake

GLU: blood glucose, LIP: blood lipids (total cholesterol, LDL-cholesterol, HDL-cholesterol), WC: waist circumference, BMI: body mass index, BP: blood pressure, NA: not available, FBC: full blood count, CV: cardiovascular, ECG: electrocardiogram

The current review has some limitations: the first is the paucity of data regarding specific strategies to implement physical health monitoring in people affected by FEP. Despite clear evidence that cardiometabolic risk appears early and that the best predictor for long-term weight gain is an increase of more than 5% after one month of psychopharmacological treatment [81], at least due in part to the direct consequence of prescribed antipsychotic medication [82], monitoring and intervention for physical health in people affected by FEP is still suboptimal and varies significantly across countries. Among the reasons for the lack of systematic approach to physical health monitoring and intervention in FEP, several factors should be considered to play a key role: the diversity of methods adopted, absence of RCTs on this topic and lack of instruments adapted to a population that is often younger than average users with SMI, and sometimes difficult to engage in treatment [83].

Alongside the above-mentioned difficulties to adapt strategies for people affected by SMI to monitor physical health in FEP, several barriers to access healthcare for people with a SMI have also been identified. Many authors reported inequalities for access in care [7 84] in people affected by SMI. Barriers to physical health care are perceived by patients and healthcare staff across all steps of healthcare delivery [71], including: a) identification of health problems [71 72 85 86], b) reaching healthcare services [72 85 87], c) financial problems [88] d) health care professionals work overload [89] and e) follow-up to identified physical health problem [78 85 86 89].

The small number of reported studies underlines the large gap between the spread of guidelines that reflects the need of monitoring physical health in people affected by SMI, and the barriers emerging in mental health services to implement new strategies in clinical practice.

Improving care of physical health is a pressing need for patients affected by FEP [82]. No monitoring is unethical, risky and then unacceptable. Effective intervention is provided by a multidisciplinary team led by psychiatrists but requires a close communication between mental health services and the primary care physician. The combination of creative approaches and already established evidence-based practices borrowed from other medical fields [90 91], with the introduction of innovative technologies suitable to reach younger patients, will contribute to improving the overall quality of mental health services.

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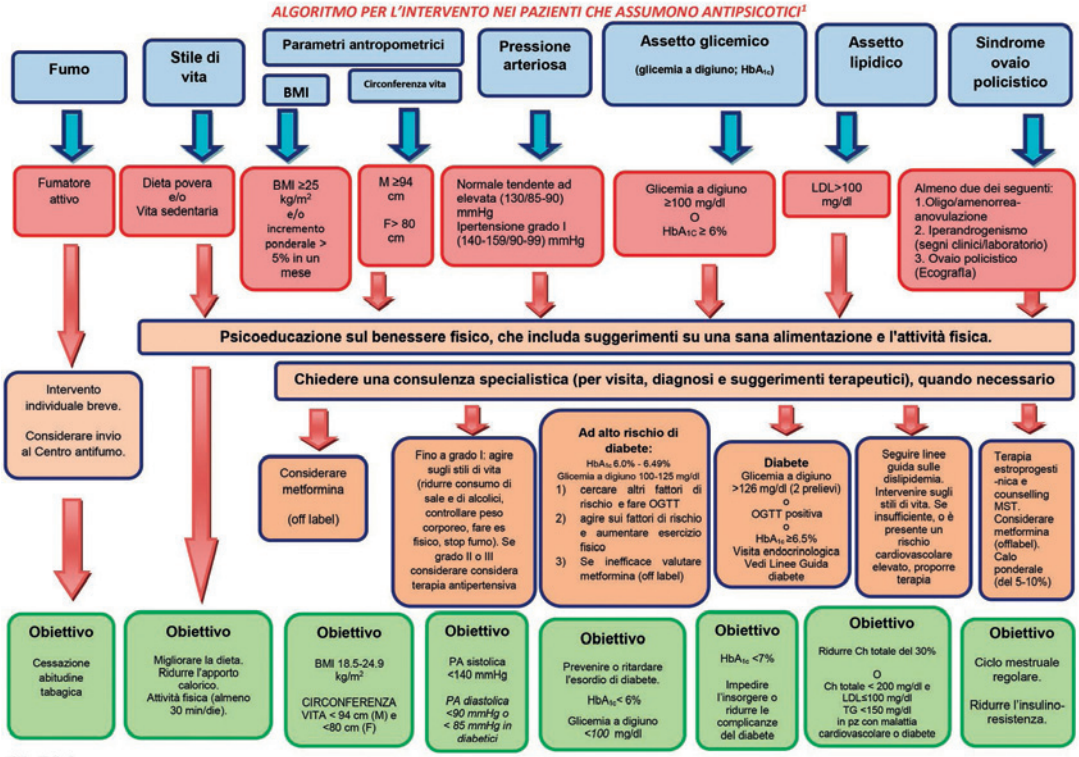
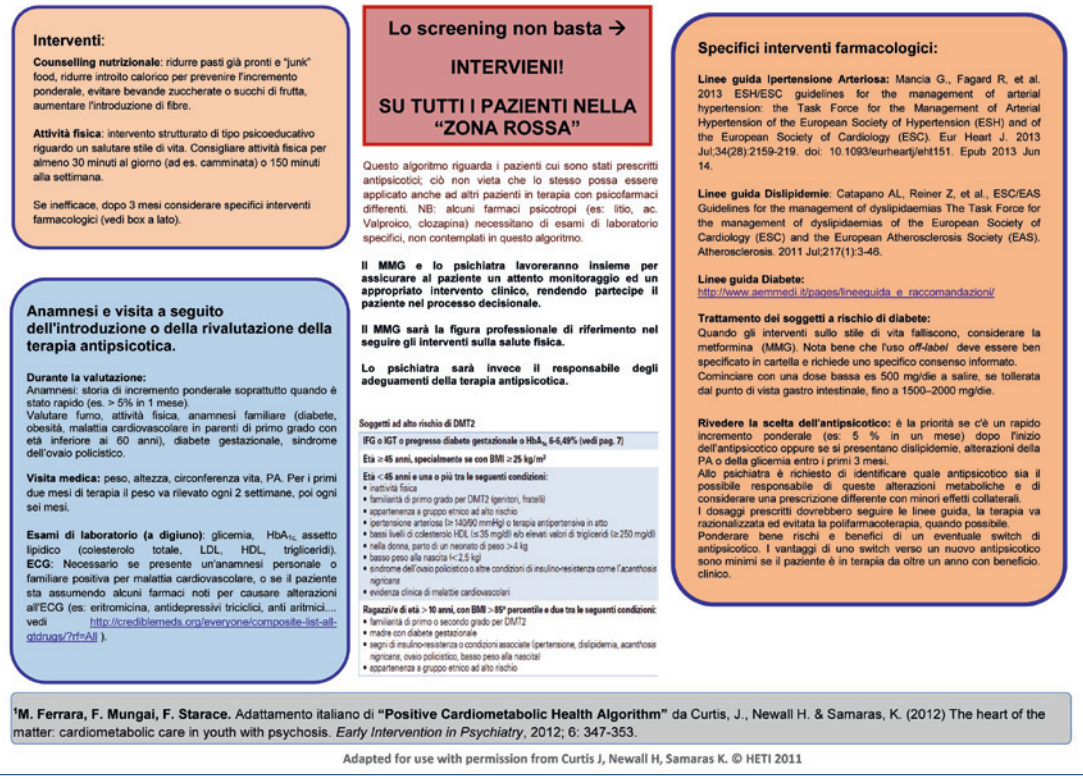
Appendix





[1]**M. Ferrara, F. Mungai, F. Starace.** Adattamento italiano di **"Positive Cardiometabolic Health Algorithm"** da Curtis, J., Newall H. & Samaras, K. (2012) The heart of the matter: cardiometabolic care in youth with psychosis. *Early Intervention in Psychiatry*, 2012; 6: 347-353.

Validation of the Italian Version of the Aberrant Salience Inventory (ASI): a New Measure of Psychosis Proneness

Validazione della Versione italiana dell'Aberrant Salience Inventory (ASI): una nuova misura per la vulnerabilità alla psicosi

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Summary

Objectives

Aberrant salience is the unusual or incorrect assignment of significance or importance to otherwise innocuous stimuli and is thought to have a crucial role in the onset of psychosis. Aberrant salience inventory (ASI) is the only self-reported questionnaire for the assessment of aberrant salience. Accordingly, the main aim of the present paper was to validate the Italian Version of the ASI.

Methods

The Italian Version of the ASI was administered to a group of 112 subjects (48 psychiatric outpatients and 64 subjects from the general population). Comparisons between patients and controls at two different times (baseline and after 15 days) were made. The relationship between ASI and the presence of psychotic symptoms, internal consistency and test-retest reliability of the Italian version of the ASI were analysed.

Results

Patients reported a higher ASI total score than controls ($p < 0.001$), while the difference in ASI total score between baseline and after 15 days was not significant. Patients with psychotic symptoms showed higher ASI total score than patients without them ($p < 0.001$). The Italian Version of the ASI showed high internal consistency (Cronbach's alpha = 0.89) and good test-retest reliability ($r = 0.96$, $p < 0.001$).

Conclusions

The Italian Version of the ASI was shown to be a valid and reliable instrument with good psychometric properties. Its usefulness in investigating aberrant salience and psychosis proneness was confirmed.

Key words

Aberrant salience • Psychotic proneness • Psychotic symptoms • Validation study

Introduction

Delusions and hallucinations are psychotic symptoms and represent a common experience, not only in people with schizophrenia-spectrum disorders, but also in those at risk for psychosis [1]. Previous research reported that the onset of psychotic disorders is often slow and gradual, with a prodromal period ranging from several weeks to several years or longer [2-5].

In this prodromal phase, patients report an unusual or incorrect assignment of salience or significance (aberrant salience) to innocuous stimuli, and this has been hypothesised to be a central mechanism in the development of psychosis [6 7]. Salience can be defined as a process whereby objects and representations, through the process of association, come to be attention-grabbing and capture thought and behaviour. During the process of "attribution of salience or significance", the features of stimuli are compared to their context and, depending on their level of "saliency", demand attention, drive action and influence goal-directed behaviour due to their association with reward or punishment [3-5].

Frequently, during the prodromal phase, stimuli that ordinarily might be considered insignificant, become much more salient and relevant. In these circumstances, salience is defined as "aberrant" [3 4]. Situations where a stimulus may be valued as salient are: feature novelty (e.g. a new object in an otherwise familiar environment); contrast (e.g. an intense light flashing in a dark room) and emotional/motivational association (e.g. a previously neutral stimulus that has been linked with reward or punishment). In particular, "motivational salience" seems to be relevant to psychosis. Actually, when a neutral stimulus is pervaded by an emotional quality, due to its associa-

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tion with primary reinforcement, influence on behaviour and cognitive functions may occur [5 6]. In 2003, Kapur [7] proposed the "aberrant salience" hypothesis of psychosis, linking the aberrant signalling of motivational salience to psychotic symptoms. Under normal circumstances, the context driven activity of the dopamine system mediates the experience of novelty and, thus, the acquisition of appropriate motivational salience [5 8-10].

It has been hypothesised that in schizophrenia, genetic predispositions and environmental perturbations (i.e. pre- and perinatal adverse events) [11] facilitate an alteration in the dopamine system, causing dopamine release, which is independent from the context. Accordingly, in the prodromal phase, a context-independent or context-inappropriate firing of dopamine neurons and dopamine release has been reported [2]. The normal process of context-driven novelty and salience attribution, mediated by dopamine, is exchanged with an aberrant and endogenously driven assignment of salience to stimuli [7].

This hypothesis is supported by a consistent body of research and is in favour of an association between psychosis and increased subcortical dopamine [12 13]. For example, brain imaging studies have reported irregular dopamine activity in people with schizophrenia, either during the active phase of psychosis [14] or in the prodromal phase of the disorder [15]. Therefore, both phenomenological and neurobiological studies sustain a role for aberrant salience in psychosis.

For these reasons, the evaluation of aberrant salience can be useful for early diagnosis, but until recently few instruments have been developed to measure it and there is only one self-report questionnaire: the aberrant salience inventory (ASI). The ASI [16] is a valid and reliable tool which measures aberrant salience in people at risk for developing psychosis. It represents a specific instrument, highly correlated with other measures of psychotic-like experiences, such as the perceptual aberration [17] and magical ideation scales [18]. Moreover, the ASI is correlated with behavioural activation, which seems to reflect increased subcortical dopamine, and is less strongly correlated with social anhedonia [16].

The ASI items were created by David C. Cicero and John G. Kerns considering phenomenological descriptions of the initial experience of psychosis [7 19-21], reports of the prodromal phase of schizophrenia [2 4 22] and transcripts of interviews of people with schizophrenia [23 24]. The language used for the item construction is simple and appropriate for the target population; double-barrelled items were avoided. A series of four studies were designed to develop and validate the questionnaire [16]. Study 1 showed that ASI is composed of five factors: feelings of increased significance, sense sharpening, impending understanding, heightened emotionality and heightened cognition. The first factor (feelings of increased significance) represents the core of Kapur's theory, relative to the increased salience to otherwise innocuous stimuli, and may be the process that drives the experience of the other four factors. The second factor includes anomalies of perception, such as subjective feelings of sharpening of senses, and aberrant salience could have a role in determining this experience [16]. The third factor, the impending understanding, indicates the experience of increased feelings of salience that lead to a breakthrough in understanding. The fourth and fifth factors, heightened emotionality and heightened cognition, are relative to the attempts of a person to understand the emotions and cognitions that accompany an aberrant salience experience, but could be more generally pre-psychotic experiences [16].

The moderate to high correlation of the above-mentioned factors was demonstrated in Study 2, where a second-order model led to the conclusion that a single second-order factor (i.e. ASI total score) conceptualises the construct of aberrant salience [16]. Study 2 reported that the ASI is correlated with many constructs, hypothesised to include its nomological network, involving magical ideation, referential thinking, perceptual aberration, dissociation and absorption. Furthermore, Study 2 supported the scale score's convergent validity, as the ASI is strongly associated with psychosis-proneness and dissociation measures, and moderately correlated with measures associated with dopamine levels [16]. This study also provided results for its discriminant validity, as the ASI is only weakly associated with social anhedonia. Study 3 reported that participants with elevated psychosis proneness had an increase in ASI scores, but, in contrast, people with high social anhedonia had scores that were similar to comparison participants [16]. Study 4 showed that subjects with a history of psychosis had elevated ASI scores in comparison with a psychiatric control group. The mean score of the ASI for patients with a history of psychosis was 15.17, while patients without a history of psychosis showed a mean of 11.50 [16]. The research also provided support for the internal consistency reliability of ASI scores (Cronbach's alpha 0.89) and demonstrated that ASI has valid psychometric properties. The ASI had a Cronbach's alpha of 0.91 in the history-of-psychosis group and 0.80 in the comparison group [16]. Thus, ASI may be useful in evaluating aberrant salience and psychosis proneness, in both clinical and nonclinical samples. No test-retest reliability was performed in the original validation study [16].

As aberrant salience has a crucial role in psychosis and an Italian Version of the ASI is lacking, the aim of this work was to translate and verify the psychometric properties of the Italian version of the ASI in a clinical sample and a healthy control group. Internal consistency, test-

retest reliability and discriminant validity have been specifically addressed.

Materials and Methods

The present study included 112 subjects, 48 consecutive psychiatric outpatients (13 with schizophrenia, 12 with major depression, 12 with bipolar disorder, 7 with anxiety disorder and 4 with eating disorder) and 64 subjects recruited from the general population.

Outpatients were attending the Psychiatric Outpatient Service of the Department of Neuroscience, Psychology, Drug Research and Child Health at the University Hospital in Florence (Italy), between September 1, 2013 and October 31, 2013. Inclusion criteria were as follows: age 18-65 years, DSM-IV-TR diagnosis [25] of any mental disorder except for mental retardation, clinically stable condition of the mental disorder in the last 3 months, no changes in pharmacotherapy in the last 3 months and no start or interruption of psychotherapy in the last 3 months. Sociodemographic data were assessed by an expert psychiatrist (A.B.) at the beginning of the visit, together with the anamnestic data. In this clinical interview the previous or present history of psychotic symptoms (hallucinations and/or delusions) was thoroughly investigated. The presence of psychotic symptoms was defined as "detected", and the absence was defined as "undetected".

Diagnosis was made with DSM-IV-TR criteria using a face-to-face interview (Structured Clinical Interview for DSM-IV-TR, SCID-I/P) [26]. Exclusion criteria were as follows: mental retardation, age < 18 years or > 65 years, severe phase of disorder with unstable clinical condition in the last 3 months, or changes in pharmacotherapy or psychotherapy in the last 3 months.

A group of 64 individuals, drawn from the general population living in the same catchment area, composed the controls and were recruited from the lists of the Italian National Health System (NHS) (99.7% of citizens are included in the list of the NHS). Controls were aged 18-65 years and did not meet DSM-IV-TR criteria for any mental disorder (evaluated by the SCID-I/NP) [27].

The Italian Translation of the ASI was carried out separately by two different official mother-tongue translators. The two Italian translations were revised and merged in order to create a final version which was back-translated in English by a third official translator. This back-translated version was compared with the original version by Cicero to verify the good quality and adequacy of the final Italian version. The ASI is a 29-item yes-no questionnaire that has five subscales measuring different aspects of the experience of aberrant salience including feelings of increased significance (e.g., Do certain trivial things suddenly seem especially important or significant to you?), sharpening of senses (e.g., Do your senses ever seem especially strong or clear?), impending understanding (e.g., Do you sometimes feel like you are on the verge of something really big or important but you aren't sure what it is?),heightened emotionality (e.g., Do you go through periods in which you feel over-stimulated by things or experiences that are normally manageable?), and heightened cognition (e.g., Do you ever feel like the mysteries of the universe are revealing themselves to you?). A Yes answer corresponds to 1 at scoring, while a No answer corresponds to zero, and thus the maximum total score is 29.

The Italian Version of the ASI was administered to all subjects at baseline (test-T0) and after 15 days (retest-T1).

The current research protocol was approved by the Ethics Committee of the Institution and the study was performed in accordance with the principles of the 1983 Declaration of Helsinki. All participants provided informed consent prior to completing the study.

Statistical analysis

Continuous variables were reported as mean ± standard deviation, whereas categorical variables were reported as percentage. For assessment of between-group differences (psychiatric patients vs. controls and patients with psychotic symptoms vs. patients without psychotic symptoms), chi-square and independent measures t-test were applied for categorical and continuous variables, respectively. A paired t-test was used to compare ASI total score at T0 and at T1.

Pearson's correlation analyses were performed to assess the test-retest reliability on ASI total score, while Spearman's rank correlation coefficients of individual ASI items were calculated at T0 and at T1. In order to measure the internal consistency of the ASI scale, Cronbach's alpha was calculated at T0 and at T1.

Statistical analyses were carried out using the Statistical Package for the Social Sciences, version 20.0 (SPSS Inc., Chicago, IL., USA).

Results

The mean age of the sample was 34.40 ± 13.27 years (controls: 31.92 ± 10.93; patients: 36.56 ± 13.96; t = -1.90; p = 0.06) and 38.4% were males (controls: 39.1%; patients: 37.5%; χ^2 = .03; p = 0.08). Mean years of education were 13.44 ± 3.97 (controls: 14.75 ± 3.42; patients: 11.61 ± 3.92; t = 4.43; p < 0.05) and 54.20% of the sample was single or divorced (controls: 76.5%; patients: 22.7%; χ^2 = 41.6; p < 0.05). Psychotic symptoms were detected in 62.5% (n = 30) of psychiatric outpatients (n = 13 schizophrenia, n = 12 bipolar disorder, n = 5 major depression), while they were not reported by any control subjects (χ^2 = 54.63; p < 0.001).

ASI mean total score at baseline (T0) was 7.52 ± 4.56

for controls and 12.48 ± 7.52 for patients (t = -4.05, p < 0.001), while after 15 days, at retest (T1), controls scored 7.33 ± 4.42 and psychiatric sample scored 12.04 ± 7.76 (t = -3.77, p < 0.001). Comparing ASI total score at T0 and at T1, in both groups, no significant difference was observed (for controls, t = 1.28, p = 0.203; for patients, t = 1.29, p = 0.200).
Test-retest reliability for ASI total score was 0.97 (p < 0.001) for controls, 0.95 (p < 0.001) for patients and 0.96 (p < .001) in the total sample. Non-parametric Spearman correlations for each item showed a strong correlation between items of ASI at T0 and at T1 (r = 0.68-0.95, p < 0.001).
Cronbach's alpha coefficient was 0.89 at T0 and 0.89 at T1, meaning a high internal consistency.
Patients with psychotic symptoms (n = 30) showed higher ASI total scores than patients without such symptoms (n = 18) (T0: 14.53 ± 7.29 vs. 7.85 ± 5.11, t = -4.62, p < 0.001; T1: 14.23 ± 7.17 vs. 7.56 ± 5.21, t = -4.66, p < 0.001). Moreover, patients without psychotic symptoms did not differ from controls, in ASI total scores at both assessments.

Discussion

The main goal of the current research was to translate and verify the internal consistency and test-retest reliability of the Italian version of the self-report questionnaire ASI. The Italian Version of the ASI demonstrated good psychometric properties, showing both high internal consistency and test-retest reliability, as well as discriminant validity.
Differing from the original validation study by Cicero, we evaluated the test-retest reliability after 15 days. During this short span of time, the patient's therapy was not modified, in order to exclude a drug-induced interference with the dopamine system linked to salience. Test-retest reliability had good results. Psychometric properties had good results both in patients and the control group [16 28].
Moreover, higher mean scores of the ASI clearly distinguish between patients from controls and patients with psychotic symptoms from patients without such symptoms, demonstrating the discriminant validity of the scale. This finding is consistent with previous observations [16] and could suggest the introduction of a cut-off score that distinguishes subjects with psychosis proneness among clinical and non-clinical populations. Cicero et al. [16] reported a mean ASI score of 13.73 in a nonclinical sample, which means that participants answered Yes to 14 items, which is in line with the results of the present study. Therefore, a score of 14 is suggested as a cut-off value.
Originally, the ASI was created to measure lifetime occurrence or trait aberrant salience in nonclinical samples. In fact, it may help identify people at risk for the development of psychosis, thus improving prevention, early diagnosis and treatment [29 30]. For these reasons, according to a dimensional approach to these symptoms [31], we sustain that this questionnaire may be useful in prevention programs both in large community samples and in clinical settings, and we suggest the inclusion of the ASI in clinical assessment.
One limitation of the study is that the total sample size was small, but data on reliability provided good results. Accordingly, a wider follow-up study should be performed in the future to evaluate if salience changes across time and different clinical stages of the disorders. Moreover, validity of the scale was not addressed in the present paper, as it was previously demonstrated by Cicero et al. [16].

Conclusions

The Italian Version of the ASI was validated and showed good psychometric properties with a Cronbach's alpha coefficient of 0.89, meaning a high internal consistency, and test-retest reliability of 0.96. Moreover, higher mean scores of the ASI clearly distinguish patients from controls and patients with psychotic symptoms from patients without such symptoms, demonstrating discriminant validity of the scale and its ability to individuate psychotic patients. The reliability and validity, simple language used, ease of administration and self-reported nature of this tool, suggests that the ASI could be used with the general population.
In fact, future and wider prevention and screening programs could adopt the ASI as a useful tool to identify subjects at risk for the development of psychosis and to isolate a cluster of subjects where a deeper and more careful psychopathological assessment is needed. It could also be of interest to follow these subjects across time in a longitudinal perspective and to analyse the clinical and psychopathological course of symptoms.
A longitudinal study design could eventually confirm the prognostic value of the aberrant salience process as a predictor of the development of psychosis.

Conflict of interest

None.

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ITALIAN VERSION OF THE ABERRANT SALIENCE INVENTORY (ASI)

Istruzioni: con questo questionario intendiamo indagare le tipologie di atteggiamento e di esperienze di vita delle persone. Il seguente questionario contiene domande proprio su questi aspetti. Per favore, risponda "SI" o "NO" facendo una crocetta dopo ciascuna domanda. Quando penserà a sé stesso e alla sua esperienza, non consideri significativi quegli atteggiamenti, sensazioni o esperienze che eventualmente avesse sperimentato sotto l'effetto di alcol o altre sostanze (ad es. marijuana, LSD, cocaina).

	Sì	No
1. Le è mai capitato che alcune cose di poco conto le siano apparse improvvisamente importanti o significative?		
2. Le succede, talvolta, di sentirsi come alla soglia di qualcosa di veramente grande, ma non è sicuro di che cosa si tratti?		
3. Le capita, qualche volta, che le sue capacità sensoriali le sembrino acute?		
4. Si è mai sentito come se stesse rapidamente per raggiungere il massimo delle sue capacità intellettive?		
5. Le capita, qualche volta, di prestare attenzione a certi dettagli non notati in precedenza che vengono ad assumere un certa rilevanza per lei?		
6. Le succede di sentirsi come se ci fosse qualcosa di importante (per lei) da capire, ma non è sicuro di che cosa si tratti?		
7. Ha mai passato periodi in cui si è sentito particolarmente religioso o contemplativo?		
8. Ha mai avuto difficoltà a distinguere se si sente eccitato, spaventato, sconcertato o in ansia?		
9. Ha mai attraversato dei periodi di maggiore consapevolezza sulle cose?		
10. Ha mai sentito il bisogno di dare un senso a situazioni o avvenimenti apparentemente casuali?		
11. Qualche volta le capita di sentirsi come stesse trovando il pezzo mancante di un puzzle?		
12. A volte si sente come se potesse udire le cose con maggior chiarezza?		
13. A volte si sente come se fosse una persona particolarmente evoluta dal punto di vista spirituale?		
14. Osservazioni di norma insignificanti, a volte assumono per lei un significato infausto?		
15. Attraversa dei periodi in cui le canzoni talvolta assumono significati rilevanti per la sua vita?		
16. Qualche volta le capita di sentirsi sul punto di comprendere qualcosa di veramente grande o importante, ma non sa con certezza cosa sia?		
17. Il suo senso del gusto le è mai sembrato più fine?		
18. Ha mai avuto la sensazione che i misteri dell'universo fossero sul punto di rivelarsi a lei?		
19. Le capita di passare periodi in cui si sente eccessivamente stimolato da oggetti o esperienze che normalmente sono gestibili?		
20. Rimane spesso affascinato dalle piccole cose che la circondano?		
21. I suoi sensi le sembrano mai estremamente spiccati o chiari?		
22. Si sente mai come se un intero mondo le si stesse rivelando?		
23. Si è mai sentito come se i confini fra le sue sensazioni interne ed esterne fossero stati tolti?		
24. Qualche volta le succede di avere la sensazione che il mondo stia cambiando e che lei debba trovare una spiegazione?		
25. Ha mai percepito un significato travolgente in cose che normalmente per lei non sono significative?		
26. Hai mai sperimentato una sensazione inesprimibile di urgenza in cui non era sicuro sul da farsi?		
27. Le è mai capitato di sviluppare un particolare interesse per persone, eventi, luoghi o idee che normalmente non attirerebbero in quel modo la sua attenzione?		
28. Le capita mai che i suoi pensieri e le sue percezioni diventino troppo rapidi per essere ben assimilati?		
29. A volte nota cose a cui non aveva prestato attenzione in precedenza e che invece vengono ora ad assumere un significato speciale?		

Italian version of the "Specific Level of Functioning"

Versione italiana della "Specific Level of Functioning"

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Summary

Objectives

The assessment of real-life functioning presents complex challenges from variability in the operational definition of functional outcome to problems in identifying optimum information sources. In this context, there are still few satisfactorily reliable instruments for the assessment of functional outcomes that are practical in terms of time involved, and most real-life functional outcome scales seem to be largely redundant with each other when utilised simultaneously. The Validation of Everyday Real-World Outcomes (VALERO) Study selected six functional outcome scales from a much larger group of candidate scales as most suitable for current use. The Specific Levels of Functioning (SLOF) Scale was one of these and was considered to be a hybrid scale rating multiple functional domain. This scale has been translated into Italian by our group, and the translation is presented herein.

Methods

In the context of the multicentre study of the Italian Network for Research on Psychoses, the SLOF was translated in Italian by two psychiatrists and then back-translated. A formal assessment of semantic equivalence, debriefing of conventional sample and final review by experts were carried out. The operational equivalence was taken into account, which preserves the original features.

Results

The Italian version of the SLOF is a 43-item multidimensional behavioural survey comprising six subscales: (1) physical functioning, (2) personal care skills, (3) interpersonal relationships, (4) social acceptability, (5) activities of community living and (6) work skills. It is administered in person to the caseworker or caregiver of a schizophrenic patient or a patient-administered scale completed with verbal instructions from the examiner to rate its own performance. The scale does not include items relevant to psychiatric symptomatology or cognitive dysfunctions, but assesses the patient's current functioning and observable behaviour, as opposed to inferred mental or emotional states, and focuses on a person's skills, assets, and abilities rather than deficits that once served as the central paradigm guiding assessment and intervention for persons with disabilities.

Conclusions

Ratings on individual items of the SLOF may be used to capture the current state of overall functioning while showing specific areas of therapeutic and rehabilitative need. Moreover, the SLOF has direct applications in research on patient outcomes and evaluation of programmes.

Introduction

Despite significant advances in pharmacological and psychological treatments, patients with schizophrenia show impairment in everyday functioning, with deficiencies in social, cognitive and real-life activities, including independent living, productive activities and social relationships, that are detectable at the time of the first episode of illness and commonly observed in patients through the course of illness, even among patients who respond to antipsychotics and have only residual psychotic symptoms [1-3]. The assessment of real-life functioning presents complex challenges from variability in the operational definition of functional outcome to problems in identifying optimum information sources [4]. Indeed, many different strategies have been proposed to assess real-life functioning, including self-report interviews, proxy reports, informant interviews [4], direct observations by trained clinicians [5], and performance-based measures, which assess functional capacity ("what the individual can do under optimal conditions") [6]. However, reports of real-life outcomes vary across informants and contain elements of error or shortcomings [4]. It has been suggested that self-reports should be accepted at face value even if they reflect patients' delusional beliefs [7] and have limitations such as inaccurate estimations [8]. Other investigators have highlighted the potential for psychotic symptoms, mood states, disorganised thinking, lack of insight, and neurocognitive deficits to limit the usefulness of the self-report methodology in severely ill schizophrenia patients. Furthermore, it has been suggested that these measures

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may not adequately reflect the effects of various interventions [9]. However, studies have shown that patient self-reports of everyday functioning in schizophrenia often do not converge with objective evidence or the reports of others [10 11]. Self-reports of functioning therefore appear problematic, and alternative assessment methods may be required. However, many patients have no caregivers to provide information, and variance in their reports can be influenced by the amount of contact with the subject and situation specificity of the observation. High contact clinicians appear to generate ratings of everyday functioning that are more closely linked to patients' ability scores than friends or relative informants [12]. Both types of direct assessment (direct observation versus analogue assessment) have advantages and limitations. Real-life observations are necessarily individualised and non-standardised as well as costly and potentially reactive (presence of an observer may alter the environment and resulting behaviours). To this end, performance-based measures of functional capacity have been developed. However, they are valid to the extent that they measure the relevant skills accurately, but other factors may influence real-life outcomes, such as financial resources, motivation and symptoms of the illness may limit the extent to which skills that are present in the behavioural repertoire are actually performed in real-life settings [13].

Overview of everyday real-life outcomes

In this context, research efforts are increasingly turning to the design, evaluation and improvement of relatively economical real-life measurement [14-16]. Moreover, given concerns about length and ease of administration, as well as burden to the subject for assessment batteries, a practical measure must be both cost efficient and require a modest amount of time to administer [14]. However, there are still few satisfactorily reliable instruments for the assessment of functional outcomes that are practical in terms of time involved, and most real-life functional outcome scales seem to be largely redundant with each other when utilised simultaneously. One upshot of this situation is the Validation of Everyday Real-World Outcomes in schizophrenia (VALERO Expert panel) initiative. This project represents a joint effort between researchers at Emory University and the University of California, San Diego. The goal of this initiative was to identify the functional rating scale or scales (or subscales from existing scales) (self-report and informant-based reports) most strongly related to performance-based measures of cognition and everyday living skills through a comprehensive evaluation of existing instruments [4]. Forty-eight experts were asked to nominate the scales that they think best measure everyday outcomes in schizophrenia. The outcomes may include social, vocational, independent living, self-care, or any combination of these. The scale characteristics, which were rated by the panellists and were similar to those deemed important in the MATRICS process, were: reliability (test-retest and interrater), convergence with performance-based measures of functional capacity and neurocognitive performance, sensitivity to treatment effects, usefulness for multiple informants (e.g., self, friend or relative, case manager, or prescriber), relationships with symptom measures, practicality and tolerability for people with low education levels, and convergence with other measures of real-life functional outcomes (including either other rating scales or achievement milestones). Among the 59 measures nominated, the investigators selected the 11 scales that were the most highly nominated, had the most published validity data regarding their psychometric qualities and best represented the domains of interest (social functioning, everyday living skills, or both these areas -"hybrid" scales). Scales were rated on a 9-point (1-9) scale, where scores of 1-3 were poor, 4-6 were fair to good and 7-9 were very good to superb.

The two scales that scored highest across the various criteria for each of the classes of scales (hybrid, social functioning, and everyday living skills) were selected for use in the first substudy of VALERO [4]. The scales selected were the Quality-of-Life Scale, Specific Levels of Functioning Scale, Social Behavior Schedule, Social Functioning Scale, Independent Living Skills Schedule, and Life Skills Profile. The overall results of this first substudy of VALERO show that all examined scales can be considered as somewhat useful in their current versions. Moreover, many of these scales lack critical data regarding reliability across investigators and relationship with neuropsychiatric and functional capacity performance. Ratings for usefulness across multiple raters were also quite low, partly because many of these scales do not have alternate forms that attempt to capture the differing perspectives of different raters. As an entirely effective measure of the real-life outcomes component of the functional outcomes construct has not yet been identified, some measures are likely to be suitable in the interim. Thus, comprehensive real-life functioning assessment, using self-report, informant report and interviewer best judgment across six different real-life functioning rating scales may be required to capture the complexity of functional outcome in schizophrenia [13]. However, a through description of these scales is beyond the scope of this paper, in which we focused on the Specific Level of Functioning.

The Specific Levels of Functioning (SLOF) Scale [17] is a 43-item multidimensional behavioural survey administered in person to the caseworker or caregiver of a schizophrenic patient, selected on the basis of his/her familiarity with that person or a patient-administered scale completed with verbal instructions from the examiner to rate its own performance. The scale does not include items

relevant to psychiatric symptomatology or cognitive dysfunctions, but assesses the patient's current functioning and observable behaviour, as opposed to inferred mental or emotional states, and focuses on a person's skills, assets, and abilities rather than deficits that once served as the central paradigm guiding assessment and intervention for persons with disabilities. It comprises six subscales: (1) physical functioning, (2) personal care skills, (3) interpersonal relationships, (4) social acceptability, (5) activities of community living and (6) work skills. The work skills domain comprises behaviours important for vocational performance, but is not a rating of behaviour during employment. The latter would not be feasible, since the majority of patients with schizophrenia are unemployed; therefore, the proxy measure of work skills from the SLOF is used. Lastly, the SLOF also includes an open-ended question asking the informant if there are any other areas of functioning not covered by the instrument that may be important in assessing functioning in this patient. Each of the questions in the above domains is rated on a 5-point Likert scale. Scores on the instrument range from 43 to 215. The higher the total score, the better the overall functioning of the patient. According to the original version of the SLOF, the time frame covered by the survey is the past week. Each informant is asked to rank how well they know the patient on a 5-point Likert scale ranging from "not well at all" to "very well." Ratings on individual items of the SLOF may be used to capture the current state of overall functioning while showing specific areas of therapeutic and rehabilitative need, i.e. to identify goals in planning treatment for clients, to develop special intervention or skill-training programs, or to assign clients with similar or complementary strengths and needs to existing programmes. An adaptation of the SLOF is to allow patients to rate themselves on each item, while staff make independent judgments. Patients and staff then share their ratings, discuss discrepancies and negotiate a mutually acceptable set of functionally oriented goals for the plan. This process also could serve as a form of quality assurance, allowing patients and staff to obtain potentially valuable feedback about the patients' self-perceptions and help staff to gauge better the accuracy of their judgments [17]. Lastly, the SLOF has direct applications in research on patient outcome and programme evaluation.

SLOF: psychometric features

The SLOF was found to be a reliable and valid scale, with a good construct validity and internal consistency, as well as a stable factor structure.

In the context of a multicentre study of the Italian Network for Research on Psychoses, Mucci et al. [18] explored the construct validity, internal consistency and factor structure of the Italian version of the SLOF. The Italian version of the SLOF [18] is derived from the original SLOF, and has also demonstrated good psychometric properties, maintaining the same factorial structure as the original [17] in a much larger (n=895) and more homogenous (community sample) sample. The six factors identified (Activities, Interpersonal relationships, Work skills, Personal care skills, Social acceptability, and Physical functioning) explained 57.1% of the item variance, comparable to the one reported in the original study for community sample (58%). The variance explained by each factor was respectively 30.7%, 7.7%, 6.2%, 5.0%, 4.2% and 3.3% (expressed as percentage of the total variance, these figures correspond to 53.8%, 13.5%, 10.8%, 8.7%, 7.3% and 5.8%, respectively). The factor order is equivalent between the study by Mucci et al. [18] and the original one, as the Social acceptability and Physical functioning factors explain the lowest amount of variance. The inter-rater reliability for each of the six domains has shown a good to excellent agreement among raters, being higher in the community than in the hospital samples. Moreover, the authors of the scale recommend that to foster the SLOF inter-rater reliability, assessments should be performed by an informant who knows "well" the client's skills and behaviour. Thus, in case of hospitalised patients, he/she should not be assessed immediately following entry into an agency, but only after staff have interacted with him or her several times and observed the individual in many situations and circumstances [17].

SLOF: Italian translation

In the context of the multicentre study of the Italian Network for Research on Psychoses the instrument was translated in Italian (two independent translations of the scale were made by two psychiatrists; PR and AM, experienced in this area, fluent in English, and able to identify the concept covered by each of the original items) and then back-translated, according to the method proposed by Herdman et al. [19]. A formal assessment of semantic equivalence, a debriefing of conventional sample and a final review by experts were carried out. The operational equivalence was taken into account, which preserves the original features. For this purpose, we kept the same number of fields, same statements and same option of scoring and qualification.

This is the first comprehensive English language report on the development of the Italian version of the SLOF.

In Appendix A the Italian translation of the SLOF is presented.

Conflict of interest

None.

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APPENDIX A
Specific level of functioning assessment and physical health inventory

INFORMAZIONI SUL VALUTATORE
Nome del valutatore:

_____

(per cortesia in stampatello)

Posizione accademica del valutatore:

_____

Data in cui è stato compilato il questionario:

_____

INFORMAZIONI SUL SOGGETTO
Nome del soggetto:

_____

Data di nascita: _____

Sesso: ☐ Maschio ☐ Femmina

Indirizzo: _____

_____

Questa persona è in grado di parlare, leggere e comprendere l'italiano? ☐ Sì ☐ No

In caso di risposta negativa, quale lingua o adattamenti la persona solitamente richiede?

_____

(specificare)

Nelle pagine che seguono le sarà chiesto di formulare alcuni giudizi sulle capacità e abilità di questo individuo. Si prega di ricordare che le sue risposte dovrebbero riflettere ciò che è stato più caratteristico dell'individuo durante la scorsa settimana, il modo in cui l'individuo è stato per la maggior parte del tempo. Pertanto, la sua valutazione non si deve limitare solo a come stava l'individuo l'ultima volta in cui l'ha visto. Il suo punteggio si ripercuoterà sul servizio che questa persona riceverà, per cui è essenziale che si avvalga delle informazioni su come stava abitualmente l'individuo la settimana precedente.

Basi le sue risposte su come le persone di simili età, sesso e bagaglio culturale gestiscono queste attività nella normale vita quotidiana. Non usi il suo programma o struttura come unica base per il confronto. Siamo più interessati a come l'individuo si gestisce al di fuori del programma previsto per lui rispetto a come aderisce ad esso.

Utilizzi il buon senso. I seguenti item non sono tecnici o complessi, nel formulare la sua valutazione ricorra alle conoscenze in suo possesso.

Questa valutazione è stata adattata dalla *New Jersey Specific Level of Functioning* e della *New York Level of Care*.
Istruzioni: Verifichi quale numero meglio descrive il caratteristico livello di funzionamento del soggetto per ogni voce elencata sotto. Sia il più accurato possibile. Se non è sicuro rispetto ad un determinato punteggio, chieda a qualcuno che conosce il paziente o consulti la cartella clinica.

Segni un solo numero per ogni voce, controlli di aver contrassegnato tutte le voci.

CURA DI SÉ

A. Condizione fisica	Nessun problema	Crea problematiche, senza effetto sul funzionamento generale	Minimo effetto sul funzionamento generale	Limita in gran parte il funzionamento generale	Ostacola il funzionamento generale
1. VISTA	5	4	3	2	1
2. UDITO	5	4	3	2	1
3. COMPROMISSIONE DELL'ELOQUIO	5	4	3	2	1
4. DEAMBULAZIONE, USO DELLE GAMBE	5	4	3	2	1
5. UTILIZZO DI MANI E BRACCIA	5	4	3	2	1
B. Competenze nella cura di sé	**Totalmente autosufficiente**	**Necessita di un suggerimento verbale o di consigli**	**Necessita di un aiuto fisico o di assistenza**	**Necessita di un aiuto considerevole**	**Totalmente dipendente**
6. ANDARE ALLA TOILETTE *(usa correttamente la toilette, mantiene puliti sé e lo spazio)*	5	4	3	2	1
7. ALIMENTAZIONE *(utilizza gli utensili correttamente, abitudini alimentari)*	5	4	3	2	1
8. IGIENE PERSONALE *(corpo e denti, pulizia generale)*	5	4	3	2	1
9. VESTIRSI DA SOLI *(seleziona capi di abbigliamento adeguatamente; si veste autonomamente)*	5	4	3	2	1
10. CURA DELLA PROPRIA PERSONA *(capelli, trucco, aspetto generale)*	5	4	3	2	1
11. CURA DEI PROPRI BENI	5	4	3	2	1
12. CURA DEL PROPRIO SPAZIO VITALE	5	4	3	2	1

FUNZIONAMENTO SOCIALE

C. Relazioni interpersonali	Molto caratteristico di questa persona	Generalmente caratteristico di questa persona	Moderatamente caratteristico di questa persona	Generalmente atipico per questa persona	Molto atipico per questa persona
13. TOLLERA I CONTATTI CON GLI ALTRI *(non si allontana o respinge)*	5	4	3	2	1
14. STABILISCE I CONTATTI CON GLI ALTRI	5	4	3	2	1
15. COMUNICA IN MODO EFFICACE *(discorso e gestualità comprensibili e attinenti)*	5	4	3	2	1
16. PARTECIPA ALLE ATTIVITÀ SENZA SUGGERIMENTI	5	4	3	2	1
17. PARTECIPA A GRUPPI	5	4	3	2	1
18. ALLACCIA E MANTIENE LE AMICIZIE	5	4	3	2	1
19. CHIEDE AIUTO QUANDO NECESSITA	5	4	3	2	1
D. Accettabilità sociale	**Mai**	**Raramente**	**Qualche volta**	**Di frequente**	**Sempre**
20. ABUSI VERBALI	5	4	3	2	1
21. ABUSI FISICI	5	4	3	2	1
22. DISTRUGGE BENI	5	4	3	2	1
23. È AGGRESSIVO FISICAMENTE VERSO SE STESSO	5	4	3	2	1
24. HA PAURA, PIANGE, È APPICCICOSO	5	4	3	2	1
25. SI APPROPRIA DI BENI ALTRUI SENZA AUTORIZZAZIONE	5	4	3	2	1
26. REITERA I COMPORTAMENTI *(passi, oscillazioni, rumori, ecc.)*	5	4	3	2	1

COMPETENZE IN AMBITO COMUNITARIO					
E. Attività	**Totalmente autosufficiente**	**Necessita di suggerimenti o consigli verbali**	**Necessita di un aiuto fisico o di assistenza**	**Necessita di un aiuto sostanziale**	**Totalmente dipendente**
27. RESPONSABILITÀ DOMESTICHE *(pulizia della casa, cucinare, lavare vestiti, ecc.)*	5	4	3	2	1
28. ACQUISTI *(selezione di articoli, scelta di negozi, pagamento di cassa)*	5	4	3	2	1
29. GESTIONE DELLE PROPRIE FINANZE *(gestione del budget, pagamento delle bollette)*	5	4	3	2	1
30. USO DEL TELEFONO *(trovare il numero, digitare il numero, conversazione, ascolto)*	5	4	3	2	1
31.ALLONTANAMENTO DALLA PROPRIA ABITAZIONE SENZA PERDERSI	5	4	3	2	1
32. UTILIZZO DEI TRASPORTI PUBBLICI *(selezionare percorso, usare gli orari, pagare tariffe, effettuare i trasferimenti)*	5	4	3	2	1
33. IMPIEGO DEL TEMPO LIBERO *(letture, visite agli amici, ascoltare musica, ecc.)*	5	4	3	2	1
34. RICONOSCERE ED EVITARE PERICOLI COMUNI *(traffico, incendio, ecc.)*	5	4	3	2	1
35.AUTOMEDICAZIONE *(comprendere lo scopo, assumere come prescritto, riconoscere gli effetti collaterali)*	5	4	3	2	1
36. UTILIZZO DEI SERVIZI MEDICI E DI COMUNITÀ *(sapere a chi rivolgersi, come e quando usarli)*	5	4	3	2	1
37. LETTURA DI BASE, SCRITTURA E CALCOLO *(sufficiente per le necessità quotidiane)*	5	4	3	2	1
F. Capacità lavorative	**Molto caratteristico di questa persona**	**Generalmente caratteristico di questa persona**	**Moderatamente caratteristico di questa persona**	**Generalmente atipico per questa persona**	**Molto atipico per questa persona**
38. POSSIEDE COMPETENZE LAVORATIVE	5	4	3	2	1
39. LAVORA CON UNA SUPERVISIONE MINIMA	5	4	3	2	1
40. SOSTIENE GLI SFORZI LAVORATIVI *(non si distrae facilmente, è capace di lavorare sotto stress)*	5	4	3	2	1
41. SI PRESENTA AGLI APPUNTAMENTI PUNTUALE	5	4	3	2	1
42. SEGUE ACCURATAMENTE LE ISTRUZIONI VERBALI	5	4	3	2	1
43. COMPLETA I COMPITI ASSEGNATI	5	4	3	2	1

ALTRE INFORMAZIONI

44. In base alla conoscenza di questa persona, ci sono altre abilità o aree problematiche non contemplate da questo questionario e rilevanti ai fini della capacità di questa persona di operare in modo indipendente? Se è così, si prega di specificare.

_____
_____
_____
_____
_____

45. Quanto bene conosce le capacità e il comportamento della persona che ha appena valutato? (Barrare una casella)

MOLTO BENE		ABBASTANZA BENE		PER NULLA
5	4	3	2	1

46. Ha discusso questa valutazione con il soggetto? (Barrare una casella)	☐ Sì	☐ No
Se SÌ, l'individuo concorda generalmente con la valutazione? (Barrare una casella)	☐ Sì	☐ No

Se NO, si prega di commentare

_____
_____
_____
_____
_____

Firma del valutatore _____

STATO DI SALUTE FISICA

Istruzioni: Metta una X in tutte le caselle che descrivono il soggetto.

Problema attuale di salute fisica dell'individuo
❑ Nessuno
❑ Arteriosclerosi cardiaca
❑ Ipertensione
❑ Altro disturbo circolatorio
❑ Gravi problemi respiratori
❑ Diabete
❑ Obesità
❑ Artrite
❑ Ulcera da decubito (piaghe da decubito)
❑ Crisi convulsive (epilessia)
❑ Disturbo gastro-intestinale
❑ Sindrome organica cerebrale
❑ Evento cerebrovascolare- Stroke
❑ Deficit visivi
❑ Cecità
❑ Compromissione dell'udito
❑ Compromissione del linguaggio
❑ Frattura
❑ Disturbo uro-genitale
❑ M. di Huntington
❑ M. di Alzheimer
❑ M. di Parkinson
❑ Discinesia tardiva
❑ Malattia neoplastica
❑ Altro

Sussidi (per la salute fisica) usati o richiesti dal singolo
❑ Nessuno
❑ Occhiali
❑ Protesi uditive
❑ Dentiera
❑ Altro

Procedure qualificate di cura richieste dall'individuo
❑ Nessuna
❑ Valutazione quotidiana segni vitali
❑ Trattamento insulinico
❑ Prevenzione delle piaghe da decubito
❑ Trattamento delle ulcere da decubito
❑ Gestione di catetere/stomia
❑ Mantenimento delle condizioni di asepsi mediante abbigliamento idoneo
❑ Fisioterapia
❑ Fisioterapia riabilitativa per l'incontinenza
❑ Irrigazione della lesione
❑ Aspirazione secrezioni
❑ Terapia inalatorie
❑ Nutrizione parenterale
❑ Nutrizione enterale
❑ Altro

Incontinenza urinaria
❑ Mai
❑ Meno di una volta al giorno
❑ Solo notturna
❑ 1-3 volte al giorno
❑ Più di 3 volte al giorno
❑ Uso del catetere

Incontinenza fecale
❑ Mai
❑ Meno di una volta al giorno
❑ Una volta al giorno
❑ Più di una volta al giorno
❑ Portatore di colonstomia

Quali delle seguenti opzioni descrive meglio la deambulazione dell'individuo
❑ Completamente indipendente
❑ Usa un bastone o un deambulatore
❑ Instabile
❑ Cammina solo con l'assistenza del personale

Uso della sedia a rotelle
❑ Indipendente
❑ Sta sulla sedia a rotelle o necessita di un supporto
❑ Deve essere spinto
❑ Sta a letto

Cura della propria persona

Fare il bagno:
❑ Completamente indipendente
❑ Ha bisogno di solleciti
❑ Ha bisogno di supervisione
❑ Ha bisogno di moderata assistenza fisica
❑ Ha bisogno di molta assistenza fisica
❑ Ha bisogno di una cura completa

Vestirsi:
❑ Completamente indipendente
❑ Ha bisogno di solleciti
❑ Ha bisogno di supervisione
❑ Ha bisogno di moderata assistenza fisica
❑ Ha bisogno di molta assistenza fisica
❑ Ha bisogno di una cura completa

Prepararsi:
❑ Completamente indipendente
❑ Ha bisogno di solleciti
❑ Ha bisogno di supervisione
❑ Ha bisogno di moderata assistenza fisica
❑ Ha bisogno di molta assistenza fisica
❑ Ha bisogno di una cura completa

Mangiare:
❑ Completamente indipendente
❑ Ha bisogno di solleciti
❑ Ha bisogno di supervisione
❑ Ha bisogno di moderata assistenza fisica
❑ Ha bisogno di molta assistenza fisica
❑ Ha bisogno di una cura completa

Usare il bagno:
❑ Completamente indipendente
❑ Ha bisogno di solleciti
❑ Ha bisogno di supervisione
❑ Ha bisogno di moderata assistenza fisica
❑ Ha bisogno di molta assistenza fisica
❑ Ha bisogno di una cura completa

Commenti:
(Specifichi e descriva le aree che richiedono una valutazione al fine di determinare il grado di assistenza che l'individuo necessita)
_____
_____
_____
_____

Firma del valutatore _____

Titolo accademico _____

Data di compilazione _____

Autism Rating Scale (ARS) – Italian version

Scala di Valutazione dell'autismo – versione italiana

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Summary

The autism rating scale (ARS) is an instrument intended to investigate the personal level of experience of individuals with schizophrenia in real-life social situations. It originates from previous qualitative analyses based on in-depth interviews with persons with schizophrenia in clinical and research settings. The Italian adapted version of the ARS is herewith presented, and a brief description of the instrument is reported. The procedures followed for translation, adaptation and training of researchers are described. Lastly, the results on inter-rater reliability are shown.

Key words

Autism • Phenomenology • Psychopathology • Schizophrenia • Social dysfunction • Subjective experience

Introduction

Impairment of social functioning is present in the majority of patients with schizophrenia. It has been observed that such impairment is not a direct consequence of clinical symptoms and that it influences the course and outcome of the disease [1 2]. The de-structuring of social life (Criterion B of DSMs) is considered a basic diagnostic characteristic of the syndrome [1 2] and has been hypothesised to represent one of the fundamental phenomena of schizophrenia [3-5].

Psychosocial dysfunction is a complex construct that is difficult to define and assess. It includes a variety of heterogeneous domains, such as personal care, interpersonal relationships, education and occupation. Moreover, functional deficits are mainly considered in a behavioural perspective, and therefore assessed as a quantitative reduction in performance [6].

In a phenomenological perspective, more specific characterisation of the basic disturbance of social relations in schizophrenia has been proposed, with the introduction of the concept of *dis-sociality* [6]. This term underlines the qualitative alteration of social competence by going beyond the strictly behavioural-functionalist perspective. It reflects a disturbance of participation in social life related to phenomena such as those included in the concept of autism, e.g., the tendency to rumination not oriented towards reality, rigid adherence to idiosyncratic ideas, the emergence of a deviant hierarchy of values, aims and ambitions [7-9], as well as anomalies in attunement and common sense [10-12]. Therefore, reliable assessment of "schizophrenic autism" may help to clarify one of the fundamental phenomena for the understanding of schizophrenia.

Towards this aim, the autism rating scale (ARS) [13] has been developed to investigate the subjective experience of individuals with schizophrenia in real-world social encounters by collecting soft phenomena that are traditionally not included in checklists. The scale originates from previous qualitative analyses based on in-depth interviews with persons with schizophrenia in clinical and research settings [14-18]. The result has been a rich and detailed collection of patients' self-descriptions related to emotional attunement/disattunement, self-other demarcation/non-demarcation, emotion recognition/non-recognition, emotional/cognitive attitude towards others, endorsement/refusal of social norms, etc. The authors of the scale created a database using patients' self-reports from which different categories were developed, based on structural similarities among social abnormal phenomena. On the basis of these data, the original version of the scale was developed. It is a semi-structured interview including 16 distinctive items grouped in 6 categories: hypo-attunement, invasiveness, emotional flooding, algorithmic conception of sociality, antithetical attitude toward sociality and idionomia. The interviewer should use the prompts selected for each item to elicit spontaneous narratives. The patient's narratives should be written verbatim. A detailed description of each category and item is provided in the interview together with a list of examples consisting in sentences collected by patient interviews.

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The Italian version of the ARS is presented herewith. A brief description of the instrument is reported, the procedures followed for translation and adaptations of the interview are illustrated and the training of researchers, as well as the results on reproducibility, are reported.

Description of the ARS

The ARS assesses "What it is like" to be a person with schizophrenic autism in the social world. It explores the subjective experience of inter-personal relationships, contacts and social situations in daily life in the last three months. The scale focuses on all kinds of "real-life social situations", e.g. home, work, school, leisure, friendship, etc. Behaviours are also explored as they may be suggestive of qualitatively and quantitatively altered social experience, e.g. diminished social interests, interactions, reduced interpersonal involvement, loss of naturalness in social contacts, refusal of interpersonal bonds, new or unusual preoccupation with existential, metaphysical, religious, philosophical, or psychological themes, lack of delicacy or tact in social contexts, etc.
The ARS includes 16 distinctive items grouped in 6 categories: hypo-attunement, invasiveness, emotional flooding, algorithmic conception of sociality, antithetical attitude toward sociality and idionomia. Severity is scored by taking into account frequency, intensity of subjective arousal or distress, level of impairment and possibility to cope. The interview takes from 30 to 60 minutes.

Translation and adaptation of the Italian version

The ARS was translated into Italian by two authors of the original version (GS and MB), both native Italian speakers. For this reason, the back-translation into English was not performed.
The adaptation of the Italian version is the result of some meetings between the two Italian authors of the original version (GS and MB) and a group of researchers from the Department of Psychiatry of the University of Naples SUN including two expert senior psychiatrists (SG and AM) and three evaluators: a young psychiatrist attending a PhD course (MC) and two trainees in psychiatry (PP and GF), all with extensive experience in the administration of clinical interviews and a solid background in psychopathology. In the first meeting, the authors illustrated the first draft of the Italian version to the three evaluators and trained them on administration and scoring of the interview. During a further meeting, devoted to the discussion of all observations arising from the administration of the questionnaire to 10 healthy controls and 6 patients with schizophrenia, several changes were made.
In the Italian version of the scale, compared to the original one, a more common lexicon was adopted. The interview was organised in a more structured way by suggesting 1 to 5 questions to explore each item; the positive answer to one of the suggested questions is sufficient to consider that item fulfilled.
The manual was enriched with the addition of some more "related clinical manifestations" and more examples of sentences collected from the interviews conducted with Italian subjects.
The Italian version of ARS is attached in the appendix.

Training of evaluators and assessment of inter-rater reliability

One of the authors (MB) illustrated the final adapted Italian version to the three evaluators. He conducted three interviews with patients affected by schizophrenia to be used as training material. Over the following days, the ARS was administered by the raters to 5 patients with a diagnosis of schizophrenia according to the DSM-IV. They rotated in conduction of the interview, but all attributed an independent scoring.
The inter-rater reliability (IRR) was formally evaluated by calculating the intraclass correlation coefficient (ICC). Excellent agreement was observed among raters (ICC ranging from 0.75 and 0.97) (Table I).
The validation of the scale in a wider sample of patients with schizophrenia was started and is still ongoing.

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TABLE I.
Results of Inter-rater reliability on the items of the Autism Rating Scale – Italian version. *Risultati della riproducibilità tra valutatori per gli item della Scala di Valutazione dell'Autismo – versione italiana dell'Autism Rating Scale.*

ARS – Autism Rating Scale	ICC
Hypo-attunement	
1.1 Distance, detachment or lack of resonance	0.747
1.2 Inexplicability or incomprehensibility	0.856
1.3 Radical uniqueness and exceptionality	0.818
Invasiveness	
2.1 Immediate feeling of hostility or oppression coming from the others	0.815
2.2 Immediate feeling of lack of self/other boundaries	0.977
2.3 Hyper-empathic experiences	0.981
Emotional flooding	
3.1 Emotional paroxysms in front of others	0.941
3.2 Coenesthetic paroxysms in front of others	0.750
Algorithmic conception of sociality	
4.1 Observational – ethologically oriented –attitude	0.944
4.2 Pragmatic – need-for-interplay oriented –attitude	0.922
4.3 Speculative – theoretically oriented – attitude	0.749
Antithetical attitude toward sociality	
5.1 Antagonomia as refuse of social shared knowledge and assumptions	0.959
5.2 Antagonomia as distrust toward attunement with others	0.887
5.3 Abstract idealization	0.909
Idionomia	
6.1 Charismatic Concerns	0.960
6.2 Metaphysical Concerns	0.761

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Appendice

Scala di Valutazione dell'Autismo – versione italiana dell'*Autism Rating Scale*

Chi: Pazienti con schizofrenia, o con sospetto di schizofrenia, o con disturbi dello spettro schizofrenico.
Questa scala può contribuire a discriminare la schizofrenia da altre psicosi, e i disturbi di personalità del Cluster A da altri disturbi di personalità.
Inoltre, può contribuire a definire caratteristiche cliniche di pazienti affetti da Clinical High-Risk o Ultra High-Risk syndromes.
Per completare la valutazione il paziente deve essere *compliant*, motivato, e provvisto di sufficienti abilità linguistiche ed atteggiamento introspettivo.
Cosa: Questa scala valuta "cosa si prova" a essere una persona con schizofrenia (o con vulnerabilità alla schizofrenia) e stare nel mondo sociale.
Esplora l'esperienza soggettiva di relazioni inter-personali, contatti, situazioni sociali così come si presentano ai pazienti nella vita quotidiana.
Dove: Questa scala si focalizza su tutti i tipi di "situazioni sociali di vita reale", ad es. casa, lavoro, scuola, tempo libero, amicizia, incontri casuali, negozi, uffici, ecc.
Quando: Questa scala valuta queste caratteristiche durante i tre mesi precedenti l'intervista.
Come: L'intervistatore può servirsi dei suggerimenti selezionati per ogni item in modo da suscitare narrazioni spontanee. Le risposte del paziente dovrebbero essere trascritte parola per parola.
Nota: i pazienti utilizzano spesso metafore per illustrare le loro esperienze soggettive.
Anche i comportamenti dovrebbero essere esplorati con domande specifiche poiché alcuni comportamenti sono suggestivi di alterata esperienza della socialità.
Considera ad es. diminuzione degli interessi e delle interazioni sociali, rifiuto di sperimentare nuovi contatti e attività, ridotte relazioni strette, ridotto coinvolgimento interpersonale, abbandono di attività precedentemente investite, perdita di naturalezza nei contatti sociali, rifiuto di legami interpersonali, nuova o inusuale preoccupazione o interesse riguardo temi esistenziali, metafisici, religiosi, filosofici o psicologici, ingenuità sociale, mancanza di delicatezza o tatto nei contesti sociali, ecc.
Per ogni item sono riportate manifestazioni associate, suggestive della presenza del fenomeno riportato nell'item specifico. In alcuni casi il paziente può riferire le sole manifestazioni associate. In questo caso è opportuno rivolgere direttamente una domanda specifica che valuti la presenza del fenomeno codificato nel singolo item.

Come presentare al paziente la scala di valutazione

Ti faremo alcune domande per capire meglio come ti trovi quando sei a contatto con gli altri nella vita di tutti giorni e quali sono le cose che ti interessano di più in generale.

Domandi generali introduttive

Puoi dirmi quanto tempo hai passato con le persone durante l'ultimo mese?
Che genere di cose hai fatto con loro?
Cosa pensi degli altri? Sei interessato agli altri?
Che significa per te stare con altre persone?
Ti sembra di avere difficoltà nello stare nel mondo insieme alle altre persone?
Ti senti come loro?
Ti sembra che le persone diano un po' per scontate fatti e situazioni che per te non lo sono affatto?
Ti sembra che a te succedano cose che agli altri non succedono?

Intervista

Sensazione Ego-Sintonica di Radicale Unicità ed Eccezionalità (A1.3)

1.1 Ognuno di noi si sente un po' particolare, diverso dagli altri, ma a te capita di sentirti veramente unico, proprio diverso da tutti gli altri?
Come se tu fossi di un altro tipo, di un'altra specie, proveniente da un'altra dimensione, da un altro pianeta, o addirittura quasi non umano?
Hai la sensazione, per come sei, di rappresentare una sorta di eccezione tra tutte le altre persone?
Se positiva andare direttamente al 2.1 se negativa procedere con le successive.
1.2 Ti senti abbastanza diverso da tutte le altre persone? Noti che c'è una certa diversità tra te e gli altri?
Per esempio per il tipo di cose che ti sono successe, per il tipo di sensazioni che provi o che hai provato, per le tue idee particolari.
Per il tuo modo di vedere il mondo e la vita in generale, per le cose che ti interessano, per come dai importanza e valore alle cose che ti succedono ed alle situazioni in cui ti trovi.

Rifiuto di conoscenze e di assunti socialmente condivisi (Antagonomia) (A5.1)

2.1 Ti capita di provare fastidio, diffidenza, o addirittura ripugnanza per il modo comune di essere, di pensare, di comportarsi, di comunicare?
Se positiva andare direttamente al 3.1 se negativa procedere con le successive.
2.2 Ti sembra di non riconoscerti nel modo in cui tutte le altre persone pensano ?
Nel modo in cui le persone abitualmente comunicano, come usano le parole?
Come danno valore e significato a fatti, avvenimenti, situazioni del mondo e della vita?
Nelle cose in cui le persone mostrano di credere, cioè in quelle che sono le conoscenze a disposizione di tutti e da tutti date per scontate?
In quelle che sono le regole sociali comunemente accettate?
Ti senti poco motivato da quelli che sono gli obiettivi e le ambizioni che in genere mostrano di avere tutte o quasi tutte le persone (es. un lavoro ben retribuito, una bella automobile, una casa di pregio, molti amici, vacanze)?

Antagonomia: diffidenza verso la sintonizzazione con gli altri (A5.2)

3.1 Nella vita di tutti i giorni vuoi o devi prendere le distanze dalle altre persone e startene per conto tuo, fatta eccezione per i tuoi familiari o pochissime persone di tua fiducia?
Se positiva andare direttamente al 4.1 se negativa procedere con le successive.
3.2 Ti mette imbarazzo o ti dà proprio fastidio avere relazioni molto strette, intime, personali?
Condividere con gli altri la tua sfera personale, le tue idee, le tue emozioni, i tuoi sentimenti ed i lati più intimi?
Rifiuti anche solo l'idea di avere relazioni strette con le altre persone, eccettuati i tuoi familiari?
3.4 Ti senti a disagio quando gli altri (eccettuati i familiari) si mostrano troppo interessati a te?
3.5 Stare abbastanza spesso insieme agli altri potrebbe causare la perdita della tua identità?
O farti Identificare in modo pericoloso con loro?
O farti perdere i tuoi pensieri originali?

Sensazione immediata di Distanza, Distacco o Mancanza di Risonanza (A1.1)

4.1 Quando sei con gli altri ti capita di avere una sensazione di distacco, di distanza, come se ci fosse una separazione, una barriera, un filtro, un velo tra te e gli altri?
Se positiva andare direttamente al 5.1 se negativa procedere con le successive.
4.2 C'è poca sintonia tra te e gli altri?
Ti capita di non riuscire ad unirti, a legarti, ad "associarti" con gli altri?
Ti sembra di essere poco coinvolto, motivato, toccato, attratto o stimolato dallo stare con gli altri?
Ti sembra di avere poca fluidità, di essere poco spontaneo quando interagisci con gli altri?
4.3 Nelle diverse situazioni della vita quotidiana, quando sei ad esempio in un luogo pubblico (in un ufficio, in un negozio, in un bar, sull'autobus …) hai la sensazione di essere poco presente, di non riuscire a starci in modo naturale, di non partecipare in modo normale a quello che succede?
4.4 Ti sembra che le persone in genere o le diverse situazioni della vita quotidiana, siano in qualche modo poco naturali ?

Sensazione immediata di Inesplicabilità o Incomprensibilità (A1,2)

5.1 è per te un problema capire cosa abbiamo in testa gli altri ?
Se positiva andare direttamente al 6.1 se negativa procedere con le successive.
5.2 Ti sembra di avere difficoltà nel cogliere le intenzioni, i bisogni, i desideri le emozioni delle altre persone?
Hai difficoltà a capire al volo quello che succede in una situazione particolare come a scuola, al bar, ecc.?
Ti capita spesso la sensazione che gli eventi e ciò che accade nella vita sociale sia difficile, poco comprensibile o addirittura enigmatico?
5.3 Soprattutto quando ti trovi in posti nuovi è un problema per te comprendere quelle che sono le regole di fondo ed avere un'immagine d'insieme di quello che succede?
Ti accorgi o ti viene detto spesso di avere poca dimestichezza o poca delicatezza nelle situazioni sociali, poco tatto, poca sensibilità, poco "savoir faire"?

Idealizzazione astratta (A5.3)

Anche se sei di indole solitaria, ti senti molto preso da ideali umanitari come la pace nel mondo, la giustizia, la fratellanza universale, il valore assoluto dell'amicizia, l'integrazione di razze, culture e religioni diverse?

Atteggiamento Algoritmico Osservazionale (etologico) (A4.1)

7.1 Ti interessa osservare da vicino quello che succede quando le persone interagiscono tra di loro per capire le regole ed il meccanismo delle diverse situazioni della vita quotidiana? (es. persone in un ufficio pubblico, al bar, in un negozio, giovani che si ritrovano davanti ad un locale, ecc.).
Se positiva andare direttamente a 8.1 se negativa procedere con le successive.
7.2 Sei incuriosito dal modo di vivere delle altre persone tanto da passare del tempo ad osservarne i comportamenti?
Senti la necessità di osservare da vicino i comportamenti degli altri e di dover fare uno sforzo per comprenderli, per capirne il meccanismo, le regole di fondo, i principi di base?

Atteggiamento Algoritmico Pragmatico (orientato verso la necessità di riuscire nell'interazione) (A4.2)

8.1 Ti capita di osservare con attenzione che cosa fanno gli altri per imparare il comportamento o le "mosse giuste", cioè cosa fare e come regolarsi nelle diverse situazioni della vita quotidiana?
Se positiva andare direttamente a 9.1 se negativa procedere con le successive.
8.2 Ti capita di studiare come si comportano le altre persone nelle diverse situazione della vita quotidiana al fine di poterle imitare?
8.3 Ti capita di studiare libri, giornali o riviste, o di seguire programmi televisivi per mettere a punto un metodo o delle procedure per gestire le relazioni interpersonali e le diverse situazioni sociali?
8.4 Hai per caso trovato un metodo personale, un modo tutto tuo, dei "trucchi"o le "mosse giuste" per regolarti e sapere cosa fare nelle diverse situazioni della vita quotidiana?
8.5 Quando sei a contatto con gli altri ti accorgi di dover pensare con attenzione a tutto quello che fai e come lo fai mentre gli altri sembrano muoversi in modo naturale?

Atteggiamento Algoritmico Teoretico (orientato ai principi) (A4.3)

9.1 Leggi libri, giornali, riviste o segui programmi televisivi poiché hai interesse a cercare di capire come si comporta la gente? A comprendere quali siano i meccanismi di fondo che regolano il comportamento degli uomini ed i rapporti sociali in genere?
Se positiva andare direttamente a 10.1 se negativa procedere con la successiva.
9.2 Rivolgi molte domande a persone di tua fiducia per capire come si svolge la loro vita e come si comportano nelle diverse situazioni personali e sociali?

Idionomia: Interesse metafisico (A6.2)

10.1 Sei insoddisfatto del modo in cui le altre persone danno per scontati fatti eventi oggetti del mondo prendendoli così come appaiono?
Ti senti fortemente attratto dalla complessità dell'esistenza, del mondo, della realtà o della vita in generale ?
Se positiva andare direttamente a 11.1 se negativa procedere con le successive.
10.2 Sei attirato dalla ricerca di cosa ci sia davvero dietro le semplici apparenze? (come sia fatta veramente la realtà, di quale sia la vera essenza,di come è possibile percepire ed entrare in contatto con il mondo)?
Ti affascina, o oppure ti senti costretto a leggere, studiare, argomenti di tipo scientifico, filosofico o religioso per capire cosa sia veramente la realtà?
10.3 Ti capita di sviluppare a proposito di questi argomenti idee personali che vanno anche parecchio oltre quello che trovi scritto sui libri o che è sostenuto da gruppi organizzati?

Sensazione immediata di Ostilità od Oppressione proveniente dagli altri (A2.1)

11.1 Quando ti trovi in pubblico ti capita di sentirti, in qualche modo, esposto, passivo, alla mercé degli altri?
Se positiva andare direttamente a 12.1 se negativa procedere con le successive.
11.2 Ti capita(di sentirti al centro del mondo?) Di avere la percezione che le cose che accadono (siano in qualche modo lì per te? Che) abbiano a che fare con te? Che ti riguardino? Anche le cose che non sembrano apparentemente in relazione con te?
11.3 Quando ti trovi in pubblico ti capita di sentirti in una situazione di pericolo immediato, come se tu fossi vulnerabile ?
Di percepire da loro ostilità, minaccia, cattive intenzioni, di essere guardato male anche se non riesci a spiegartene il motivo?
Di sentirti oppresso, risucchiato inondato o sommerso dagli altri anche senza un motivo apparente?

Sensazione immediata di mancanza di confini Sé/ Altro da Sé (A2,2)

12.1 Quando ti trovi in mezzo agli altri ti capita di avere la sensazione di essere
super-sensibile, come senza pelle, senza barriere, o come se tu avessi dei buchi, o come se tu fossi trasparente?
Se positiva andare direttamente a 13.1 se negativa procedere con le successive.
12.2 Gli sguardi delle altre persone ti danno noia come se tu fossi toccato, ferito, bucato?
I gesti, le azioni degli altri ti danno la sensazione di colpirti fisicamente, come se entrassero dentro di te? Come se ti penetrassero?
Se qualcuno ti rivolge la parola, magari all'improvviso, hai la sensazione di essere quasi toccato fisicamente da quello che ti dice anche se il contenuto non è offensivo o minaccioso ?
12.3 Quando sei in mezzo alle persone ti capita di sentirti invaso o trapassato anche senza contatti fisici?
12.4 Ti è mai capitato di sentirti come penetrato, invaso fisicamente quando vieni toccato da qualcuno o quando vieni abbracciato?

Parossismo Emotivo Inter-Personale (A3.1)

13.1 Ti capita mai di sentirti sovraccaricato dalle tue emozioni quando sei con gli altri anche in situazioni comuni della vita di tutti i giorni (es. per la strada, in un bar affollato, al supermercato, nell'autobus, ad una stazione etc)?
In queste situazioni ti prende ansia, o paura, rabbia, tensione interna o nervosismo incontrollabile?
Quando sei in luoghi pubblici a contatto con altre persone ti prendono fastidiose sensazioni corporee come tensione muscolare, rigidità, tremore, tachicardia, sudorazione o altri sintomi fisici?

Parossismo Dis-Estesico Interpersonale (A3.2)

14.1 Ti succede, quando sei in mezzo alle persone, di sentire dentro di te strane sensazioni, spesso spiacevoli o inquietanti? Come vibrazioni, energie o forze sconosciute?
O che all'interno del tuo corpo si verifichino strani movimenti?
Oppure di sentirti tutto o in parte bloccato?
Ti capita di avere la sensazione che parti del tuo corpo si trasformino o di avvertire la presenza di parti del corpo che solitamente non si riescono a percepire?

Esperienze Iper-Empatiche (A2.3)

15.1 Quando una persona ti racconta qualcosa di quello che gli è successo ti capita di avere la sensazione di perdere i confini che ti separano dall'altro?
Se positiva andare direttamente a 16.1 se negativa procedere con le successive.
15.2 Ti capita quando sei con altre persone di (immedesimarti in loro a tal punto da) sentirti fuso con gli altri? Come se foste una sola cosa?
15.3 Ti succede di sentire che i tuoi pensieri siano fusi con quelli dell'altro?
Ti capita di riuscire a leggere i pensieri dell'altro come se fossero i tuoi?

Idionomia: Orientamento Carismatico (A6.1)

16.1 Ti è capitato di ricevere qualcosa come una rivelazione molto particolare o di aver avuto un' illuminazione profonda ?
Ti sei stupito di aver scoperto qualcosa di veramente importante per il destino tuo e delle altre persone?
Se positiva terminare l'intervista se negativa procedere con le successive.
16.2 Ti sei accorto di essere dotato di caratteristiche particolari o facoltà che le altre persone non hanno?
Qualcosa di tipo mistico spirituale, o religioso?
Oppure qualcosa di tipo scientifico o filosofico?
La capacità di capire la realtà in modo più profondo?
La possibilità di controllare fatti o situazioni della vita?
Oppure la dotazione di poter comunicare in modo speciale?
Oppure uno speciale senso per l'arte e la creatività?
16.3 Hai provato a far parte di gruppi politici religiosi mistici o filosofici ma sei rimasto poco soddisfatto da come funzionano?
16.4 Ti è stata data o hai capito di avere una missione molto speciale da compiere?
Ti senti in qualche modo chiamato o prescelto per un compito o qualcosa di molto importante da svolgere, per esempio la lotta tra il bene e il male, la giustizia, importanti scoperte scientifiche, filosofiche o religiose?

Foglio per l'attribuzione del punteggio

Autism Rating Scale			Frequenza	Intensità soggettiva di arousal o distress	Impairment	Coping	Nome: _____ Codice: _____
			Classificare in: (1) assente; (2) minimo; (3) lieve; (4) moderato; (5) moderatamente grave; (6) grave; (7) molto grave				GG/MM/AAAA: _____/_____/_____
A1. Ipo - Sintonizzazione	1.1	Sensazione immediata di Distanza, Distacco o Mancanza di risonanza					Sensazione immediata di distanza e distacco, un senso di barriera tra sé e gli altri. Sensazione immediata di non avere coinvolgimento naturale e spontaneo, oppure lamentele di non sentirsi propriamente presenti nel mondo sociale. I pazienti possono lamentarsi dell'assenza di naturalezza del mondo e delle altre persone. Talvolta viene manifestata come mancanza di risonanza, come un senso pervasivo di non essere coinvolto, incitato, mosso, motivato, toccato, attratto o stimolato dal mondo esterno e dagli altri.
	1.2	Sensazione immediata di Inesplicabilità o Incomprensibilità					Incapacità ad afferrare o decifrare le intenzioni, le emozioni, le credenze, i desideri o i bisogni delle altre persone. Difficoltà o incapacità di cogliere intuitivamente il valore e il significato delle situazioni sociali, di afferrare in modo pre-riflessivo e automatico il valore e il significato di eventi, questioni, o situazioni della vita quotidiana e di cogliere le regole implicite che caratterizzano specifici contesti sociali oppure ruoli sociali definiti nel corso dei rapporti interpersonali. *I pazienti possono lamentare un senso di enigmaticità e incomprensibilità del mondo interpersonale che può essere avvertito come difficile o ostile, possono lamentare una perdita di naturalezza nei contatti sociali, ridurre i contatti sociali, rifiutarsi di sperimentare nuove e attività, ecc..* *I pazienti possono mostrare mancanza di "tatto", di "savoir faire", di delicatezza nei contesti sociali, ecc..*
	1.3	Sensazione Ego - Sintonica di Radicale Unicità ed Eccezionalità					Esaltazione ego-sintonica del proprio sentimento di radicale unicità ed eccezionalità. A volte è rivendicata come una scelta libera, l'effetto di un "diverso volere". Altre volte è sentito come un destino e non come una scelta deliberata. La rivendicazione di essere "radicalmente diverso dalle altre persone"(categoria 1) può fondarsi su una profonda metamorfosi della coscienza di sé pre-riflessiva, derivando dalla presenza nel proprio psichismo di sensazioni e pensieri anomali e inconsueti, o avvertiti come non propri, di sensazioni di disconnessione dalla realtà comunemente condivisa, e di esperienze solipsistiche.

Foglio per l'attribuzione del punteggio

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A2. Invasività	2.1	Sensazione immediata di Ostilità od Oppressione proveniente dagli altri					Sensazione immediata di essere, in qualche modo, invasi, minacciati sommersi, trapassati, inondati, costretti, dal mondo esterno o dalle altre persone. Sensazione immediata di trovarsi in qualche modo in una posizione passiva, pericolosamente esposta, alla mercé del mondo, o delle altre persone. *I pazienti possono lamentare ostilità da parte del mondo esterno senza saperne spiegare i motivi.* *La sensazione immediata e opprimente di essere al centro del mondo (auto-referenzialità, o esperienza di centralità).*
	2.2	Sensazione immediate di mancanza dei confini sé/altro da sé					Sensazione immediata di essere in qualche modo " aperti, spalancati o trasparenti", o di avere incredibilmente una "pelle sottile", senza "barriere", ecc. Sensazione immediata di essere fisicamente invasi o penetrati dai gesti, dalle parole, dalle azioni e dagli sguardi delle altre persone. I pazienti possono manifestare sensazioni di ansia o disagio quando si trovano di fronte, in contatto o toccati fisicamente da qualcuno (anche da una persona ben conosciuta o da un parente), oppure anche quando vengono abbracciati.
	2.3	Esperienze iper - empatiche					Incapacità di prendere le distanze dalle altre persone determinata da sensazioni immediate di fusione con loro, iper-empatia, lettura diretta della mente degli altri, esperienze mimetiche o fusionali dove i propri fenomeni mentali sono mescolati a quelli degli altri. *I pazienti a volte evitano situazioni sociali perché in esse capita loro di sentirsi "fondere" con gli altri. Talora sono esaltati dalla loro capacità di entrare in sintonia diretta con la mente degli altri, oppure possono vivere tali esperienze con perplessità, o ansia.*

Foglio per l'attribuzione del punteggio

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A3. Ingorgo emozionale / cenestopatico	3.1	Parossismo Emotivo Inter-Personale					Sentirsi sovraccaricati, con un senso di pena, dalle proprie emozioni quando ci si trova di fronte, in compagnia o comunque a contatto con altre persone. Le sensazioni penose comprendono emozioni negative come ansia, paura, rabbia, tensione, nervosismo e manifestazioni somatiche come disturbi neurovegetativi, tensione muscolare o rigidità. *I pazienti riconoscono le sensazioni come emozioni; possono descrivere difficoltà nell'interazione con le altre persone, evitamento attivo di situazioni sociali come luoghi e locali pubblici, mezzi di trasporto.*
	3.2	Parossismo dis-estesico interpersonale					Inquietanti parossismi di sensazioni corporee che opprimono la propria persona agendo dall'interno dell'organismo e provocando disagio. Si manifestano quando ci si trovi davanti o in contatto con altre persone. I pazienti non riconoscono tali sensazioni come emozioni; possono avanzare pseudo-spiegazioni idiosincrasiche dell'esperienza. Le sensazioni sono strane, atipiche, innaturali e incomprensibili, alcuni esempi sono sensazioni di cambiamento della morfologia corporea, pseudo-movimenti all'interno del corpo o di una parte del corpo, blocco motorio, interferenze, esperienze propriocettive o cenestesiche ecc.

Foglio per l'attribuzione del punteggio

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A4. Concezione algoritmica della socialità	4.1	Atteggiamento algoritmico osservazionale (etologico)					Tentativo di dare un senso agli stati mentali degli altri che si celano dietro il loro comportamento e il comportamento umano in generale e/o di comprendere il significato delle situazioni sociali attraverso osservazioni empiriche delle altre persone nelle comuni operazioni della vita.
	4.1.1	Atteggiamento algoritmico pragmatico (orientato verso la necessità di riuscire nell'interazione)					Tentativo di sviluppare un metodo esplicito o costruire un personale algoritmo il cui scopo è partecipare a specifiche situazioni o interazioni sociali. I pazienti cercano di entrare in contatto con altre persone e si occupano di imparare a interagire efficacemente con gli altri. A volte questi tentativi sono condotti tramite analisi "scientifiche" o "filosofiche", ricerche sistematiche, ricorrenti e pervasive, studi personali e approfondimenti. Questi tentativi possono apparire idiosincrasici, iper-elaborati e non propriamente idonei al valore, al significato reale e alle modalità di specifiche relazioni interpersonali e situazioni sociali.
	4.1.2	Atteggiamento Algoritmico Teoretico (orientato ai principi)					Interesse teorico e puramente concettuale nei confronti del fenomeno della socialità e possibilmente verso tutta la realtà e verso il fenomeno complesso della vita sulla terra. I pazienti sono più interessati a scoprire i principi di fondo che alla loro utilità pratica o alla loro applicazione. I pazienti sono interessati a scoprire i meccanismi esatti che regolano la relazione sé-mondo attraverso studio e letture, spesso non sistematiche e senza adottare la metodologia delle discipline considerate, oppure attraverso compulsive riflessioni, letture, analisi, speculazioni.

Foglio per l'attribuzione del punteggio

Autism Rating Scale			Frequenza	Intensità soggettiva di arousal o distress	Impairment	Coping	Nome: _____ Codice: _____
			Classificare in: (1) assente; (2) minimo; (3) lieve; (4) moderato; (5) moderatamente grave; (6) grave; (7) molto grave				GG/MM/AAAA: _____/_____/_____
A5. Atteggiamento antitetico verso la socialità	5.1	Antagonomia come rifiuto di conoscenze, assunti, sapere socialmente condiviso					Atteggiamento scettico e fortemente dubitativo riguardo agli assunti del senso comune e/o della conoscenza convenzionale, e/o dei valori e delle regole socialmente condivisi con lo sforzo di sospenderne il valore mettendoli tra parentesi. Ripugnanza esplicita per il modo comune di essere, di pensare e di comportarsi, rifiuto sprezzante per il modo comune di dare per scontata la realtà assumendo come tali i fatti, gli eventi e gli oggetti del mondo. I pazienti scelgono di allontanarsi dal significato delle regole convenzionali, valori e credenze del senso comune e cercano di assumere una posizione eccentrica relativamente agli assunti comunemente condivisi. In alcuni casi lo scetticismo comporta un atteggiamento critico verso la semantica convenzionale: principalmente criticano le convenzionali associazioni oggetto-significato e tentano di elaborare strumenti migliori per esprimere le proprie esperienze spesso idiosincrasiche.
	5.2	Antagonomia come diffidenza verso la sintonizzazione con gli altri					Senso complessivo di diffidenza nei confronti dello stare in sintonia emotivo-affettiva con le altre persone. Rifiuto di relazioni interpersonali strette, intime. Scelta deliberata di prendere le distanze dagli altri così come si presentano nel "qui ed ora" della vita di tutti i giorni. I rapporti immediati (empatici) e i legami interpersonali sono respinti ed è particolarmente temuta la tendenza ad identificarsi con gli altri. Il contatto con le altre persone può essere sentito come una pericolosa fonte di perdita d'identità, di individuazione, di pensiero originale.
	5.3	Idealizzazione astratta					Sostenere un'ideologia spiritualmente o intellettualmente utopistica, distaccata dal concreto e quotidiano contatto interpersonale. L'impegno con le singole persone in carne ed ossa viene sostituito da un interesse verso l'intera umanità o astratti valori umanitari. *I pazienti possono rilasciare dichiarazioni che appaiono in contrasto con il loro stile di vita, generalmente appartato e solitario.* *Gli ideali umanitari possono apparire idiosincrasici oppure possono rappresentare un'estremizzazione di valori altrimenti condivisi da altri individui o gruppi di individui (religiosi, politici, ecc.) senza che peraltro i pazienti mostrino alcuna forma effettiva di partecipazione o impegno personale nel mondo sociale.*

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A6. Idionomia	6.1	Orientamento Carismatico					Sentirsi dotati di poteri superiori (charisma significa 'dono') di tipo spirituale, morale, materiale o intellettuale o chiamati, prescelti per un importante compito o missione di tipo escatologico (eschatos significa "ultimo"), cioè riguardante i fini ultimi del genere umano (ad es. lotta tra il bene ed il male). I pazienti possono mostrare stupore e perplessità nei confronti dei poteri particolari di cui si sentono investiti; spesso li avvertono come un dono o come una rivelazione e non come un percorso attivo di appropriazione.
	6.2	Orientamento Metafisico					Interesse e/o preoccupazione per temi metafisici (ad esempio, cos'è reale vs cos'è solo apparenza), esistenziali, religiosi, filosofici o psicologici. Fascinazione per la sconcertante complessità metafisica dell'esistenza e da "cosa succede dietro le quinte", da cosa "ci sia effettivamente" al posto delle normali apparenze, delle cose della vita quotidiana, della natura e del mondo umano. I pazienti possono considerare l'atteggiamento comunemente adottato nei confronti di fatti, oggetti ed eventi del mondo, all'insegna del cosiddetto atteggiamento naturale (assumere fatti eventi e oggetti del mondo così come sono e darli per scontati senza riflessione esplicita) come vuoto ed artificioso ed incapace di cogliere la "vera" essenza della realtà.

Tabella di Gravità

	Assente	Minimo	Lieve	Moderato	Moderatamente grave	Grave	Molto grave
Frequenza	Non applicabile	Dubbio	Sporadico non ricorrente	Poco ricorrente (≤ 1/sett)	Molto ricorrente (≥1/sett)	Pervasivo (quasi tutti i giorni)	Continuo (tutti i giorni)
Intensità soggettiva di arousal o distress		Distress/arousal minimo e tollerabile	Distress/arousal lieve	Distress/arousal moderato	Distress/arousal grave	Distress/arousal molto grave	Distress/arousal estremo
Impairment	Il funzionamento del paziente non è compromesso	Raro bisogno di evitare attività sociali	Occasionale evitamento di attività sociali non essenziali	Frequente evitamento di attività sociali non essenziali	Occasionale evitamento di attività sociali essenziali	Frequente evitamento della maggior parte delle attività sociali essenziali	Completo evitamento delle attività sociali
Coping	Il paziente è in grado di risolvere rapidamente questi disagi	Il paziente è in grado di ristrutturare il proprio modo di pensare	Il paziente sceglie attivamente di evitare questi disagi (strategia comportamentale)	Il paziente pensa di avere problemi che può spesso evitare passivamente (ignorare)	Il paziente riconosce il problema, ma non può farci nulla	Il paziente ha solo una versione non plausibile del problema che deve affrontare	Il paziente pensa di non avere alcun problema