

DELUSION ASSESSMENT SCALES

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A TÉVESZMÉK ÉRTÉKELÉSI SKÁLÁJA

A 19. század elejétől tartja magát az a nézet, amely szerint a téveszméket elsősorban tartalmuk és témaköreik szerint osztályozzuk (depresszív, hipochondrikus, féltékenységi stb. téveszmék). A klinikai pszichopatológiai vizsgálatok azonban további megnevezések bevezetését is megkövetelték, például a meggyőződés foka, a rendszerezés foka, a téveszme szervezetsége, a téveszme állandósága stb. megnevezést, amelyek lehetővé teszik a téveszmék jellegének pontosabb leírását. Valamennyi téveszme multidimenziós szerkezet, amely az egyes dimenziókban a különféle lelki zavarok függvényében változik. Megállapítást nyert, hogy a megfelelően felállított dimenziós skála megbízhatóan meg tudja különböztetni az egyes lelki zavarokban megjelenő téveszmék szerkezetének mélységét. Az egyes téveszmék dimenzióinak minél pontosabb meghatározása (kvantifikálása) céljából több szakembercsoport is készített mérőskálákat. Az itt elhangzott hozzászólás a legismertebb és leghatékonyabb skálákat vonultatja fel, amelyek a téveszme átélésének értékelésére és a téveszme struktúrájára irányulnak, összegzik az eredeti skála fő jellegzetességeit és pszichometrikus paramétereit az egyszerű téveszme tünetegyüttesének (Simple delusional Syndrome Scale, SDSS) vonatkozásában. A SDSS mérőskála célja az, hogy megállapítsa a téveszme-szindróma erősségi fokát az elsődleges lelki zavar függvényében. Az SDSS szimptomatikus skála, 7 szempontot tartalmaz, amelyek: a téveszme logikai szerkezete, a téveszme rendszerezése, a téveszme állandósága, a téveszme meggyőződési foka, a téveszme hatása a beteg cselekedeteire, a téveszme kiterjedése, a téveszme megnyilatkozása. A skála 5 fokozatú. A statisztikai elemzés eredményei alátámasztják, hogy a skála jó pszichometrikai jellemzést ad, a Cronbach alfa koefficiens=0,8327. Az SDSS skála nagyon hasznos lehet azon lelki zavarok pszichopatológiai elemzése során, amelyekben téveszmék vannak jelen, mert hozzájárulhat a tév-

eszmés (paranoid) állapotok pontosabb diagnosztizálásához. Az SDSS skála segítségével kvantifikálni lehet a téveszme-szindróma változásait az elsődleges kórfolyamat (szindróma) függvényében, és statisztikai módszerekkel le lehet írni a téveszme és az elsődleges tünetegyüttes közti szoros kapcsolatot.

KULCSSZAVAK: téveszmék, elbírálási skála, egyszerű téveszme-tünetegyüttes, az egyszerű téveszme-tünetegyüttes értékelési skálája

SUMMARY

Since the beginning of the 19th century, delusions have been classified mainly by their content or theme. Clinical psychopathological investigation requires additional variables that will allow investigators to describe the structure of delusional experience more accurately. Delusions are multidimensional constructs that may change across the various mental disorders. Several authors have developed rating scales with the aim to measure individual dimensions of delusional structure. In this paper, common rating scales are mentioned and the main characteristics of the Simple Delusional Syndrome Scale (SDSS) are summarized. The SDSS scale consists of 7 items (logical organization, systemization, stability, conviction, influence on the action, extension, and insertion), scored from 1 to 5. Results of the statistical analysis confirm good psychometric characteristics of the scale, Cronbach coefficient $\alpha=0.8327$. The SDSS may contribute to a better understanding and diagnostics of delusional disorders and, using statistical methods, can help quantify the relationship between the delusional syndrome and the primary disease process. The SDSS scale may also be utilized in the assessment of changes occurring in delusional syndromes depending on the therapeutic effect of psychopharmacological drugs.

KEYWORDS: delusions, rating scales, simple delusional syndrome, Simple Delusional Syndrome Scale

INTRODUCTION

The classics of psychiatry asserted that a delusion (a false belief, mistaken belief) is the very basic characteristic of insanity. They all shared the same opinion that delusions are a varying phenomenon that fluctuates between ephemeral and inconstant delusional thoughts and a stable delusional system. Delusions have been defined in a variety of ways and, to date, no consensus has been reached on either their nature or origins. Many theories have been developed in attempts to explain the mechanism responsible for the origin, genesis and formation of a delusion. The validity of those theories is currently being intensely researched in order to verify it. It is generally accepted that delusions are uncorrectable, pathologically changed incorrect conclusions. The assessment of delusions has so far received little attention. There is no widely used instrument in existence today that would allow us to assess this important construct. Since the beginning of the 19th century, delusions have been classified mainly according to their content or theme (persecutory, grandiose, depressive, hypochondriacal, jealous). A clinical psychopathological investigation requires further variables (dimensions) that will allow researchers to describe the structure of delusional experience more accurately (conviction, insight, systemization, disorganization, stability, bizarreness) (Bell et al., 2006).

This is an approach that may be, to a certain extent, reasonably regarded as being objective, and that effectively supplements both the phenomenological and descriptive approaches that are grounded in subjective interpretation. The interest in the issues of delusions is well documented in numerous papers by domestic (Slovakian) authors (Forgáčová et al., 2000, André, 2002, Kafka, 2005).

DIMENSIONS OF DELUSIONAL EXPERIENCE AND THE RATING SCALES

The idea that delusions are a multidimensional clinical entity is not a new one. For example, Sacks and colleagues (1974) have demonstrated that delusions in schizophrenia form and resolve gradually, rather than in an all-or-nothing fashion. Similarly, Straus (1969) described a range of convictions in the delusions of schizophrenia and, recently, Eisen and colleagues (1998) described a spectrum of insight in patients with delusions. So,

delusions are a multidimensional construct characterized by a number of components (dimensions), which may change across the various mental disorders (the conviction of a patient with paranoia differs from that of a patient with schizophrenia or a patient with mania). The pattern of change in dimensions of a delusional structure during mental disorders might provide an insight into the nature of the pathological process (Opjordsmoen, 2005). However, it has not yet been clarified how many dimensions this construct contains.

Several authors have developed rating scales with the aim to measure individual dimensions of a delusional structure. They derived their rating scale items from their clinical experience and from the psychiatric literature. To date, several categorical rating scales have been implemented which allow the measurement of the degree of a delusional structure: Dimensions of Delusional Experience (Kendler, Glazer, Morgenstern, 1983), Belief Rating Scale (Jones, Watson, 1997), The Brown Assessment of Beliefs Scale (Eisen et al., 1998). Their main characteristics, objectives, and psychometric properties are summarized in Table 1.

With the aim to describe characteristics of a heterogeneous sample of delusions, Garety and Hemsley (1987) have developed a visual analogue scale named Characteristic of Delusional Experience. The scale contains 11 items scoring 0-10 (Conviction, Preoccupation, Interference, Resistance, Dismissibility, Absurdity, Self-evidence, Reassurance, Worry, Unhappiness, and Pervasiveness). The principal component analysis generated 4 components: distress, belief strength, obtrusiveness, concern. The results suggested that there may be at least 4 processes which underlie these 11 elements of delusional experience.

Recently, two scales were assessed for their reliability and validity – the Delusion Assessment Scale for psychotic major depression and The Conviction of Delusional Belief Scale. Both scales appeared to be a reliable and valid measure of delusional experience (Mayers et al., 2006, Combs et al., 2006).

Rating scales can help describe characteristics of a heterogeneous sample of delusions. They can help clarify differences between delusional and nondelusional states and help assess the degree of delusional experience across a range of psychiatric disorders. The extracted factors can provide an empirical basis for understanding the structure of delusional experience (Chadwick, Lowe, 1990).

Table 1. Categorical Rating Scales of Delusional Dimensions

Name of the scale, authors	items	reliability	objectives	factors
Dimensions of Delusional Experience Kendler, Glazer, Morngenster, 1983	Conviction, Extension, Bizarreness, Disorganization, Pressure scoring 0-5	Weighted kappa: good to excellent	to discover whether extracted factors would provide an empirical basis for understanding the structure of delusional experience	Delusional involvement (conviction, pressure) Delusional construct (disorganization, bizarreness)
Belief Rating Scale Jones, Watson, 1997	Conviction, Influence on behavior, Influence on cognition, Truthfulness, Importance, Frequency, Speed of formation, Acceptability, Use of imagination, Perceptual evidence, Focused thought, Affective content scoring 0-5	good	to investigate the form of delusions, overvalued idea and religious beliefs	
The Brown Assessment of Beliefs Scale Eisen et al., 1998	Conviction, Perception of others' views of beliefs, Explanation of differing views, Fixity of ideas, Attempt to disprove beliefs, Insight, Idea/delusions of reference scoring 0-4	Weighted kappa: good to excellent Cronbach's alpha: 0.87	to assess delusional in a number of psychiatric disorders to clarify differences between delusional and nondelusional states, determination of cutoff point for delusional to investigate of treatment efficacy	Core features Severity Psychosis

However, what is the weight of individual items of the above mentioned scales in respect to the intensity of a delusional syndrome? According to the Dimensions of Delusional Experience scale (Kendler, Glazer, Morngenster, 1983), for example, the highest scores are obtained by patients with bizarre paralogical and unsystemized delusions. If, however, the score of a delusional syndrome were evaluated using an appropriately defined scale, then the highest score received would be for patients with a simple delusional syndrome with logically coherent and systemized delusions and, vice versa, the lowest score would be received for those with paralogical, bizarre and unsystemized delusions.

THE SIMPLE DELUSIONAL SYNDROME SCALE

Descriptions of the delusional syndrome in its plain form can be found in papers and scholarly articles of a number of authors (such as Manschrek, 1992, Munro, 1988). They share the same opinion that we have to do with a syndrome the characteristic feature of which resides in the relative absence of any other type of psychopathology and the description of which corresponds to that of the classic paranoia. Here, delusions are logically coherent, nevertheless they are based on false, mistaken premises. They tend to form a solid, coherent delusional system. Such a delusional sys-

tem is steady, the belief is deep-seated, and has quite a bit of influence on the way one behaves and affects many aspects of a patient's life. The contents of such delusional system is grounded in reality. Currently, paranoia is counted among the Delusional disorders (ICD -10, 1992).

Researchers of the Vienna research group (Berner, 1977, Berner et al., 1986, 1992) whose research in delusional syndromes dates back several decades start from the assumption that the structure of a delusion reflects the characteristic features of the primary pathological process along with which a given syndrome occurs. For instance, a persecutory delusion existing simultaneously with schizophrenia will be of a different nature than one existing along with the delusional syndrome or paraphrenia or dementia. This piece of knowledge generated from clinical experience may also be construed as implying that the structure of a delusional syndrome shapes itself in a manner depending on a primary pathological process (whether be it organic, schizophrenic process or affective disorder), in consequence of which the intensity of the syndrome's evidence either increases or decreases. The approach adopted by Vienna's authors differs from conventional approaches taken by many other contemporary scholars who have relied on the description of a delusion's external symptoms (dimensions) that, in various psychopathological states, may vary in

quantity, but that, on the other hand, do not provide any information on the essence (quality) of those differences. In the context of assessing a delusional structure, terms such as „simple delusional syndromes” and „paraphrenic syndromes” are found in papers and scholarly articles published by Viennese authors. In a simple delusional syndrome, delusional themes are logically coherent and anchored in reality. A delusion tends to generate a solid, coherent delusional system. In paraphrenic syndromes, delusions are organized in a paralogical manner depending on what is the primary pathological process, but they do not form any delusional system; delusional themes are disconnected from reality, they are bizarre, their influence on behavior is inconstant; and the intensity of a delusional belief varies. The term “simple delusional syndrome” corresponds to the older term “clear paranoid syndrome” (the original German term used to describe it reads ‘Rein paranoides Syndrom’) (Berner, 1972, 1977).

The usage of the term “paranoid” is not uniform in psychiatry. The broader meaning of this word relates to all types of delusions produced by an individual while a narrower meaning of the same term only describes delusions of persecution and reference or is exclusively used to specify a form of schizophrenia (Peters, 1967, Kendler & Co., 1989, Pull, 1995). As early as some decades ago, Winokur (1977) recommended that the (newer and unburdened with the weight of history) adjective “delusional” be used in Anglo-American literature in order to avoid ambiguity or confusion in terminology. In their more recent works, Viennese authors prefer the usage of “simple delusional syndromes” instead of the term “clear paranoid syndrome” and “paranoid syndrome” (Berner et al., 1986).

The Simple Delusional Syndrome Scale has been designed in such a manner so as to allow measuring the degree of intensity of the delusional syndrome in patients whose clinical examination has found the delusional syndrome. The scale’s structure and the selection of the scale’s items have been determined by clinical experience (clinical description of the simple delusional syndrome) and by the theoretical fundament derived from essential works published by the above Viennese authors (Berner et al., 1986, Schanda et al., 1984). Originally, the scale was designated with a provisional name “Scale for Clear Paranoid Syndrome” (Forgáčová, 2003, Forgáčová, 2006).

The new name for the scale corresponds to the modern trend to use the term “delusional” rather than the word “paranoid”.

In a simple delusional syndrome, a delusion is logically consistent (logical organization) with the tendency to form a coherent delusional system (systemization). A delusional system is steady, stable (stability), and is accompanied with a deep-seated belief (conviction). A logically coherent stable delusional system where there is a deep-seated conviction has a significant influence on the way one behaves (influence on the action) and affects many aspects of a patient’s life (extension). A delusional system is grounded in reality (insertion). The Simple Delusional Syndrome Scale (SDSS) thus comprises 7 items: logical organization, systemization, stability, conviction, influence on the action, extension, and insertion. The scoring of the intensity of a symptom runs from 1 to 5: absent or minimal (1), mild (2), moderate (3), moderate severe (4), and severe (5). In a clinical picture, particular items (dimensions) may be expressed with variable intensity. Approximate duration of the assessment is 30 minutes, and the data are taken from a patient’s verbal communications and from clinical observation as data sources.

For purposes of the SDSS scale’s statistical parameters assessment a set of 109 hospitalized patients (52 females and 57 males) was used; the patients met the following criteria: age >18 years, delusional syndrome within their clinical picture, absence of a consciousness disorder, absence of an acute somatic disease. The following characteristics have been developed for purposes of statistical dependencies examination: The total score of a set, the average (mean) score of a set, a variance/mean-root-square error within items and the total score, descriptive characteristics of the scale, items’ selective correlations (see Tab. 2), interitem correlations (Pearson correlation matrix of weight correlations (Tab. 3), T-test (the testing of statistical significance of the correlation coefficient), and the internal consistency (the Cronbach Coefficient Alpha). The kappa correlation coefficient has not yet been evaluated. The results of the statistical analysis confirmed a good psychometric characteristics of the scale. Cronbach Coefficient Alpha = 0.8327 (Forgáčová, 2003).

In respect to scoring, the SDSS scale is different compared to the above-mentioned scales [the Brown Assessment of Beliefs Scale (BABS)

Table 2. Selective Correlations of Scale Items with Total Score

SDSS Items	Mean score	Mean-root-square error	Item Correlations /Total Score (N=109)	
			R	P
Logical organization	2.73	1.2	0.635	<0.01
Systemization	2.42	1.1	0.853	<0.01
Stability	2.90	1	0.781	<0.01
Conviction	3.78	0.9	0.648	<0.01
Influence on the action	3.00	1	0.712	<0.01
Extension	2.64	0.9	0.686	<0.01
Insertion	2.97	1.1	0.615	<0.01
Global score	2.92	1.04	1	0

R – Correlation Coefficient; P – Significance Level (two-tailed test)

Table 3. Interitem Correlations of the SDSS

Items of the SDSS	Logical organization	Systemization	Stability	Conviction	Influence on the activity	Extension	Insertion
Logical organization	1.00	.598**	.204*	.005	.125	.128	.809**
Systemization		1.00	.683**	.427**	.434**	.463**	.547**
Stability			1.00	.607**	.637**	.624**	.214
Conviction				1.00	.715**	.610**	.056
Influence on the action					1.00	.695**	.085
Extension						1.00	.060
Insertion							1.00

*Correlations significant at level 0.05 (two-tailed test); **Correlations significant at level 0.01 (two-tailed test).

(Eisen et al., 1998) and the Dimensions of Delusional Experience (DDE) (Kendler, Glazer, Morngenstern, 1983)]. The highest score in the SDSS scale, i.e. the highest evidence intensity degree is expected where there is a more developed delusional syndrome with a logically coherent delusion well organized into a stable system and accompanied with a deep-seated belief (conviction) and some influence on behavior (action). The BABS and DDE scales assess, in a sectional manner, delusional experience giving the highest score in cases where there is bizarre and disorganized delusional production present. The statistical methods used for investigation into relationships between scales have shown, as well, that there is no significant link between BABS and SDSS scales and DDE and SDSS scales ($R=0,169$ and $R=0,329$) (Tab. 4). The mutual dependency between items of the scales was assessed by means of partial correlations (Pearson correlation matrix – Tab. 4). A significant mutual relation has been validated between the BABS and DDE scales ($R=0,769$, $P=0.01$) (Tab. 4).

Table 4. Interscale Correlations

	SDSS	BABS	DDE
SDSS	1	0.329*	0.169
BABS	0.329*	1	0.769**
DDE	0.169	0.769**	1

*Correlations significant at level 0.05 (two-tailed test)

**Correlations significant at level 0.01 (two-tailed test).

BABS: The Brown Assessment of Beliefs Scale (Eisen et al., 1998), DDE: Dimensions of Delusional Experience (Kendler, Glazer, Morngenstern, 1983), SDSS: Simple Delusional Syndrome Scale

CONTRIBUTION OF THE ASSESSMENT SCALES TO CLINICAL PRACTICE

Currently, the contents of a delusion serves as the classificatory criterion for assessing both delusions and delusional disorders. Clinical experience, however, produces knowledge that delusions are heterogeneous not only in respect to their contents, but also in respect to their form (structure) (Maher, 1992). There is a widely held opinion based upon clinical experience that the structure of a delusion reflects features of the primary pathological process along with which a given delusion occurs. Thus, in theorizations about the dif-

ferential diagnostics the need arises that not only the contents of a delusion should be specified in more detail, but its delusional structure as well.

In clinical practice, the nature of a delusional structure can be determined in a sectional manner. Logically coherent delusions can be identified that are organized into a solid coherent system (simple delusional syndrome) – for example “I strongly believe that someone is constantly robbing my apartment. I can see the traces left on the lock, all my things turned upside down, eaten food. I know the identity of the perpetrator, this is one of my neighbors, he is always shadowing me waiting for any moment I leave my home...” This sort of delusions occur along with a Delusional disorder (according to ICD-10 includes paranoia and paranoid development). If schizophrenia is the case, delusions get their special characteristics. Such delusions are unintelligible, organized in a paralogical fashion, and no firm delusional system is formed. The contents of these delusions is often bizarre, absurd (“the devil lives inside my body, he changes all the time, he sleeps during the day and tempts me at nighttime, he’s taken the appearance of my brother ...”).

Clinical studies focus on examining the characteristics of delusion and its delusional structure through determining particular dimensions of it. Numerous teams of authors have developed assessment scales designed with the aim to determine (quantify) particular dimensions of a delusional structure. It was found that suitably built assessment scales can be a reliable tool to distin-

guish the level of a delusional structure occurring with various mental disorders (Tab.1).

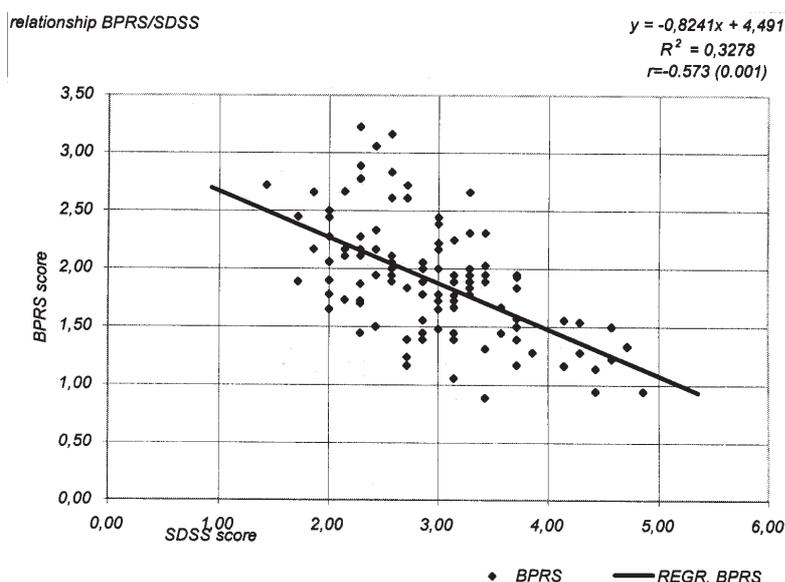
The Simple Delusional Syndrome Scale (SDSS) is designed in such a manner so as to take into account the objective that has been set – to point out the fact that the structure of a delusional syndrome varies depending on what is the underlying (primary) pathological process. According to the scale, the highest score, i.e. the highest evidence intensity degree, is expected where there is a more developed delusional syndrome with a logically coherent delusion well organized into a stable system and accompanied with a deep-seated belief (conviction) and some influence on behavior (action). And, on the contrary, the score is likely to be lower in the event of a disorganized delusional structure (decrease in the evidence intensity degree depending on the primary pathological process).

The above assumption was verified in a group of 109 hospitalized patients (52 females and 57 males) who had met the following criteria: age > 18 years, delusional syndrome within their clinical picture, absence of a consciousness disorder, absence of an acute somatic disease. The evidence intensity of a delusional syndrome was assessed using the Simple Delusional Syndrome Scale. To assess the intensity of symptoms of the primary pathological process (a psychotic disorder), the validated BPRS scale (Brief Psychiatric Rating Scale) was used (Overall, Gorham, 1962). The scale is intended for adult patients with a psychotic disorder and any disease from the range of

schizophrenia-spectrum disorders (which covers the entire spectrum of psychotic disorders). Using statistical methods, the relation between a delusional syndrome and a primary pathological process has been evaluated based on the average SDSS score (as an independent variable) and based on the average BPRS score (as a dependent variable). The statistical analysis comprised the determination of a product correlation coefficient (r), the estimation of significance (p), and the regression curve coefficient (see Fig. 1).

Based on the results obtained by means of the statistical analysis we can state that the BPRS scale’s

Fig. 1. Relationship BPRS/SDSS



score values have shown a decreasing trend with increasing values of the SDSS scale's score. A statistically significant negative correlation ($r = -0.573$, $p=0.001$) has been proven to exist between a delusional syndrome and a primary pathological process (Fig. 1). The results obtained from the study have validated the assumption that the intensity of evidence of a delusional syndrome varies depending on a primary pathological process. Where there were more obvious manifestation of a pathological process' symptoms (as per BPRS), the delusional syndrome evidence intensity had a decreasing trend (the syndrome's structure was getting disorganized); and, on the contrary, with the drop in the manifestation of a pathological process' symptoms the delusional syndrome evidence intensity (as per SDSS) increased – the clinical picture contained a simple delusional syndrome with a logically organized and systemized delusion.

The Simple Delusional Syndrome Scale may prove useful for psychopathological analyses of mental disorders that are accompanied with delusional syndromes and also in theorizations of differential diagnostics it may greatly contribute to the development of more accurate diagnostic techniques for delusional syndromes. The score received provides information about the level of a delusional structure – a high score points to a simple delusional syndrome while a low score indicates the presence of a more serious pathological process (organic, schizophrenic). We can state that the scale will sectionally capture the changes in a delusional structure depending on a primary pathological process.

APPLICATION OF DELUSION ASSESSMENT SCALES IN THE EVALUATION OF TREATMENT EFFICACY

Delusion Assessment Scales are valid instruments appropriate for the assessment of changes occurring in delusional syndromes as a result of psychopharmacological therapy. The Brown Assessment Beliefs Scale (Tab.1) distinguishes very precisely between mental disorder variants with delusions and those without delusions (such as body dysmorphic disorder with or without delusion, obsessive-compulsive disorder with or with-

out delusion, hypochondriasis, and psychotic depression). The scale may be used, for instance, to facilitate the comparison of the effect of psychopharmacotherapy in patients with the “with delusion” variant of a mental disorder and that in patients with the “without delusion” variant of the same type of mental disorder (Eisen et al., 1998).

The Simple Delusional Syndrome Scale may contribute to a better understanding and diagnostics of delusional disorders and can help quantify the relationship between the delusional syndrome and the primary disease process. The SDSS scale can also be used for the addressing of other research goals – such as the assessment the therapeutic effect of psychopharmacological drugs. The goal of psychopharmacotherapy is to ensure the complete disappearance of psychopathological symptoms. We can expect that as the primary pathological process' symptoms disappear, during the course of the treatment, the delusional syndrome will gradually wear away as well. Using the SDSS scale, we can also monitor and statistically assess which dimensions of the delusional syndrome will change and in what manner they will transform. During changes in psychopathological symptomatology of a mental disorder, the values of particular SDSS scale items (such as conviction, influence of delusions on the action, stability and extension – dwelling too much on a delusion) may alter to various extents, depending on the therapeutic effect. This means that the SDSS scale can serve as an effective method of specifying, based on changes in particular dimensions of a delusional syndrome, the response to a psychopharmacological therapy.

If further pointed research proves the validity and reliability of the Simple Delusional Syndrome Scale, and if more researchers achieve basically the same results, this scale can greatly contribute to clinical practice.

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