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# Anomalies of subjective experience in psychosis: concept and empirical validation of the Basic Symptoms model

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**Thematic update**


## ABSTRACT

### Introduction

Research, diagnosis and treatment of psychotic spectrum disorders have traditionally been dominated by an objectivist approach to their understanding, being primarily focused on positive and negative symptoms. The value of this approach goes without question, but it also involves considerable and widely known limitations. From a complementary perspective, there is a longstanding and promising phenomenological tradition in which the subjective experience of the patient's symptom becomes crucial. The focus on the anomalies of subjective experience, or the Basic Symptom concept specifically, has gained much momentum in the context of early detection of psychosis and schizophrenia.

### Objective

This review presents the phenomenological approach to the anomalies of subjective experience and the Basic Symptoms model and its empirical validation process in the field of early detection of psychosis.

### Method

The scientific literature was collected from PubMed Central® and PsycINFO® databases and books from authors of reference.

### Results

In the last two decades there has been a growing scientific interest in this approach with very promising results.

### Discussion and conclusion

The most prominent model from an empirical standpoint is the Basic Symptoms approach, although recently the disturbances of the flow of consciousness or self disorders have achieved great relevance as well.

It has been found that the anomalies of subjective experience could delimitate a risk profile that precedes that defined by attenuated psychotic symptoms. Therefore, this approach is a highly valuable complement in the early detection and intervention of psychosis strategies.


**Key words:** Psychosis, schizophrenia, Basic Symptoms, subjective experience, prodrome, risk.


## RESUMEN

### Introducción

Tradicionalmente, en la investigación, el diagnóstico y el tratamiento de los trastornos del espectro psicótico ha imperado un modelo de comprensión objetivista, centrado principalmente en los síntomas positivos y negativos. Aunque es innegable el valor de esta aproximación, implica considerables limitaciones ampliamente conocidas. De forma complementaria, existe una larga y prometedora tradición fenomenológica en la cual la experiencia subjetiva del síntoma del paciente adquiere una importancia fundamental. La aproximación de las anomalías de la experiencia subjetiva o, específicamente, de los Síntomas Básicos ha adquirido mucha fuerza dentro del contexto de detección precoz de psicosis y esquizofrenia.

### Objetivo

Esta revisión expone la aproximación fenomenológica de las anomalías de la experiencia subjetiva y se define detalladamente el modelo de los Síntomas Básicos, así como su proceso de validación empírica en el campo de detección precoz de psicosis.

### Método

Las bases de datos consultadas han sido PubMed Central® y PsycINFO®, así como libros de autores de referencia.

### Resultados

En las dos últimas décadas ha habido un creciente interés científico sobre esta orientación con resultados muy prometedores.

### Discusión y conclusión

El modelo más destacado a nivel empírico es el de los Síntomas Básicos, aunque recientemente también han ganado gran relevancia las alteraciones del flujo de la consciencia o del *self*.

Se ha comprobado que las anomalías de la experiencia subjetiva consiguen delimitar un perfil de riesgo de psicosis más temprano que los síntomas psicóticos atenuados. Por tanto, son un complemento altamente válido en las estrategias de detección e intervención temprana de psicosis.


**Palabras clave:** Psicosis, esquizofrenia, Síntomas Básicos, experiencia subjetiva, pródromo, riesgo.

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## INTRODUCTION

A common aspect in the research, diagnosis, and treatment of schizophrenia is that these have been primarily focused on so-called positive and negative symptoms. This emphasis on the clinical-objective slant of psychotic manifestations is largely explained by the preeminence of the behaviorist epistemological paradigm, and the consequent search for a viable measurement of a phenomenon;[1] the popularity of Schneider's diagnostic criteria;[2] and the difficulty for phenomenological psychopathology in translating knowledge and findings in terms that are sufficiently operative to be used in psychopathological research and diagnosis.[3] The above has implied that current diagnostic classification, and some of the large prospective studies on early detection of psychosis, have not included the phenomenological view of the anomalies of subjective experience. This is in spite of often having been considered by classic psychiatry and described in detail in schizophrenic disorders by phenomenological psychopathology.

After more than two decades of intensive research into early detection of psychosis, the need to recover the phenomenological perspective in the study of psychotic manifestations is becoming increasingly evident. This has traditionally been too limited by a categorical conception which does not favor refining, or which directly impedes its investigation and treatment.[4] This perspective implies observation and careful description of a phenomenon exactly as it manifests itself, giving a prevalent value to the experience the patient describes from their own subjective world. The aim of this is to try and recover the perspective of narrative or first person analysis of psychological suffering.[5]

In essence, the concept of the anomalies of subjective experience (ASE) would be primarily represented by Huber's phenomenological model of "Basic Symptoms". Basic Symptoms (BS) are defined as subtle, sub-clinical, and non-specific disturbances at a subjective level in motivation, emotion, cognition, perception, speech, stress tolerance, bodily perception, motor activity, and central vegetative functions.[6-10] Within ASE, and closely linked with the BS model, we can also include the clinical and philosophical approach of *self-disorders*; or *basic self-disturbances*, which has undergone significant conceptual and empirical development in recent years. Although both approaches share many descriptions of symptoms in their assessment protocols, *self-disorders* would focus more specifically on so-called anomalous experiences of the self, defined as a generalized or frequently recurring experience in which the perspective of oneself, as the subject of an experience or action, is in some way distorted.[1,4,*]

The present paper defines the phenomenological model of BS, specifically sets out the process of validation and empirical assessment for it, and concludes with a comprehensive integration of the most important aspects of this model, and by extension, the ASE approach within the field of early detection of psychosis.

## THE BASIC SYMPTOMS MODEL

BS were first described by Gerd Huber, a student of Kurt Schneider in the University Hospital of Heidelberg during the 1950s. Nowadays, this model has been continued and validated at an empirical-predictive level by Frauke Schultze-Lutter, Joachim Klosterkötter, and Stephan Ruhrmann, among others. The concept of BS could be summarized by this translation by Jimeno-Bulnes, Jimeno-Valdés, and Vargas (1996)[12] from the original German text by Huber:

> "*Psychotic symptoms recognized in schizophrenics as primary subjective experiences which constitute the basis of complex final psychotic symptoms, and which, it can be supposed, are found [to be] closer to the neurobiological substrate. They are, then, negative symptoms, characterized as complaints by the patients, which from a phenomenological point of view, broadly coincide with premonitory and pre-psychotic prodromal symptoms, and which, in reversible basic stages and irreversible pure defectual syndrome are perceived and expressed as deficiencies, shortcomings, or disorders*".

In other words, BS are the most immediate psychopathological expression of a supposed susceptibility or primordial organic alteration, hence the term "basic". In the form of deficits or basic alterations, they support possible subsequent productive psychotic symptoms. They seem to appear in a non-specific way at any stage of the schizophrenic disorder (pre-psychotic, psychotic, post-psychotic), meaning they are an integral part of the whole schizophrenic process. Various terms to name BS can be found in the literature, such as subjective cognitive dysfunctions, sub-clinical symptoms, or subjective experiences.[2] The two most defining characteristics in BS refer to its subjective quality, in terms of subjective symptoms or experiences which the patient perceives as belonging to their internal or private world, and its subtlety or sub-clinical nature, frequently experienced with surprise or doubt. However, these deficits are always recognized as belonging to the mental reality of the person experiencing them. The above implies that it is the affected person themselves who determines whether or not the phenomenon exists. BS are not exclusive to schizophrenia; they can also be found in other disorders on the psychotic-affective spectrum.[10,13]

In summary, the BS model conceived a new developmental and psychopathological view of schizophrenia which revised the classic doctrine of the heterogeneity of this disorder, by setting out the existence of a fundamental but subtle, or basic, symptomatology that is present throughout the schizophrenic process. This new approach enriches the study and diagnosis of initial, intermediate, and late phases of the disorder, and encourages the setting out of new interventions for prevention, therapy, and rehabilitation.[6,7,14]

* For a theoretical review of anomalies of the *self* in Spanish, see Pérez-Álvarez, García-Montes and Sass.[11]

**Table 1.** Basic Symptoms, Cognitive-Perceptive (COPER)

| Presence of at least one of the following ten basic symptoms with a score in SPI-A/SPI-CY ≥3 within the last three months and with the first occurrence ≥ 12 months |
|---|
| Interference of thought |
| Perseveration of thought |
| Pressure of thought |
| Thought blocking |
| Receptive speech disturbance |
| Reduced ability to discriminate between ideas and perception, fantasy and real memories |
| Unstable ideas of reference |
| Derealization |
| Visual perception disturbances |
| Acoustic perception disturbances |

**Table 2.** High-risk Criterion, Cognitive Disturbance (COGDIS)

| Presence of at least two of the following nine basic symptoms with a score in SPI-A/SPI-CY ≥3 within the last three months |
|---|
| Inability to divide attention |
| Interference of thought |
| Pressure of thought |
| Thought blocking |
| Receptive speech disturbance |
| Expressive speech disturbance |
| Unstable ideas of reference |
| Abstract thought disturbances |
| Attracting attention regarding visual field aspects |

## Empirical validation of Basic Symptoms

The phenomenology of BS has been broadly analyzed in numerous prospective investigations on early detection of psychosis over the past decade, culminating with the preparation of two criteria for psychosis risk: *at-risk criterion Cognitive-Perceptive Basic Symptom*, (COPER) and *high-risk Criterion Cognitive Disturbances*, (COGDIS) (tables 1 and 2). These criteria derived from the prospective *Cologne Early Recognition* (CER) study.[15] Over an average of 9.6 years using the *Bonn Scale for the Assessment of Basic Symptoms* (BSABS),[16,17] 160 patients were assessed who presented alterations akin to psychotic prodrome but who had never suffered a clear psychotic episode. Through an analysis of all items on the BSABS, a subgroup of cognitive and perceptive alterations was found which were highly predictive of psychosis, thus preparing the COPER criterion. Each one of these BS showed a high predictive value (area under curve - AUC ≥.70) and were present in at least 25% of the subjects who transitioned to psychosis. As a cutoff point to complete the criterion, the presence of at least one of the ten BS was statistically established, resulting in a final sensitivity of 87% for the COPER criterion, along with a specificity of 54%, and a positive predictive power of 65%.

The COGDIS criterion derived from a new analysis of the CER study data, finding a new combination of BS whose grouping was shown to be more predictive in comparison to seven other groups of symptoms.[18] A cutoff point was established as the presence of at least two of the new BS, resulting in a final sensitivity of 67% for the COGDIS criterion, along with a specificity of 83%, and a positive predictive power of 79%. As can be seen in the tables, the COGDIS criterion partially overlaps with the COPER criterion as they share five out of the nine BS. Even if both risk criteria had similar predictive precision (COPER: AUC=0.83; COGDIS: AUC=0.82), it was found that the COGDIS criterion marked out a mildly more imminent psychosis risk, as transition rates to psychosis were found to be a little higher in the COGDIS group in each of the four years of sample follow-up.[18]

The severity of the BS and the diagnosis of risk criteria can be defined according to distinct qualitative and quantitative criteria through the *Schizophrenia Proneness Instrument, Adult Version* (SPI-A),[19] also available in Spanish, and the *Schizophrenia Proneness Instrument, Child and Youth version*, (SPI-CY),[20] which will be explained later.

The valuable data from the CER study took a significant step forward in demonstrating the predictive value of psychosis of many BS. As a consequence, another study framed by the *European Early Detection and Intervention Centre* (FETZ)[21] reassessed the predictive capacity of the COPER/COGDIS criteria in a sample of 146 subjects with prodromic symptoms assessed with the SPI-A and the *Positive and Negative Syndrome Scale* (PANSS).[22] The results found that 124 subjects met COPER and COGDIS criteria, and 22 met only the COPER criteria. It was found that subjects who met COGDIS criteria presented high symptomatological intensity that was significantly greater in all subscales of the SPI-A and the PANSS, except in the dimension of negative symptoms in the latter. Although these findings confirmed the good predictive validity of the BS, they did not help the notion that the COPER criteria marked out a less imminent psychosis risk than the COGDIS per se when finding rates of transition to psychosis that were similar in both risk criteria.[9]

## Assessment of Basic Symptoms

Although the preparation and diagnosis of the COPER and COGDIS risk criteria is relatively recent, long ago there existed a long investigative tradition into the specificity of BS in relation to psychosis. The primary instrument of evaluation for BS is the previously-mentioned *Bonn Scale for the Assessment of Basic Symptoms*, (BSABS).[16,17] This is a semi-structured clinical interview that is self-applied in a binary question format. It includes 98 items or Basic Symptoms, operationally defined through questions and representative examples of the symptoms taken from other patients' experience, which helps with assessment. By way of guidance, the BSABS is structured into five primary categories of symptoms: dynamic deficiencies, cognition and thought, perception, motor and cenesthesic alterations, and central

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vegetative alterations. Although this is the most complete and referred-to instrument for evaluating BS, it takes a long time apply and requires prior training, which can make it difficult for clinical and research use.

In the wake of data from the CER study, a new instrument was constructed based on the BSABS - the aforementioned Schizophrenia Proneness instrument, Adult Version (SPI-A).[19] The SPI-A was designed empirically, which guarantees inclusion of all the BS which have shown high specificity for psychosis in prospective studies. Through analyzing two types of samples, one of 160 prodromic subjects and another of 346 subjects with a diagnosis of schizophrenia, six dimensions or subscales of BS were generated which were highly robust and viable in both samples of patients: affective-dynamic alterations (e.g., reduction in stress tolerance, changes in mood etc), cognitive-attention difficulties (e.g., high distraction by all types of stimuli, difficulties with short-term memory and concentration, etc), cognitive alterations (e.g., interference with thought, blocking thoughts etc), alterations in experience of the self and surroundings (e.g., increase in emotional reactivity, unstable ideas of reference, etc.), alterations in bodily perception (various types of unusual bodily sensations), and finally, alterations in perception (e.g., photopsia, micropsia, etc.). For a detailed description of the scales, see Schultze-Lutter and collaborators.[19,23] The dimension which showed the most diagnostic precision was that of cognitive alterations. The stability of the dimensional structure found throughout the different stages of the disorder led to the conclusion that these six dimensions were inherent to schizophrenia.[24]

In a similar way to the BSABS, the SPI-A was also conceived as a semi-structured interview, but the response format was no longer binary in order to become dimensional according to a six-point scale of severity. For each BS, coding criteria were established according to relevance. Frequency and severity were considered the most important.

One common and restrictive aspect of the current risk criteria for psychosis is that they have been developed solely or predominantly in samples of adults;[25] as a consequence, until now the design of early psychosis detection instruments has been based on this populational profile. Furthermore, investigations that study prevention and intervention for early-onset psychosis in child and youth populations (<18 years) are scarce.[26,27] Also relevant is the *German-Austrian-Swiss multicenter study* (VESPA)[28] which found that the prevalence of BS in a sample of adolescents in the general population is high (30.2%), increasing to 81% in a sample of adolescents with psychiatric, non-psychotic disorders, and up to 96.5% in cases with early onset psychosis. All of the above, plus the absence of a clinical tool for psychosis risk designed for this age group, leads to the assumption that important differential aspects in the child and adolescent population are not being treated.

To offset this lack, the *Schizophrenia Proneness Instrument, Child and Youth version* (SPI-CY)[20] was developed; an instrument specifically designed for this age group, according to the BS model. Initially it was intended to replicate the same dimensional structure found in the SPI-A in a sample of 2 subjects with early onset psychosis (18 years), but the data did not support this structure. As a consequence, new analyses were conducted which revealed a new structure of four dimensions which encompassed a total of 49 items on the BSABS.[29] These are: adynamia, perceptive alterations, cognitive alterations, and neuroticism. In comparison with the adult version, two dimensions stand out which are specific to the SPI-CY: the adynamic dimension, which covers symptoms present in the dimensions of affective-dynamic alterations and cognitive-attention difficulties in the adult version, plus other symptoms referring to lack of energy, persistence and motivation, and depressive episodes, and the dimension of neuroticism, which contains symptoms referring to reduced desire for social interaction, increase in emotional reactions, irritability, and phobic phenomena, among others.[20,23] In terms of the psychometric properties of the SPI-CY, to date, according to a study which compared three samples of children and adolescents (23 subjects with psychosis risk; 22 control subjects with non-psychotic problems; and 19 subjects from the general population), the subscales of the SPI-CY have a high level of discrimination between groups, with the adynamic dimension being especially notable.[30] In summary, the SPI-CY represents the only early detection tool designed for use in the child-adolescent population available today, although it still requires further prospective studies to validate it.[23,30,31]

## ANOMALIES OF SUBJECTIVE EXPERIENCE AND EARLY PSYCHOSIS RISK SYNDROME

Two main milestones can basically be summarized in the area of early detection of psychosis: The definition of a syndrome or state of high risk of psychosis according to certain clinical and functional criteria that are more or less agreed upon, and the parallel development of clinical tools to evaluate said state of risk. The term "*Ultra High Risk*" (UHR),[32] which comes from the Australian school of thought and is very widespread in Europe, was widely accepted as a set of criteria for imminent risk of psychosis at the end of the 1990s. However, this term has frequently been interchanged with "*At Risk Mental States*" (ARMS),[33] a better defined and cohesive concept of a possible prodromic state, or that of "*Clinical High Risk*" (CHR),[34] from the North American school of thought.

Primarily, the UHR criteria combine three risk indicators: 1. Family risk (first or second grade) and/or schizotype personality disorder, together with functional or psychosocial deterioration ≥30%; 2. *Attenuated Positive Symptoms*

(APS); and 3. *Brief Limited Intermittent Psychotic Symptoms* (BLIPS). In terms of the assessment instruments for these criteria, the *Comprehensive Assessment of At-Risk Mental States* (CAARMS)[35] and the *Structural Interview for Psychosis Syndromes* (SIPS), together with the *Scale of Prodromal Symptoms* (SOPS),[36] form the traditional assessment and investigation of the UHR and CHR, respectively.

In spite of the predictive value of the UHR state, the presence of early and highly imprecise symptoms has been demonstrated which also form part of the prodrome, and which are difficult to distinguish from alterations to mood, motivation, sociability, or concentration that are typical of depressive episodes.[37] In this sense, in a retrospective study on patients with a first psychotic episode,[38] a temporal symptomatic sequence was established which started with non-specific symptomatology occurring on average 8.2 years before the first psychotic outbreak, followed by cognitive-perceptive type BS together with attenuated psychotic symptoms (APS), with an average of 3.3 years before the first psychotic episode.

This data reflects a hypothetical sequential psychopathological evolution (non-specific symptoms→ BS/APS→ psychotic symptoms) in which the subjective alterations relative to the processing of information (cognitive BS) would largely derive from the emergence of specifically psychotic symptoms, thereby supporting the notion that the phenomenological focus of the BS would be complementary to the UHR in the early detection of psychosis.[24] In this vein, another study found that the inclusion of the BS (COPER) together with the UHR would define a more homogenous sample at the level of clinical and cognitive deterioration, which increased sensitivity to predicting which individuals would develop psychosis.[39] This notion of complementarity is supported by the fact that the UHR criteria is especially valid for detecting individuals with imminent risk of psychosis according to prospective studies, not just in the year of base study, but also at six months, and that the criteria according to BS manage to detect equally predictive symbols earlier upon maintaining some lower and more stable percentages of transition to psychosis beyond the first twelve months. This is a phenomenon that is consistent with the insidious presentation of BS before the first psychotic outbreak.

Therefore, integrating the findings referring to the predictive validity of the COPER/COGDIS and UHR criteria, together with the notion of an underlying symptomatic sequence in psychoses, a model of clinical risk has been suggested, structured into phases which would mark out three groups of risk:[37] 1. the so-called *Early At-Risk of Psychosis State* (ERPS), formed by the presence of risk BS (COPER) and/or a biological state of risk with functional deterioration of at least ≥30%. This is well defined as the existence of first-grade family members with a diagnosis of schizophrenia or a disorder on the schizophrenic spectrum, or even by a history of obstetric complications; 2. a subsequent *Late At-Risk of Psychosis State* (LRPS), determined by attenuated psychotic symptoms of the UHR criteria (APS and BLIPS); and 3. a state of early psychosis which would imply the presence of a clear psychotic symptom for more than one week. Obviously, the preventative measures would be centered on both states of risk, with the difference that in ERPS, the focus is more on cognitive-behavioral psychological interventions, while in the LRPS, the inclusion of psychopharmacological treatment could also be justified.[37]

Although at the start, the risk criteria according to BS and UHR were developed independently, researchers are increasingly combining both approaches,[23] as is the case in *Outreach and Support in South London* (OASIS),[40] where the sensitivity of the CAARMS interview is improved by introducing the subgroup of cognitive BS of the SPI-A. This strategy is also being carried out by our research group in the *Fundació Sanitària Sant Pere Claver*.[41,42] One of the most important examples in terms of outreach is the *European Prediction of Psychosis Study* (EPOS),[43] a multi-centric study made up of an initial sample of 245 subjects with psychosis risk defined according to UHR and COGDIS criteria. After 18 months, a transition to psychosis was found in 19% (37 subjects) and an overlap between risk criteria of 59.6%, the most sensitive predictive strategy being the combination of both criteria. In a similar way, two equally important studies framed in the *Dutch Prediction of Psychosis Study* (DUPS)[27,44] also found a similar overlap between UHR and COGDIS criteria; however, in a study by Ziermans et al.[27] based on a sample of 72 patients aged between 12 and 18, and defined by the same inclusion criteria as the EPOS study, it was found that the COGDIS risk criteria did not provide a supplementary discriminative value of transition to psychosis. This confused result on the validity of the COGDIS criterion reaffirms the need to increase research in this type of population and the use of instruments adapted to it, such as the SPI-CY.

Even if many highly specific BS of psychosis have been identified and successfully combined with other risk criteria, these also have a rather non-specific, non-characteristic nature, as they can also be found in other disorders on the psychotic-affective spectrum. This aspect, plus the fact that affective alterations such as depression are highly prevalent, even definitive, in many prodromic psychotic states,[45] make the doubt around the differential diagnostic power of the BS quite legitimate. In this sense, one study found that a group of subjects with a potentially prodromic state and a group with diagnosed schizophrenia did not differ in terms of the level of BS, but both groups did show much higher levels of BS than a group of subjects with non-psychotic depression, especially in the SPI-A subscales of cognitive alterations and alterations in the experience of the self and surroundings.[13] Previously, another study focused on evaluating the anomalies of the *self* through the BSABS in patients with residual schizophrenia and bipolar disorder[46] found that, compared

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with a bipolar group, subjects with a diagnosis of schizophrenia had higher scores in perplexity (loss of immediate meaning), perceptive alterations, alterations in self-awareness, and cognitive alterations.

In terms of the results set out above, further to the highly predictive group of BS (mostly cognitive type symptoms), there are also numerous phenomena of very important altered conscience or anomalies of the *self* which are characteristic of disorders on the schizophrenic spectrum. Along this same vein, later investigations which have assessed samples of subjects with psychotic spectrum disorders through the BSABS have confirmed that diagnoses of schizophrenia and schizo-type disorders predict high levels of anomalies of the *self*, and that the presence of these anomalies can differ in those subjects who belong to the psychotic spectrum and those who did not.[47] In a five-year longitudinal study called the *Copenhagen Prodromal Study* by Parnas and collaborators,[48] it was confirmed that high levels of perplexity and anomalies of the *self* (such as depersonalization, alterations in consciousness and action, or alterations of bodily perception) could be valuable diagnostic indicators of disorders on the spectrum.

Therefore in recent years, and similarly to what happened with BS, important efforts have been made in providing empirical-predictive support for these subtle or minimal anomalies in the normal flow of consciousness. One very relevant milestone was the development of the semi-structured interview *Examination of Anomalous Self-Experience* (EASE).[49] Although this interview overlaps in many symptom descriptions with the BSABS (e.g., mastery of cognitive or cenesthetic alterations), the EASE focuses more specifically on capturing alterations of the *self* instead of covering all potential ASE.[49,*]

Recently, and for the first time, prospective research has been carried out through the EASE on a sample of UHR adult subjects for 569 days (49 risk subjects and 52 controls). This was done in order to verify the predictive power of anomalies of the *self*.[50] It was found that scores in anomalies of the *self* were higher in cases diagnosed with some disorder on the schizophrenic spectrum. It was also found that the total EASE score significantly predicted transition to psychosis, and that of the five dimensions of the EASE, two were significantly more predictive: cognition and current of consciousness, and self-awareness and implication in the world (presence). In terms of samples of subjects who are minors, one study using the EASE and SIPS (*Structural Interview for Psychosis Syndromes*) assessed for the first time a sample of 87 adolescent patients with emotional and behavioral problems (14 to 18 years),[51] and found that anomalies of the *self* were quite prevalent among adolescents with clinical alterations, although surprisingly, with a considerably lower rate than the sub-clinical psychotic symptoms measured with the SIPS. A moderate overlap was also confirmed between alterations of the *self* and prodromic symptoms, which suggests that both groups of symptoms could represent two distinct but related markers of clinical variability of psychosis. This final result is in line with the demonstrated complementarity between the risk criteria according to BS and UHR in adult samples, but it does not unravel the possible generative role of anomalies of the *self* in psychotic symptoms. Despite these interesting results, more prospective research is needed to continue reinforcing the empiric validity of this phenomenological approach and tackle the design of risk criteria which maximize their clinical effectiveness.

* For a revision in Spanish of this interview and its scales, see Pérez-Álvarez et al.[11]

## CONCLUSION

The BS model, and by extension, the approach of the anomalies of subjective experience (ASE) are positioned as a phenomenological alternative to the clinical models based on the cardinal symptoms of psychoses, and as a highly valid complement in detection and early intervention strategies for psychosis. Through rigorous empirical methods, research has demonstrated that a subgroup of cognitive and perceptive type BS have at least the same predictive capacity for a first psychotic episode as UHR criteria, and that the combination of both strategies mutually increases the predictive precision of both types of criteria. Furthermore, the prospective evaluation of the anomalies of *self* are also becoming a promising area for empirical investigation which will enrich and refine psychosis risk syndrome, until now defined through sub-clinical psychotic symptoms (UHR) and in some cases, through very predictive BS (COPER/COGDIS). Because of all this, the ASE and instruments that they assess are inevitable for any clinician interested in researching, understanding, and treating the subtle but determinant emergence of disorders on the psychotic spectrum.

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### Conflict of interest

The authors do not declare any conflicts of interest.

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