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Beliefs About Psychological Problems Inventory (BAPPI): Development and Psychometric Properties

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Abstract

The clients' belief systems are components of Effective Therapy Relationships. Thus, it is desirable to include clients' beliefs about their psychological problems on systematic assessment protocols underlying the process of systematic treatment selection and of tailoring the treatment to the person. However, assessment instruments which specifically capture clients' beliefs about their psychological problems are scarce. The objective of the studies presented was to evaluate the psychometric properties of the *Beliefs About Psychological Problems Inventory* (BAPPI), an assessment instrument of the clients' beliefs about their psychological problems. Study 1 (Exploratory Factor Analysis) involved 200 participants, and Study 2 (Confirmatory Factor Analysis and other validity studies), involved 545 participants. Results revealed that the BAPPI presents a stable factorial structure of six dimensions (Psychodynamic, Humanistic, Biomedical, Cognitive-Behavioral, Systemic, and Eclectic/Integrative). Altogether, analyses of items, internal consistency, reliability, and external validity revealed that the BAPPI is a valid assessment instrument for use in mental health research and practice, especially in the process of systematic treatment selection and, therefore, of matching/tailoring the treatment to the client's characteristics.
Key words: beliefs; treatment selection; causes of psychological problems; psychometrics; BAPPI.

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Novelty and Significance

What is already known about the topic?

- Individuals' beliefs about their psychological problems predict health (including mental health) processes and outcomes.
- Beliefs about psychological problems are relevant to inform the therapeutic process.
- Instruments to measure beliefs about psychological problems consistent with the major psychological and psychotherapeutic models are scarce.

What this paper adds?

- This paper describes an instrument (BAPPI) that assesses beliefs about psychological problems consistent with the assumptions of the major psychological/psychotherapy modelsl.
- BAPPI presents good psychometric properties, and may be used in research and practice.

The understanding of how to promote therapeutic effectiveness using tailoring the treatment also to the clients' transdiagnostic characteristics became one of the major challenges of contemporary Mental Health treatments, especially of psychotherapy. Clients' characteristics are at the core of psychotherapy, as it impacts several treatment processes and outcomes (Boswell, Gallagher, Sauer-Zavala, Bullis, Gorman, Shear, Woods, & Barlow, 2013; Imel, Baer, Martino, Ball, & Carroll, 2011; Webb, DeRubeis, & Barber, 2010).

Consistently, major scientific and institutional organizations, such as the APA's Task Force on Evidence-based Psychotherapy Relationships, are making efforts to identify 1) the components of effective therapy relationships, and 2) the effective processes leading to effective tailoring of the treatment to the person (APA, 2006; Norcross & Wampold,

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2011). Belief systems are core components of individuals' psychosocial organizations, including behavior change; they play a fundamental role in the way clients mobilize their psychological resources to behavioral change. Assessing clients' representations and beliefs is of great importance to psychotherapy as they are very informative about a) clients' characteristics that need to be considered in the systematic treatment selection process, b) clients' meanings systems about his/her developmental and functioning patterns, resulting from previous spontaneous conceptualizations about his/her functioning (including the spontaneous attempts of self-understanding and self-help), and c) the psychological environment where behavioral change is to occur. Clients' beliefs are mechanisms underlying the patterns of clients' responses to the therapeutic interaction.

Despite the importance of the clients' systems of beliefs about the causes of their psychological problems (also called preferences, attributions, etc.) for an effective adaptation of the treatment person (Bahar, Beck, & Butler, 2012; Moffitt, Haynes, & Mohr, 2015; Norcross & Wampold, 2011; Swift & Callahan, 2009; Swift, Callahan, & Vollmer, 2011), assessment measures of this phenomenon that are both reliable and user-friendly (so they can be included in systematic assessment protocols) are still scarce. The objective of this study was to test the psychometric properties of the *Beliefs About Psychological Problems Inventory* (BAPPI) an assessment instrument of the clients' beliefs about their psychological problems.

Beliefs refer to mental constructions about reality, differentiated throughout peoples' experiences, which orient/determine individuals' behaviors (Frosch, Kimmel, & Volpp, 2008). Beliefs are higher-order representations about reality (including about the self the others, and the broader reality), and play an important guiding role in the individuals' argentic mechanisms. Belief systems have been traditionally studied by different disciplines (from social to clinical psychology) and have been approached by different research traditions. Consequently, different labels are referring to the same phenomenon, depending on the discipline or the research approach they come from. The concept of belief is perhaps the mostly broader construct referring to the individuals' socio-cognitive organizations about reality. However, the individuals' representations about reality present several specificities, mostly related to the object of the representation. Different labels have been adopted to capture different beliefs at several levels. Examples include attributions, perceptions, values, opinions, self-concepts, or standards.

Regardless of its labels, or the research traditions they derive from, mental representations are amongst the main determinants of behavior, the reason why is considered as one of the main organizers of personality, from normal to abnormal personality (Arntz, Dreessen, Schouten, & Weertman, 2004; Asendorpf, 2007; Cloninger, Svrakic, & Przybeck, 1993; Josefsson, Jokela, Cloninger, Hintsanen, Salo, Hintsa, Pulki-Raback, & Keltikangas-Jarvinen, 2013; Oltmanns & Turkheimer, 2009).

The importance of individuals' beliefs system for describing and predicting human behavior is highlighted by frameworks coming from multiple scientific disciplines, reflecting its importance to understanding multiple functioning domains. Examples of frameworks describing the mechanisms throughout which systems beliefs influence behaviors to include George Kelly's Theory of Personal Constructs (Kelly, 1955), Social Learning Theory (Bandura, 2005), Cognitive-behavioral psychotherapies (Murguia & Díaz, 2015), Beck's Cognitive therapy (DeRubeis, Webb, Tang, & Beck, 2011), Ellis' Rational, Emotive and Behavioral therapy (Dryden, David, & Ellis), Cloninger's biopsychological model of Personality (Cloninger, Svrakic, & Przybeck, 1993; Josefsson *et alia*, 2013), or more recent models of identity, such as the Theory of Narrative Identity (McAdams & Pals, 2006; McLean, Pasupathi, & Pals, 2007; Pasupathi & Hoyt, 2009). These frameworks all converge on the assumption that beliefs are crucial components of agency mechanisms, and, therefore, they shape individuals' ways of thinking, feeling, and behaving.

Besides, meta-theories (including self-determination, bioecological theory, or the transtheoretical model and stages of change) emphasize the importance of individuals' beliefs systems in describing transactional processes between individual and context (Bronfenbrenner & Bronfenbrenner, 2009; Prochaska, Redding, & Evers, 2008; Wang & Eccles, 2012). Belief systems, as "psychological environment" are a more proximal "environment" for individual experiences than the objective environment itself (e.g. Ames, 1992; Muryama & Elliot, 2009; Wang & Eccles, 2012).

The clients' understanding of the causes of the psychological problems is of great importance for treatment (Lee & Bishop, 2001) as it constitutes the more proximal meaning environment underlying the clients' subjective experience of its psychosocial functioning. Similarly to what happens to therapists theoretical orientation (which refers to a rational used as a plausible explanation for a given condition, as well as their underlying mechanisms, from their genesis to its evolution) (Ogunfowora & Drapeau, 2008), clients have also some type of understanding about their experiences, and, therefore, they have beliefs about their psychological problems. As a consequence, all actions aimed to exert an impact on human behavior, including therapeutic interventions, need to consider the individual differences in beliefs system (Ingram & Siegle, 2011).

Beliefs about psychological problems and mental health are personal and idiosyncratic knowledge that influence general patterns of thought, affect, and behavior towards treatment, including beliefs about psychological problems and therapeutic modalities (Duncan, Miller, Wampold, & Hubble, 2010; Furnham, 2009; Furnham, Pereira, & Rawles, 2001; Jorm, 2000; Marshall, Jones, Ramchandani, Stein, & Bass, 2007; McLeod, 2011; McLeod, 2012; Nakane, Jorm, Yoshioka, Christensen, Nakane, & Griffiths, 2005; Riedel-Heller, Matschinger, & Angermeyer, 2005; Wagner, Bystritsky, Russo, Craske, Sherbourne, Stein, & Roy-Byrne, 2005). Clients' beliefs about their psychological functioning (including the causes of their psychological problems) are available to clients' processing of their reality, which becomes salient when it comes to the meaning-making processes. As confirmed by the APA Task Force on Evidence-Based Practice (2006) and by several meta-analyses, the transdiagnostic client's characteristic of preferences or beliefs about psychological problems and psychotherapeutic modalities is an element of effective therapy relationships, both at treatment processes and outcomes levels (e.g. Norcross & Wampold, 2011; Swift & Callahan, 2009; Swift, Callahan, & Vollmer, 2011).

Nunnally (1961) conducted one of the seminal works on the clients' beliefs about their psychological problems and concluded that clients have a variety of beliefs about the causes of their psychological problems, ranging from organic, personal history to environmental and contextual factors. These results were confirmed by other studies, which consistently identified as the self-perceived main causes were intrapsychic and psychological/relational more than biological and genetic factors (e.g. Angermeyer & Matschinger, 1999; Whittle, 1996). Besides, individuals preferred approaches emphasized self-understanding. For example, in a study conducted by Mellot, DeStefano, French-Bloomfield, and Kavcic (1999) the majority of the individuals identified themselves with approaches to behavioral change more based on self-understanding rather than those relying on the changing of contextual characteristics or organic treatments.

As stated by Miller (1991), the clients' belief systems allow for the identification of the clients' understandings about the causes of their problems and the clients' tendencies and preferences about the treatment.

There has increasingly been a shift from a therapist-centric to a client-centered approach to research and practice to treatment adherence and competence (Boswell *et alia*, 2013). Clients' beliefs are important not only as discrete variables but also because they are part of clients' complex and dynamic meaning-making and narrative processes

involved in psychotherapy from various theoretical orientations (Moreira, Beutler, & Gonçalves, 2008; Moreira & Gonçalves, 2010; Moreira, Gonçalves, & Matias, 2011). If at the end of the XX century there was a raising of interest about the clients' transdiagnostic characteristics, the last decade was characterized by an exponential raising of interest by the specific transdiagnostic characteristics of cognitive representations, including preferences and beliefs about psychological problems and mental health treatments (McLeod, 2012).

Several decades after the first studies about the clients' beliefs about psychological problems and treatment modalities, there is a robust body of research showing that the majority of patients do have different beliefs about different treatments and that they have preferences for one treatment over the others, even in randomized control studies (Leykin, DeRubeis, Gallop, Amsterdam, Shelton & Hollon, 2007).

Besides the fact that there are individual differences in the clients' beliefs about their psychological problems and the preferred treatment modality, the importance of the clients' beliefs system relies on the fact that they have a significant impact on treatment both processes and outcomes (Bystritsky, Wagner, Russo, Stein, Sherbourne, Craske & Roy-Byrne, 2005; Dietrich, Beck, Bujantugs, Kenzine, Matschinger & Angermeyer, 2004; Lee, & Bishop, 2001; Wagner, Bystritsky, Russo, Craske, Sherbourne, Stein, & Roy-Byrne, 2005).

Clients' beliefs and representations about the etiology of mental disorders and the perceived causes of psychological problems have a strong impact in all the treatment phases and processes, from professional help-seeking to treatment dropout (Chen & Mak, 2008). Firstly, clients' disclosure and help-seeking for psychological problems are strongly influenced by his/her beliefs about mental health disorders and cultural values (Agorastos, Demiralay, & Huber, 2014; Brohan, Henderson, Wheat, Malcolm, Clement, Barley, Slade, & Thornicroft, 2012; Couture, & Penn, 2003; Jorm, 2000; Morgan, Reavley, & Jorm, 2013; Nakane *et alia*, 2005; Wong, Tran, Kim, Kerne, & Calfa, 2010).

Secondly, prevention and early intervention for mental health are significantly dependent on the clients' system of beliefs about their psychological functioning (Kelly, Jorm, & Wright, 2007; Nakane Jorm, Yoshioka, Christensen, Nakane, & Griffiths, 2005; Reavley, & Jorm, 2012), seeking for help in crises is strongly influenced by the similarity between client's and therapist's attributions and attitudes (Jack & Williams, 1991 cited in Whittle, 1996).

Thirdly, the belief system predicts the client's perceptions about the therapist's credibility and the clients' satisfaction with therapy (Atkinson, Worthington, Dana, & Good, 1991). Therapeutic relations are more productive when the therapist and client share the same values system (Hutchins, 1984). Clients' representations and preferences about treatment impact on therapeutic alliance and research increasingly demonstrate the clinical benefits of assessing and considering them for the process of treatment selection (e.g. Iacoviello, McCarthy, Barrett, Rynn, Gallop, & Barber, 2007).

Fourthly, the beliefs system is one of the most important dimensions underlying clients' adherence to the different treatment modalities, from pharmacotherapy to psychotherapy (Chakraborty, Avasthi, Kumar, & Grover, 2009; Sher, McGinn, Sirey, & Meyers, 2014), and there is less dropout from therapy when patients receive treatment consistent with their preferences (Swift & Callahan, 2009). Finally, also stigmatization about mental problems is highly dependent on individuals' system of beliefs about psychological problems (Dietrich *et alia*, 2004; Ebneter, Latner, & O'Brien, 2011; Harré, 2001; Jorm, 2000; Jorm & Griffiths, 2008; Morgan, Reavley, & Jorm, 2013; Nakane *et alia*, 2005; Reavley, & Jorm, 2011; Reavley & Jorm, 2012, 2014).

The clients' beliefs about their psychological problems exert a significant impact on therapeutic outcomes (Furnham, Pereira, & Rawles, 2001; Hunt, Sullivan, Chavira,

Stein, Craske, Golinelli, Roy-Ryrne, & Sherbourne, 2013; Jorm, Nakane, Christensen, Yoshioka, Griffiths, & Wata, 2005; Reavley & Jorm, 2012). The matching between the clients' beliefs and preferences about treatment and the selected therapeutic model has a positive impact on therapeutic outcomes (Glass, Arnkoff, & Shapiro, 2001), with better results being observed among clients' who receive treatment consistent with his/her beliefs and preferences (Pistrang & Barker, 1992; Swift & Callahan, 2009). Clients' belief systems and preferences about treatment are a moderator of the therapeutic outcomes in different psychopathological conditions, and different modalities (Constantino, Arnkoff, Glass, Ametrano, & Smith, 2011; Kocsis, Leon, Markowitz, Manber, Arnow, Klein, & Thase, 2009).

In sum, clients' beliefs about their psychological functioning, including treatment preference, have been systematically found to affect treatment satisfaction, completion, and clinical outcomes (Lindhiem, Bennett, Trentacosta, & McLear, 2014). Therefore, there is a need to consider and to include clients beliefs in the clients' general assessment and the diagnostic assessment (Adewuya & Makanjuola, 2008; Bhar, Beck, & Butler, 2012), in the process of matching the therapeutic plan to each client's characteristics (Castonguay & Beutler, 2006; Corrigan & Salzer, 2003; Kwan, Dimidjian, & Rizvi, 2010; Lee & Bishop, 2001; Nguyen, Bertoni, Charvat, Gheytanchi, & Beutler, 2007; Preference Collaborative Review Group, 2008; Sidani, Epstein, & Miranda, 2006), and in the process of professional training (Boswell *et alia*, 2013).

Previous research on clients' beliefs about their psychological problems relied firstly on assessments based on qualitative data and then moved to quantitative data. Examples of existing quantitative assessment instruments used in previous research include the *Treatment Expectancies Questionnaire* (TEQ; Caine, Wijesinghe, & Wood, 1973), the *Causes of Illness Inventory* (CII; Foulks, Persons, & Merkel, 1986), *Causal Belief Questionnaire* (CQB; Whittle, 1996), the *Opinion about Psychological Problems* (OPP; Pistrang & Barker, 1992), or the *Questionnaire of Reasons for Depression* (QRD; Addis, Truax, & Jacobson, 1995). The *Treatment Expectancies Questionnaire* (TEQ; Craine, Wijesinghe, & Wood, 1973) captures the clients' for two treatment modalities: biological approach, including individual behavioral therapy and group psychodynamic psychotherapy. The *Causes of Illness Inventory* (CII; Foulks, Persons, & Merkel, 1986) assessed two main approaches: explanations consistent with the medical model (which constituted the dimension 1), and non-medical explanations (the second dimension, which included other explanations, but that did not differentiate amongst the different non-medical theoretical models). The *Causal Belief Questionnaire* (CQB; Whittle, 1996) assessed four main factors: psychosocial variables (education), biological variables, structural conditions (cultural beliefs), and stress and recent life events. The *Opinion about Psychological Problems* (OPP; Pistrang & Barker, 1992) represented a significant advance on the methodology used for assessing the beliefs about psychological problems for two main reasons. On the one hand, it considered the client's beliefs at two levels: beliefs about the causes of the psychological problems and beliefs about the treatment preferences. On the other hand, it captured beliefs consistent with the major psychotherapeutic model approaches. However, and because of the very complex proposed factorial structure of this instrument, no study is known that describes this instruments' factorial structure and psychometric properties. The *Questionnaire of Reasons for Depression* (QRD; Addis, Truax, & Jacobson, 1995) has received empirical support for its factorial structure composed of the dimensions of Achievement, interpersonal conflict, Intimacy, Existential, Childhood, Physical, and Relationship. Additionally, it has been recently used for the standardization of national populations' studies (Thwaites, Dagnan, Huey, & Addis, 2004).

In sum, the available assessment instruments on the clients' beliefs about their psychological problems present substantive limitations, including a) the very limited number of dimensions assessed (e.g. medical VS non-medical, such as the CII; or biological/ individual VS psychodynamic/group, such as the TEQ); b) the mixture between the nature of causes consistent (with some been consistent with major psychotherapy models, but other dimensions referring to other reasons (such as education) –this is the case of the CQB; c) the inexistence of studies attesting for its psychometrics validity (such as the OPP); or d) despite the empirical validity for its factorial structure, some questionnaires are disorder-specific (such as the QRD). Finally, some instruments used in very recent published studies (such as the case of the study developed by Adewuya, and Makanjuola in 2008) assess dimensions such as superstition and other dimensions that are specific to African populations, and less consistent with the culture of Occidental populations.

The objective of this study was to analyze the psychometric properties of the BAPPI, a short instrument (23 items) that assesses the individuals' beliefs about their psychological problems.

METHOD

Participants

To test the psychometrics of the BAPPI we conducted two studies. In the first one, we performed the Exploratory Factor analysis, and in the second study, we performed the Confirmatory Factor Analysis and the other validity evidence analyses.

In study 1, 200 individuals from the North of Portugal participated (155 female, 77.5%), age 17-64 years (M= 28.39; SD= 9.34). This was a convenience sampling technique using the snowball technique. In terms of the participant's Education, 14 participants (7%) had the 9th school grade or less; 102 (51%) had completed the 12th school year; and 83 (41.5%) had completed a University degree.

In study 2, 545 individuals participated (160 female, 29.36%), age between 16-82 years (M= 32.22; SD= 12.01). Concerning Education, 113 (20,7%) had 7 years of schooling or less; 224 (41,10%) had completed secondary school; and 205 (about 37,6%) had some university degree. The sample included 151 (28%) psychology students, and 373 (68%) not studying psychology. Therefore, the majority of the sample was not familiarized with the concepts addressed by this investigation.

We included in the questionnaire items to capture information regarding the participants' previous experiences with Mental Health services. 164 (30%) individuals had received professional help from a psychologist before, 100 (18%) had received professional help from a psychiatrist and 122 (22%) had received professional help from the generalist physician only. Only 47 (9%) individuals had received a psychotherapeutic treatment before, and 174 (32%) had used drugs for psychological problems (anxiolytics, antidepressants).

Instruments and Measures

Beliefs About Psychological Problems Inventory (BAPPI). The BAPPI was developed with the aim of overcoming the limitations of the existing instruments assessing the Beliefs about the psychological problems. In this process we followed the Guidelines for the development and testing of psychological tests (American Educational Research Association, 1999), and which are obviously, consistent with other eminent proposals (e.g. Carretero Dios & Meléndez Pérez, 2007). The BAPPI captures individual's understanding of their psychological problems, consistent with the six main theoretical approaches to mental health problems treatment: Biomedical, Psychodynamic, Humanistic,

Systemic, Cognitive-Behavioral, and Eclectic. Consistently, careful synthesis of the main assumptions of these theoretical approaches was gathered from an exhaustive review of several sources. An important question to us was how to guarantee fidelity between the proposed assumptions of each theoretical model and those assumed by their respective eminent representatives and advocates. To test our preliminary assumptions of each therapeutic model, we selected some of the major handbooks of models of psychotherapy and therapy approaches. These handbooks included chapters for each theoretical orientation written by eminent authors and major representatives (acknowledged by their peers) of their respective theoretical approaches. The main sources for the identification of the representative assumptions were as follows. For Psychodynamic Psychotherapy, we used the chapters of Karon and Widener (1995), Binder, Strupp, and Henry (1995), Luborsky, O'Reily Landry, and Arlow (2010), and Douglas (2010). For Systemic psychotherapies, we used the chapters by Clarkin and Carpenter (1995). For Eclectic / Integrative psychotherapies we used the chapters by Goldfried and Norcross (1995), Beutler, Consoli, and Williams (1995), Beutler, Harwood, and Caldwell (2010), Beutler, Consoli, and Lane (2005), Prochaska and DiClemente (2005) and Norcross and Beutler (2010). For Systemic psychotherapies, we used the chapter by Raskin, Rogers, and Witty (2010). For Cognitive-Behavioral psychotherapies, we used the chapters by Meichenbaum (1995), Dryden, David and Ellis (2011), DeRubeis, Webb, Tang, and Beck (2011), Ellis (2010), Wilson (2010), and Beck and Weishaar (2000). After having selected these resources as the main sources of information for the main assumptions of each therapeutic model, and based on them, the first set of items was generated with the main of capturing the main assumptions of the respective therapeutic models. This preliminary set of items (70 items) were then analyzed by pairs of judges (who were experts on psychotherapeutic models), who rated each item in terms of the degree to which it captured the basic assumptions of each therapeutic model. Only the items that were consensually considered as capturing the basic assumptions of each model were kept and included in the next step (48 items filled this criterion). This set of items (48) was rated by other judges blind to the item selection, who asked the question "what therapeutic model this item refers to?" The objective of this procedure was to test the degree to which there was consensus between the two groups of judges about the theoretical affiliation of the diverse items. From this process, 25 items were consensually considered as being representative of the main assumptions of their respective theoretical models. Then, these 25 items were answered by a group of potential participants in the study, using the think-aloud method. In this process, two items were excluded, meaning that we had 23 items for the first version of the questionnaire. Answers to items are in a Likert-scale format, with values 0= totally disagree, 1=agree; 2=not agree nor disagree; 3=agree; and 4=Totally agree. The Biomedical scale comprises 3 items, the Cognitive-Behavioral 4 items, the Psychodynamic scale by 2 items; the Humanist scale by 4 items; the Systemic scale by 5 items; and the Eclectic/Integration scale is composed of 5 items.

Opinion about Psychological Problems (Pistrang & Barker, 1992). This scale assesses the clients' perceptions about the causes (47 items) and the treatment (47 items) for psychological problems. Items are distributed in 7 scales: Psychodynamic, Humanist/ interpersonal, Behavioral, Cognitive, Organic, Socioeconomic, and Naïve.

Perceptions about help-seeking for psychological problems. We were also interested in understanding how the individuals' beliefs about their psychological problems were associated with a) their previous experience with Mental Health services and b) their perception about the perceived relevance of receiving help for mental health problems. Thus, we included additional 5 items capturing these features: "In the past, I received a drug treatment for a psychological problem"; "In the past, I received psychotherapeutic treatment for a psychological problem"; "If I have a friend or a family member with a psychological problem, I will recommend that he/she looks for help from a psychologist"; "If I have a friend or a family member with a psychological problem, I will recommend that he/she looks for help from a psychiatrist"; and "If I have a friend or a family member with a psychological problem, I will recommend that he/she looks for help from a general physician."

Procedure

Data collection was made through the snowball technique. After signing the informed consent, participants filled out the questionnaires and sent them in a closed envelope to the research team. In all cases, participants started by answering to the Socio-demografic questionnaire. However, regarding the order of the questionnaires, 2 different protocols were organized. In Protocol 1, participants answered first to the Opinion About Psychological Problems (OPP) and then to the BAPPI. In Protocol 2 participants ansewred first to the BAPPI and then to the OPP. Then Protocols were distributed randomly to participants. We have adopted this procedure to control the order of the instruments and the potential bias resulting from a previous exposure to related items in the response to later items. At the end, we obtained a balanced number of participants in each one of the protocols. Participants did not receive compensation to participate in this study.

Data Analysis

Except for the Confirmatory Factor Analysis (which was made using the AMOS, version 18.0), all analyses were performed using the SPSS for Windows, version 17. To test how the items and factors were consistent with the construct, its semantic features, and expected factorial structure, we performed exploratory and confirmatory factor analyses, which differ on the degree of restrictions imposed on the factorial solution (Muñiz, Elosua, & Hambleton, 2013). Firstly, we imposed minimal restrictions on the estimation of the factorial structure the reason why we performed the Exploratory Factor Analysis with the Promax Rotation (because we assumed that the underlying dimensions are correlated). To test the final factorial structure, we performed the Confirmatory Factor Analysis, which allowed us for testing the factorial structure using a combination of different fit indices: the Chi-square (χ^2), the *Root-Mean Square Error Approximation* (*RMSEA*) (Hu & Bentler, 1999), the *Goodness of Fit Index* (*GFI*) (Joreskog & Sorbom, 1989), the *Comparative Fit Index* (*CFI*) (Bentler, 1990), and the *Tucker and Lewis Index* (*TLI*) (Tucker & Lewis, 1973). Non-significant values of χ^2 are an indicator of a good fit, but in big samples, a combination of other fit indices needs to be considered. Values greater than .90 *GFI* for and .95 for *CFI*, and *TLI* are indicative of good fit (Byrne, 2001), but values higher than .90 for *GFI*, *CFI*, and *TLI* are also considered indicative of good fit but prominent authors (Hu & Bentler, 1999; Ullman & Bentler, 2003). Generally, values less than or equal to .05 for *RMSEA* are indicative of a good fit (Byrne, 2001, 2013). *Maximum Likelihood* (*ML*) estimation method was used, once the items were consistent with the presupposition of normality required for its use (Byrne, 2001, 2013). Based on the descriptive statistics, on the discrimination indices, and the factor loading of the items, the final items were selected, as suggested (American Educational Research Association, 1999; Lloret Segura, Ferreres Traver, Hernández Baeza, & Tomás Marco, 2014). For the estimation of reliability, the internal consistency of the scales using Cronbach's α was estimated (Carretero Dios & Meléndez Pérez, 2007). Finally, and to test the external evidence validity, we tested the convergent validity of the scale with the scales of the *Opinion About Psychological Problems* (Pistrang & Barker, 1992).

RESULTS

Descriptive statistics of the items are displayed in Table 1. Based on the suggestions made by eminent statisticians, the descriptive is acceptable. For example, according to Nunnally and Bernstein's (1994) proposal, discrimination items need to be higher than .25/.30 in 90% of the cases, which is in line with what was found.

Table 1. Dimensions, Items and indicators of Items' Discrimination.

	M	*SD*	*Skewness*	*Kurtosis*	Item-total
System_My behaviors are mainly determined by the characteristics of my family	2.15	.96	-.20	-.87	.85
System_What influenced the mostly the way I am were the relations with my family's members	2.41	.91	-.57	-.54	.80
System_My behaviors are mainly determined by the relationships that I have with the members of my family	2.11	.93	-.04	-.69	.78
System_The characteristics of my family are what influenced the most the way I am	2.63	.96	-.58	-.52	.79
System_My family's characteristics are the main responsible for me being the way I am	2.65	.90	-28	-.66	.33
Ecl/Int_There are several ways for me to succeed in changing my behaviors	2.97	.56	-,89	4.57	.43
Ecl/Int_We understand better the situations and behaviors, when we analyze them from several perspective	3.29	.60	-.36	.14	.57
Ecl/Int_The most of the times, there are several ways to explain peoples' behaviors	2.88	.73	-.66	.67	.68
Ecl/Int_The causes of the psychological problems are different from person to person	2.49	.83	-.57	-.03	.48
Ecl/Int_There are several ways of explaining why people have psychological problems	2.59	.95	-.89	.81	.70
Hum_Once people fulfill their basic needs, they will change or growth	2.82	.78	-.99	1.62	.49
Hum_The direction people give to their lives dependo n their decisions	2.40	.98	-.33	-.60	.51
Hum_I am responsible for the decisions I make	1.71	1.04	.14	-.71	.48
Hum_In order to people may change, they need for the context to give them the basic conditions	2.72	1.04	-.56	-.55	.52
Cogn/Beh_If my behaviors had had different consequences, I would be different as a person	2.39	.89	-.54	-.26	.76
Cogn/Beh_If I thought in a different way, I would have different behaviors	3.12	.58	-.17	.56	.40
Cogn/Beh_I would succeed in changing my behaviors if was able to see things differently	2.41	.81	-.53	-.21	.69
Cogn/beh_One can't change a behavior without changing the perspective about it	2.41	.80	-.50	-.19	.62
Psychod_If I knew why I have certain behaviors, I would succeed in changing them	2,46	.76	-.40	-.50	.93
Psychod_If I was aware of what is influencing my behaviors, I would succeed in changing them	2.48	.77	-.53	.29	.94
Biomed_My brain is the main responsible for me having the behaviors I have	2.58	.80	-.76	.70	.09
Biomed_The peoples' psychological problems are mainly due to their brain' functioning	2.21	1.07	-.39	-.73	.10
Biomed_People can change their psychological problems if they take medication	2.48	.90	-.45	-.22	.10

Note: Item-total= Item-total correlation dimension.

To obtain a factorial structure of the scale, we performed an Exploratory Factor Analysis (EFA), with minimal restrictions. A factorial structure of 6 factors was found (Systemic, Eclectic/Integrative, Psychodynamic, Humanist; Cognitive-Behavioral and Biomedical). This structure was consistent with the theoretically and semantically hypothesized structure (Table 2). Factor 1 groups items from the systemic approach; Factor 2 groups items from the Eclectic/integrative approach; Factor 3 group items from the Humanistic approach; Factor 4 groups the items from the Cognitive-Behavioral approach; Factor 5 groups the items of the Psychodynamic approach; and Factor 6 groups

Table 2. Results from the factorial exploratory analysis of the BAPPI.

Item	Factor					
	1	2	3	4	5	6
My behaviors are mainly determined by the characteristics of my family	**0.860**	0.035	0.054	0.061	0.023	0.064
What influenced mostly the way I am were the relations with my family's members	**0.846**	0.070	0.044	0.085	-0.009	-0.010
My behaviors are mainly determined by the relationships that I have with the members of my family	**0.812**	-0.083	0.050	0.054	0.086	0.039
The characteristics of my family are what influenced the most the way I am	**0.793**	0.188	0.075	0.016	0.039	0.024
My family's characteristics are the main responsible for me being the way I am	**0.728**	0.057	-0.031	0.172	0.093	0.234
There are several ways for me to succeed in changing my behaviors	-0.036	**0.739**	0.078	0.031	0.119	0.004
We understand better the situations and behaviors, when we analyze them from several perspectives	0.053	**0.716**	0.062	0.170	0.023	-0.060
The most of the times, there are several ways to explain peoples' behaviors	0.097	**0.677**	0.040	0.181	0.134	0.021
The causes of the psychological problems are different from person to person	0.089	**0.670**	0.048	0.046	0.072	0.017
There are several ways of explaining why people have psychological problems	0.005	**0.660**	0.113	0.351	0.028	-0.034
Once people fulfill their basic needs, they will change or growth	0.044	-0.022	**0.787**	0.014	0.064	-0.006
The direction people give to their lives depends on their decisions	0.107	0.047	**0.785**	0.111	0.021	-0.010
I am the main responsible for me being the way I am	-0.072	0.083	**0.625**	0.121	-0.083	0.149
In order to people may change, they need for the context to give them the basic conditions	0.098	0.229	**0.532**	-0.050	0.143	0.079
If my behaviors had had different consequences, I would be different as a person	0.154	0.050	-0.018	**0.735**	0.142	0.205
If I thought in a different way, I would have different behaviors	0.169	0.364	0.002	**0.625**	-0.040	0.028
I would succeed in changing my behaviors if was able to see things differently	0.042	0.242	0.124	**0.623**	0.361	0.058
One can't change a behavior without changing the perspective about things	0.036	0.248	0.202	**0.499**	0.092	-0.177
If I knew why I have certain behaviors, I would succeed in changing them	0.081	0.174	0.052	0.126	**0.892**	0.076
If I was aware of what is influencing my behaviors, I would succeed in changing them	0.097	0.141	0.058	0.198	**0.877**	0.079
My brain is the main responsible for me having the behaviors I have	0.151	-0.091	0.181	0.102	0.034	**0.773**
The peoples' psychological problems are mainly due to their brain' functioning	0.082	-0.017	0.205	-0.070	0.001	**0.768**
People can change their psychological problems if they take medication	0.030	0.051	-0.134	0.068	0.107	**0.658**
Eigenvalue	3.424	2.832	2.105	1.905	1.826	1.804
Variance	14.88%	12.31%	9.15%	8.28%	7.94%	7.84%

Notes: Extraction Method:Exploratory Factor Analysis; Rotation Method: Promax, with Kaiser Normalization (Factorloadings > |.40| are in bold).

the items of the Biomedical approach. All factors had an *Eigenvalue* superior to 1, and all items registered loadings above .40 on their respective factor.

Figure 1 displays the Confirmatory Factor Analysis with standardized parameter estimates. Results confirm the measurement model composed by 23 items. The indices confirm a good fit of the model to the data: χ^2= 441.25, *df*= 214; χ^2/df= 2.062; *CFI*= .942; *GFI*= .935; *TLI*= .932; *RMSEA*= .044). Parameters were significant at p <.001.

As an indicator of reliability, we estimated the internal consistency of the scales using the Cronbach' α, which was greater than .70 to all scales, with exception of the Biomedical: α= .63 for Biomedical; α= .86 for Psychodynamic scale; α= .79 for Cognitive-Behavioral; α α= 0.77 for Eclectic/Integrative; and α= .75 for Systemic.

We tested the validity of the BAPPI by estimating the correlations between scales of the BAPPI and the scales of an instrument (the OPP) which was developed to evaluate the same construct. As displayed in Table 3, significant and positive correlations were found between some scales of the different instruments. As expected, some scales were found to positively correlate with their equivalent of the other scale (OPP). This was the case of the BAPPI's Psychodynamic scale which was positively correlated with the OPP's Psychodynamic scale (r= .216). The same happened with the BAPPI's and the OPP's Humanistic scales, which were significantly and positively correlated (r= .218).

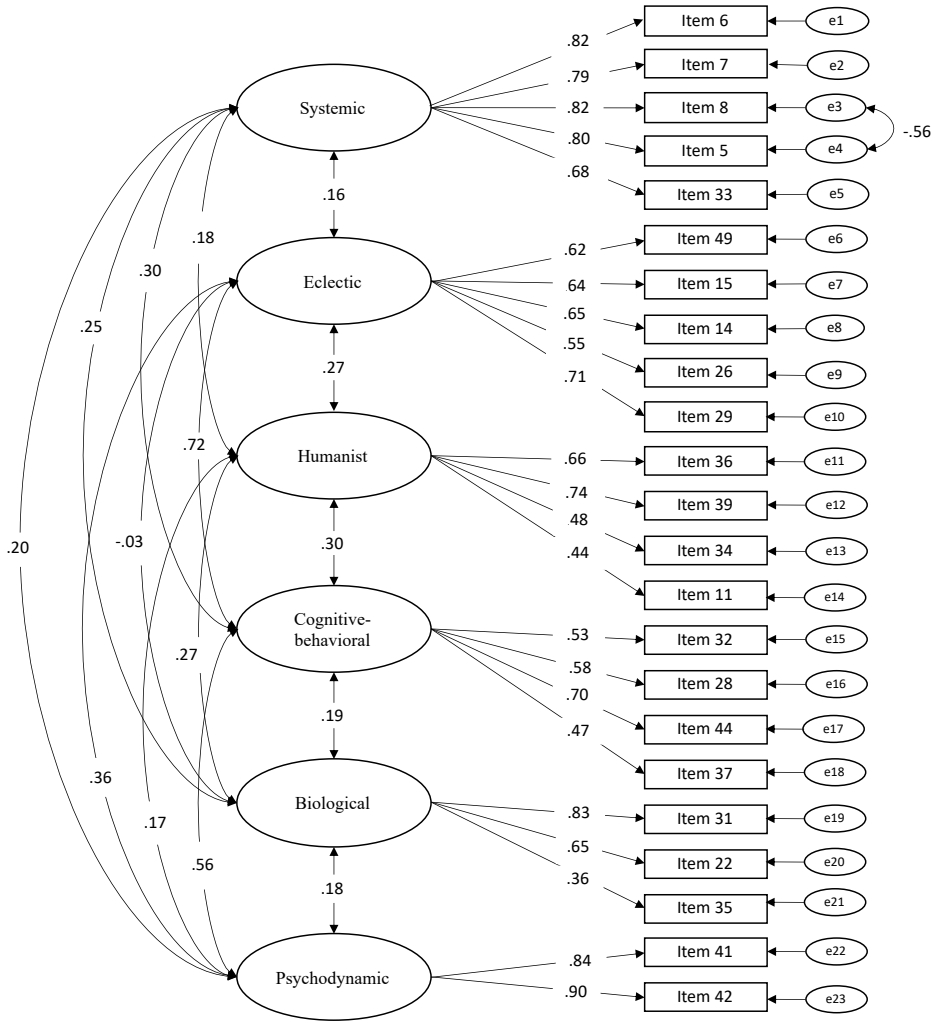

Figure 1. Confirmatory Factor Analysis for the factor structure of the BAPPI with standardized parameter estimates. Systemic; Eclectic/Integrative; Humanist; Cognitive-Behavioral; Biological; Psychodynamic.

Table 3. Correlations between the BAPPI and OPP scales.

BAPPI' s Scales	OPP Psychodynamic	OPP Humistic	OPP Behavioral	OPP Cognitive	OPP Organic	OPP SocioEconomic	OPP Naive
Systemic	-.011	.090	.000	.025	-.084	-.049	.044
Ecletic/Integrative	.120	.173*	.176*	.151*	-.075	-.049	.051
Humanist	.234**	.221**	.218**	.198**	.200**	.235**	.145*
Cognit/Behavioral	.017	.116	.113	.098	-.086	-.034	.151*
Psychodynamic	.216**	.227**	.185**	.201**	.089	.163*	.133
Biomedic	.020	.028	.007	-.039	-.068	-.217**	-.043

Notes: *= p <.05; **= p <.01

DISCUSSION

The objective of this study was to evaluate the psychometric characteristics of the BAPPI, an assessment instrument intended to capture the individuals' beliefs about their psychological problems. We analyzed different indicators of validity, including item analysis, the internal structure of the scale, reliability, and evidence of validity, which we will discuss in the following.

According to Carretero Dios and Meléndez Pérez (2005), the discrimination calculations need to be performed by sub-scale dimension. This means that the estimation of discrimination needs to be performed between the item and its correspondent narrower dimension. Consistently, all the items of the BAPPI registered correlations with their respective dimension higher than .25/.30, which is in line with the suggested (e.g. Nunnally, & Bernstein, 1994).

Exceptions to this tendency were the items of the Biomedical dimension, which required specific analysis of these items' behavior. The correlation of the items with their correspondent dimension is an indicator of the degree to which the items are measuring in the same direction, and, therefore, how the items are representative of that dimension. When this discrimination is performed taking the diverse items together, then an estimation of the reliability of the scale is obtained, such as in the case of Cronbach's α. In the case of this study, Cronbach's α was performed only after the group of items for each sub-scale had been defined, also as suggested for example by Carretero Dios and Meléndez Pérez (2007). The Cronbach's α was greater than .70 for all the scales, with exception of the Biomedical (α= .63) which, not being optimal, is still acceptable. Future studies should address this question and try some improvements on these items' discrimination indices.

All items had been previously repeatedly analyzed (as described before) in terms of the semantic and construct criteria. Then the resulting 23 items were all included in the Exploratory Factor Analysis, in which minimal restrictions were imposed. The resulting model was consistent with the semantic and construct expected model and was composed of six oblique factors. The facts that a) the Eigenvalue of each factor was greater than 1 and b) the item loadings were all superior to .40 supported the decision of keeping this 6-factor solution.

To test the stability of the proposed model and to evaluate its adequacy to another set of data, a second study was conducted where the scale was administrated to a different and larger sample. The different indices obtained by the Confirmatory Factor Analysis suggested that this was a model that fit well to the data.

As suggested by several authors, the validity of an instrument cannot be assumed without considering its associations with other constructs. In fact, and considering the dynamic nature of human functioning, a given phenomenon. As a consequence, an indicator of an assessment's validity is how the instrument relates with other (convergent or divergent) constructs (American Educational Research Association, 1999; Carretero Dios & Meléndez Pérez, 2005). In this study, we estimated the associations between the scales of the BAPPI and the scales of the OPP, which assesses the clients' opinions about their psychological problems.

Firstly, and as expected, some scales were found to positively correlate with their equivalent of the other scale (OPP): the BAPPI' Psychodynamic scale which was positively correlated with the OPP's Psychodynamic scale (r= .216); the BAPPI's and the OPP's Humanistic scales were significantly and positively correlated (r= .218).

Secondly, the BAPPI's Humanist scale was positively correlated with all the OPP's scales. This is an understandable result because the Humanistic approaches emphasize the role of necessary conditions to change to occur, which tend to be shared by the different approaches. Thirdly, the BAPPI's Systemic scale was not correlated with no scale of the OPP. This is because the OPP does not have a scale for the Systemic approach that helps to understand the inexistence of significant association of any of its scales with the BAPPI' Systemic scale. Fourthly, the BAPPI's Cognitive-Behavioral scale does not significantly correlate with the OPP's Behavioral and Cognitive scales. Although it could be expected that such relations would exist, this result suggests that the contemporary understanding of the Cognitive-Behavioral approach (as captured by the BAPPI) present semantic and construct differences about the classic approaches of the Cognitive and Behavioral approaches when taken independently one from another. Taking together, the relationships between the dimensions of the BAPPI and the OPP suggest that, although they present some commonalities, these two instruments are not equivalent.

Information coming from the analyzed indicators suggested that the BAPPI is an instrument with acceptable psychometric properties, and suitable for use in research and clinical practice. Firstly, the range of the dimensions assessed by the BAPPI goes behind the simplistic dichotomy of medical vs non-medical approaches or biological/individual VS psychodynamic/group. Secondly, BAPPI includes only frameworks that have empirical validation. Thirdly, as demonstrated by both the EFA and CFA performed in this study, the BAPPI has a stable factorial structure, which is an advantage over other assessments to which there is no evidence for their structural stability. Fourthly, more than focusing on beliefs regarding specific disorders, it captures beliefs about global psychological problems, which may be an advantage for treatment selection, but also for comparison of finding coming from different studies. Fifth, the dimensions assessed by the BAPPI are consistent with the major frameworks of current psychotherapy science, which makes the BAPPI suitable for use in studies that aim to understand individuals' beliefs about their psychological problems besides the naïve or popular conceptions of Mental Health (which it is still very prevalent in some societies) (Adewuya & Makanjuola, 2008). Sixth, its short form (23 items) facilitates its systematic use in systematic assessment protocols.

The chosen sampling method has implications for the external validity of the findings. Non-probability sampling methods make it difficult to generalize research findings from a sample to the general population because they are characteristically non-random, meaning that is uncertain whether the present study findings would replicate in other Portuguese samples. It is also noteworthy that the study only collected self-report data; a methodological choice that is frequently criticized for introducing bias to data (e.g. social desirability effects).

Future studies need to describe the BAPPI's measurement invariance in different groups, including in populations from other societies, or in clinical samples. Additionally, future studies should describe the associations of the BAPPI's dimensions with other construcs, including with interventions processes and outcomes of the systematic tailoring of the treatment to the clients' characteristics.

In sum, as suggested by this study's results, the BAPPI presents adequate psychometric properties and has the potential of contributing to the advance of research and practice of the systematic efforts of tailoring Mental Health Interventions to the individuals' non-diagnostic characteristics, including to the clients' systems of beliefs

about their psychosocial functioning, which is a current trend on psychotherapy research and practice (Beutler, 2010; Blatt, Zuroff, Hawley & Auerbach, 2010; APA, 2006; Chakraborty, Avasthi, Kumar & Grover, 2009; Coyne, 2014; Nguyen *et alia*, 2007; Norcross & Wampold, 2011)

Future studies need to describe the BAPPI use in clinical populations, including in studies assessing the impact on psychotherapeutic processes and outcomes of the systematic tailoring of the treatment to the clients' characteristics.

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