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BELIEFS ABOUT THE PATIENT'S ROLE IN THE PSYCHOTHERAPEUTIC RELATIONSHIP: A LATENT TRAIT PERSPECTIVE

STEFANIA MANNARINI
MARILISA BOFFO
LAURA BALOTTIN
UNIVERSITY OF PADOVA

The present research aimed to define a latent measurement dimension underlying personal beliefs about the psychotherapeutic relationship. In Study 1, 927 university students completed a newly devised 40-item questionnaire. A latent trait modeling approach was used, by applying the Many-Facet Rasch Measurement model (MFRM). In Study 2, 237 participants, presenting different levels of mental health expertise, completed the defined instrument and the Mental Disorders Causal Beliefs (MDCB) scale. A second MFRM analysis was performed along with a bias/interaction analysis. The main results evidenced a 27-item measure denominated Mental Disorders Therapy Relationship (MDTR); several MDTR item contents differed in relation to the professional expertise level and the MDCB aetiological beliefs, emphasizing either the active, balanced, or passive patient's role.

Key words: Psychotherapy; Patient-therapist relationship; Control beliefs; Latent dimension; Rasch modeling.

Correspondence concerning this article should be addressed to Stefania Mannarini, Dipartimento FISPPA – Sezione di Psicologia Applicata, Università di Padova, Via Venezia 8, 35131 PADOVA (PD), Italy. Email: stefania.mannarini@unipd.it

INTRODUCTION

The patient-therapist relationship in the treatment of mental disorders is of capital importance in view of successful therapeutic outcomes. The discussion about the relevance of this issue has been carried out in the past and is still of current interest. Tryon and Winograd (2011) defined the patient-therapist relationship in terms of goal consensus and collaborative involvement. Such concepts apply to all types of psychotherapies: goal consensus is the patient-therapist agreement on therapy goals, treatment expectations, and processes to achieve the goals; whereas collaborative involvement is the mutual involvement and cooperation of patient and therapist in the helping relationship to fulfil the treatment goals (Orlinsky, Grawe, & Parks, 1994). In other words, goal consensus and collaboration are two elements involved in the implementation of the therapeutic contract.

Considering goal consensus, when therapists and patients agree about a treatment plan, patients are likely to be more satisfied with the first session. This early therapeutic engagement is important for both continuing the therapeutic treatment after the first session and the therapeutic outcomes during the treatment process. Mussell et al. (2000) found that bulimic patients' pre-

treatment ratings of their commitment to the therapeutic goals were positively related to remission of symptoms at the treatment conclusion.

Besides the compliance on the goals to be achieved, the treatment goals may be further formulated by taking into account the patient's perceived origin of his/her problem. Several researchers have found that the patient-therapist agreement about the causal attributions of the patient's problem, was positively related to the patient's improvement at the end of the psychotherapy (e.g., Barker, Pistrang, Shapiro, & Shaw, 1990; Pistrang, 1990; Pistrang & Barker, 1992; Tryon & Winograd, 2011).

The second key-concept qualifying the patient-therapist relationship, that is, the collaborative involvement, has been explored mainly by assessing three main aspects: patient cooperation, role commitment, and homework compliance. In their meta-analysis, Tryon and Winograd (2011) combined findings from 24 studies and found that a collaborative involvement and positive outcomes were substantially and positively related in almost 89% of the study results. Further, Kuutman and Hilsenroth (2011) examined the relation among the amount of in-session focus on the patient-therapist relationship during early treatment, patient pre-treatment interpersonal style, personality pathology, and patient ratings of the process and outcome of the session.

Norcross and Lambert (2011) and Norcross and Wampold (2011) argued that the elements contributing to effective therapy relationships are mainly two: what works in general and what works in particular within the therapeutic treatment. Of interest in the present research is the latter, which deals with the importance of identifying adequate methods of adapting the treatment intervention to the individual patient. The above-mentioned authors examined the central role played by the therapy relationship and its interdependence with the treatment methods. In their studies they dedicated a large space to the patient's role in his/her relationship with the therapist and the treatment intervention. They also summarized the best available research and clinical practices on the numerous elements composing the psychotherapeutic relationship.

Flückiger et al. (2012) explored the centrality of patient-therapist alliance in the psychotherapy process: they conducted a longitudinal randomized controlled study which evidenced the relevance of patients' proactive role and feedback to the therapist in the strengthening of the therapeutic alliance.

Further, a number of measurement instruments concerning patient's expectancies about the therapeutic goals, and more in general about the individual commitment during the therapeutic treatment, was also developed (e.g., Aubuchon-Endsley & Callahan, 2009; Bleyen, Vertommen, Vander Steene, & Van Audenhove, 2001; Delsignore & Schnyder, 2007; Dew & Blickman, 2005).

According to this literature framework, the main objective of the present study was to define a psychometrically valid dimension in the Italian context, wherein different aspects representative of the patient-therapist relationship were combined (e.g., McGuire-Snieckus, McCabe, Catty, Hansson, & Priebe, 2007; Orlinsky, Ronnestad, & Willutzki, 2004). A recent longitudinal study with Italian clinical patients has demonstrated the existence of a single dimension characterized by multiple aspects of the patient's active behavior versus mental health care. The results of this study showed that the patient's autonomy in asking for help, his/her freedom in accepting or refusing the offered medical care, his/her knowledge of the reasons for asking help, his/her capacity to communicate with others and in relation to the medical care, may indeed affect the therapeutic outcomes (Mannarini, 2009).

The definition of the hypothesized measurement dimension, representative of the patient-therapist relationship, was pursued on the basis of ratings of students and experts in clinical psychology and psychiatry, adopting a latent trait modeling perspective. Such a dimension is expected to represent a valuable tool that may help in clarifying and extending relevant issues within the therapeutic relationship research. Further, it should represent a measurement instrument useful for the assessment of behaviors and attitudes characteristic of such a relationship, both in the clinical practice and for research purposes. It should also represent a measure which can be both easily compared with other similar and related measures within a convergent validity and cross-cultural perspective, and administered to different groups of targeted participants.

On the basis of the previous considerations and literature, the specific objectives of the present research were the following:

a) the definition of a set of contents characteristic of the patient's role, taking into accounts his/her awareness, involvement, and collaboration inside the therapeutic relationship context. As previously explained, awareness, involvement, and active collaboration were considered as different aspects of a single factor describing the patient/therapist relationship;

b) the definition of the psychometrically valid dimension, characteristic of these contents within a latent trait modeling framework;

c) the study of participants' beliefs about the patient-therapist relationship dimension, taking into consideration their gender;

d) the study of participants' beliefs about the patient-therapist relationship dimension, taking into consideration their attendance of different university courses;

e) the study of the interaction between the dimension contents and the participants' different levels of expertise in mental health, that is, the knowledge and experience in clinical psychology and psychotherapy acquired at different levels of professional training, ranging from the academic level of university students to the consolidated expertise of mental health professionals;

f) the analysis of the relations between participants' beliefs about patient-therapist involvement in the therapeutic relationship and their beliefs about mental disorder aetiology;

g) the analysis of the three-way interaction of participants' beliefs about the patient-therapist involvement in the therapeutic relationship, their levels of expertise in mental health treatments, and their beliefs concerning mental disorder aetiology.

The objectives were pursued within two studies characterized by different groups of participants, measurement instruments, and methodological tools: Study 1 dealt with objectives a), b), c), and d); and Study 2 pursued objectives e), f), and g). The two studies shared a two-fold research perspective: a quantitative one, namely, the definition of the psychometrically valid dimension, and a qualitative one, namely, the analysis of the patients' involvement and collaboration in the therapeutic relationship, as perceived by participants with different levels of expertise and familiarity with mental health care, in particular psychology students and mental health professionals.

The adoption of a latent trait modeling approach led to the application of the Many-Facet Rasch Measurement model (MFRM; Linacre, 1989). This method was considered particularly suitable for the definition of a mono-dimension latent to a set of aspects qualifying the patient-therapist relationship in terms of activity/passivity balance.

Further, recent applications of this modeling framework in medical and health, clinical psychology, and clinical assessment studies (e.g., Chapman, McCart, Letourneau, & Sheidow,

2013; Mannarini & Boffo, 2013; Smith & Beran, 2012) supported the use of this methodological approach in the present study.

The mathematical properties of the MFRM model indeed provide the possibility of modeling complex patterns of relations among constructs within the mono-dimensionality requirement, thus allowing the definition of a multi-faceted dimension. For this reason the application of the MFRM permitted to easily and directly investigate the interactions among the above mentioned dimension contents and participants' features, such as the level of expertise in clinical psychology and psychotherapy.

Study 1: Definition of the Therapeutic Relationship Dimension

Methods

Procedure and Participants

As a starting point, to define a dimension of contents representative of the patient-therapist relationship, 40 items were formulated according to the literature. The attribution theory concepts (e.g., Weiner, 1985, 1986, 1992), the social learning theory conceived by Rotter (1966), several studies on the dimensionality of the construct of mental health locus of control (e.g., Hill & Bale, 1980; Wallstone, 1992, 2005; Wallstone & Smith, 1994), and recent developments in the research on the psychotherapy process and outcome factors (e.g., Delsignore & Schnyder, 2007; Norcross & Wampold, 2011; Tryon & Winograd, 2011), were taken into account.

The 40 items were devised to explore patient and therapist's treatment goal(s) agreement, collaboration, and mutual involvement in the therapeutic relationship. In particular, the item contents embraced the following issues, which are widely considered fundamental in the patient/therapist relationship literature (e.g., Norcross & Wampold, 2011): a) the *patient*'s collaboration and awareness of his/her own improvement(s) during the therapeutic treatment, his/her ability to affect the therapeutic outcomes by means of his/her motivation and proposals, the importance of his/her proposals when planning the treatment, and his/her autonomy in attending to daily needs; b) the involvement of the *therapist*, who is supposed to be able to control the mutual involvement of him/herself and the patient in the therapeutic relationship, who should be able to foster the patient's confidence in his/her improvements and in the treatment results, and who is expected to obtain positive results; c) the *treatment* to undertake in order to help the patient make decisions and take responsibilities, change his/her own behaviors, establish empathic relationships, and improve problem-solving abilities.

The wording of half of the items described the patient as collaborative and self-aware (proactive) about his/her own mental health condition, whereas the other half described the patient as non-collaborative and more of a listener (passive), dependent on the therapist's directions and treatment techniques. For the analyses, the items describing the patient's active role were score-reversed (SR), so that a high total score indicated the endorsement of the patients' passive role. Each item was rated on a 4-point Likert scale from 1 (*totally disagree*) to 4 (*totally agree*).

The 40 items were then administered to 927 students from the University of Padua (Italy), attending six university courses: Psychology (n = 232), Medicine (n = 160), Mathematics (n = 128), Education (n = 93), Economics (n = 181), and Engineering (n = 133). They constituted

423 and 504 undergraduate and graduate students respectively, mean age 22.07 (*SD* = 2.67), with 454 males and 473 females. Participants completed the informed consent procedure for data privacy policy and anonymous data treatment before filling in the questionnaire.

Considering their academic background and the familiarity with mental health care acquired throughout their university studies, it was hypothesized that psychology students would perceive the patient as an actively involved and collaborative protagonist in the therapeutic relationship, to a greater extent than students from other courses.

The Many-Facet Rasch Measurement Model

The Many-Facet Rasch Measurement model (MFRM; Linacre, 1989) derives from the Simple Logistic Model (SLM; Rasch, 1960/1980), which is the traditional Rasch model and takes the mathematical form expressed in Equation (1):

$$P(X_{vi} = x) = \frac{e(\beta_v - \delta_i)}{1 + e(\beta_v - \delta_i)} \tag{1}$$

The SLM expresses the probability of a given response $P(X_{vi} = x)$ as a function of the person's ability β_v and the item's difficulty δ_i, as formalized in the *logit* scale ($\beta_v - \delta_i$) (Rasch, 1960/1980). These two elements can be considered as two facets that interact with each other to produce the response to an item, and can be modeled to operate independently, so that their parameter measures can be combined additively on a latent variable. The Rasch model parameters are additive, fully satisfying one of the essential requisites of interval measures, and are based on the transformation of scores into the logit scale, that is, the logarithmic transformation of the probability of producing a particular response given certain conditions. However, in the measurement contexts, more complex situations arise in which other aspects interfere with the person and item's attributes, such as specific social, educational, or clinical factors. The MFRM (Linacre, 1989) was devised in keeping with the mono-dimensionality requirements of Rasch theory, and takes into account these multi-faceted situations. The MFRM shares the main characteristics of Rasch models: stochastic independence, specific objectivity, linearity, and measurement unit (for a review, see Bond & Fox, 2007).

The MFRM formalization allows the introduction of new parameters, or *facets*, into the model, which account for the likelihood of obtaining a response to a given item, given certain conditions. Consequently, in Study 1 the following elements were entered into Equation (1): a person parameter, which described the person position on the continuum of the latent dimension, in terms of beliefs about the patient-therapist relationship's activity-passivity bipolarity (facet 1); the item parameter, which described the item position on the same latent dimension in terms of representativeness of patient's activity/passivity within the therapeutic relationship (facet 2); the university course parameter, describing the point of view of students belonging to a particular university course (facet 3), and the gender parameter (facet 4). The model is then represented by Equation (2):

$$P(X_{vibgk} = x / \beta_v, \delta_i, \varpi_b, \lambda_g, \varphi_k) = \beta_v - \delta_i - \varpi_b - \lambda_g - \varphi_k \tag{2}$$

Equation (2) specifies that the probability of a person *v* to give a response *k* rather than *k*-1 to an item *i* depends on the additive effects of the person *v*'s beliefs about patient's role within the therapeutic relationship (β_v), the item *i* pertaining to the therapeutic relationship dimension

(δ_i), the attended academic course b (ω_b), the gender l (λ_l), and the ease of giving a response k rather than a k-1 on the rating scale (φ_k).

An important feature of the MFRM is that all facet parameters are estimated simultaneously and independently from the distribution of participants and items by means of the joint maximum likelihood estimation procedure (Linacre, 2010), and are located on the same latent trait, allowing comparison between them. For each parameter estimate, except for the person parameter estimate β_v, positive parameter estimates indicated the tendency of participants to endorse the lower grades of the rating scale, that is, to refuse patient's passive role and to expect him/her to be actively involved in the therapeutic relationship. Negative estimates, on the other hand, indicated the opposite, that is, the endorsement of the passive and listener role of the patient which poses greater attention on the therapist's activity. For the person estimate β_v, positive estimates indicated a tendency to endorse a patient's passive and less collaborating role in the patient-therapist relationship.

For the goodness-of-fit evaluation of each parameter estimate, the MFRM presents two fit statistics which show how much the data for each parameter estimate adhere to the model requirements: the *mean square Outfit* and *mean square Infit* statistics. These statistics are based on the differences between observed and expected responses, calculated for each respondent and each index. A range of .70-1.30 indicates a satisfactory fit of the observed data to the model (Bond & Fox, 2007).

A chi-square statistic is also calculated — the fixed χ^2 — for each facet, in order to verify whether its elements (e.g., the 40 items of facet 2 in this study) are equal or significantly different, that is, whether they can discriminate different aspects of the facet or not.

RESULTS

Parameter Estimates of MFRM Facets

Participants and Items

Participants' parameter estimates (β_v) showed a mean of –.31 (*SE* = .28), range = –2.49-1.37 (range *SE* = .34-.30). The mean Infit and Outfit statistics were satisfactory, being respectively 1.01 and 1.00.

Item parameter estimates (δ_i) showed a mean value of .00 (mean *SE* = .06), satisfactory Infit and Outfit statistics, and a satisfactory discriminating power (*fixed* χ^2 = 2492.6, *df* = 26, $p <$ .001). In Table 1 the item parameter estimates (δ_i), ordered from the highest to the lowest, *SE*s, Infit and Outfit statistics, and item contents, are presented for the 27 items that satisfied the model requirements. As pointed out in the Methods section, positive item parameter estimates indicate participants' disposition to endorse the lower grades of the rating scale, which means that they are more likely to disagree with the passive role of the patient and support his/her proactive involvement in the treatment relationship.

Table 1 shows the 27, out of the original 40, items that satisfied the model requirements. The item contents were representative of every main construct underlying the initial pool of items; in particular, the items evaluated by the participants as the most representative of patient's active role and involvement in the therapeutic relationship were the following: "Patients are able to cope with their own negative experiences, such as separations and losses, without seeking professional

TABLE 1
The Mental Disorder Therapeutic Relationship (MDTR) dimension: Items, item contents, parameter estimates (δ_i), standard errors (*SE*), and fit statistics

Item	Item contents	δ_i	*SE*	Infit	Outfit
12[a]	Patients are able to cope with their own negative experiences, such as separations and losses, without seeking professional help.	1.69	.07	1.00	.98
18	The therapeutic care helps the patient to overcome his/her psychological distress.	.99	.06	1.15	1.15
10[a]	The patient's awareness influences positively the treatment result.	.56	.06	.90	.90
1[a]	The patient is able to deal with his/her own problems in the therapeutic relationship.	.51	.06	1.10	1.10
3	The therapeutic treatment is superior to any other kind of help.	.49	.06	1.18	1.18
16[a]	The patient's comments during the therapeutic treatment are important.	.48	.06	1.10	1.10
6[a]	The patient's opinions affect the treatment results.	.43	.06	.97	.97
25[a]	The patient's awareness of therapeutic goals helps to solve his/her problems.	.41	.06	.83	.83
19[a]	The patient's collaboration affects the planning of the treatment.	.31	.06	.79	.79
5	The therapeutic treatment helps the patient to take decisions.	.26	.06	1.11	1.12
11	The therapeutic care helps the patient to take responsibilities.	.24	.06	1.00	1.00
14[a]	The patient can deal with his/her own responsibilities.	.16	.06	.94	.95
21	In the therapeutic relationship the therapist's advice is helpful.	.08	.06	.91	.91
20[a]	The patient is able to propose solutions during the treatment.	.03	.06	.90	.91
22	The therapist is always right.	–.04	.06	1.11	1.11
9	The therapist helps the patient to make choices.	–.08	.06	.86	.86
27	The therapist's requests must be followed carefully by the patient.	–.20	.06	.89	.90
8[a]	The patient's proposals always determine a positive treatment result.	–.23	.06	.94	.94
15	Only the therapist can help to establish empathic relationships in group therapy.	–.41	.06	1.12	1.13
4[a]	The patient is aware of his/her own improvements.	–.47	.06	1.01	1.01
2	Only the therapist's interventions are always useful.	–.53	.06	1.18	1.18
17[a]	The patient should decide the aims of the treatment.	–.59	.06	1.21	1.21
13	Only the therapist can induce a positive relationship with the patient.	–.70	.06	.89	.88
26[a]	A good therapist should expect the patients to decide autonomously what to do.	–.70	.06	.99	.99
24[a]	The patient does not need help also in his/her daily needs outside the treatment.	–.72	.06	1.05	1.05
7	The therapist should continue to take care of his/her patient also when the treatment is concluded.	–.91	.06	.98	.97
23	Positive results can be reached exclusively through the therapist's care.	–1.06	.06	.90	.90

Note. The English translation of the Italian items was obtained with the collaboration of an English native speaker.
[a] Reversed items.

help" (SR; δ_{12} = 1.69), "The therapeutic care helps the patient to overcome his/her psychological distress" (δ_{18} = .99), "The patient's awareness influences positively the treatment result" (SR; δ_{10} = .56), and "The patient is able to deal with his/her own problems in the therapeutic relationship" (SR; δ_1 = .51).

For the items evaluated as the least representative of an active patient's collaboration and involvement in the treatment process, the following item contents were evidenced: "Positive results can be reached exclusively through the therapist's care" (δ_{23} = –1.06), "The therapist should continue to take care of his/her patient also when the treatment is concluded" (δ_7 = –.91), "The patient does not need help also in his/her daily needs outside the treatment" (SR; δ_{24} = –.72), "A good therapist should expect the patients to decide autonomously what to do" (SR; δ_{26} = –.70).

In the middle of the latent dimension, that is, around the mean of the latent measure scale (equal to .00), the following items were found: "In the therapeutic relationship the therapist's advice is helpful" (δ_{21} = .08), "The patient is able to propose solutions during the treatment" (SR; δ_{20} = .03), "The therapist is always right" (δ_{22} = –.04), and "The therapist helps the patient to make choices" (δ_9 = –.08).

Fourteen out of the 27 items described the active and collaborative role of the patient within the therapeutic process and goals definition, whereas the remaining 13 were oriented toward his/her passive role, that is, therapist and therapeutic care should take all the responsibility and decisions about the treatment methods and patient activity.

To summarize the item distribution on the dimension, 11 items were located at the bottom of the dimension with parameter estimates ranging from –1.06 to –.20, four items fell around the mean (0), with parameter estimates ranging from –.08 to .08, and 12 items were located on the dimension upper side in the range of .16-1.69. The results demonstrated that the items had a balanced distribution over the dimension, covering the full continuum of patient and therapist's degree of activity/passivity in their role, mutual involvement and participation in the therapeutic relationship. The 27 items were then considered as a new psychometrically valid dimension, which was denominated Mental Disorder Therapy Relationship (MDTR). To evaluate the internal consistency of the MDTR dimension a Cronbach's alpha was computed, resulting equal to .72.

University Course

The parameter estimates of the six university courses (ω_b) showed a mean value equal to .00 (mean *SE* = .03) and a sufficient power to discriminate students' opinions (*fixed* χ^2 = 11, *df* = 5, *p* = .04).

Psychology students showed the highest parameter estimate (ω = .06), meaning that their opinions about the patient's role in the therapeutic relationship, although located near the latent continuum mean, were mostly oriented toward the patient's active and collaborative behavior. The psychology university course was followed by the other courses, in the following order: Medicine (ω = .02), Mathematics (ω = .01), Economy (ω = –.01), Education (ω = –.03), and Engineering (ω = –.05). All university course parameter estimates showed significant fit statistics in the range .70-1.30.

Gender

Male and female parameter estimates did not present any difference, that is, the *fixed* χ^2 statistic was not statistically significant.

REMARKS

The application of the MFRM analysis allowed to obtain a psychometrically valid 27-item dimension, which was denominated Mental Disorders Therapeutic Relationship (MDTR), with 14 items oriented toward the patient's activity and substantially contributing to the therapeutic process, and 13 items oriented toward his/her passive and listener role, highlighting the centrality of the therapist and therapeutic care. The item contents were representative of the main constructs underlying the initial 40 items, which were: a) the relevance of mental health treatments in helping and supporting the patient; b) the importance of the therapist's role in the therapeutic relationship; c) the patient's ability to understand when his/her own improvements take place during the therapeutic treatment and his/her capacity to affect the therapeutic results.

The application of Equation (2) further evidenced the effect of attending different university courses on the MDTR dimension. The students who attended the Psychology course showed a belief that, in the patient-therapist relationship, the patient should endorse an active and collaborative role. Their position was followed by the other university courses in the following order: Medicine, Mathematics, Economy, Education, and Engineering. Males and females did not show any statistically significant difference on the dimension.

As expected, the MDTR evidenced to be a multi-faceted measurement dimension represented by the contents of 27 items and the personal beliefs of students pertaining to six different university courses.

At the conclusion of Study 1, the further validation of the MDTR dimension was warranted. In particular the cross-validation with different groups of participants and investigation of the relations between the MDTR dimension and external variables were recommended. These remarks were then operationalized in Study 2.

STUDY 2: MDTR DIMENSION CROSS-VALIDATION

METHODS

Procedure and Participants

To further validate the MDTR dimension, the 27-item dimension was applied to a second group of participants, within a cross-validation perspective. The items were rated according to the original rating scale from 1 (*totally disagree*) to 4 (*totally agree*). Like in Study 1, the 14 items worded toward the patient's active role were score-reversed for the analyses.

To assess participants' beliefs about mental disorder aetiology, the Mental Disorders Causal Beliefs (MDCB; Mannarini & Boffo, 2013) questionnaire was administered. Personal beliefs about the causal explanations of mental disorders were hypothesized to affect the patient's sense of responsibility and degree of participation when facing the therapeutic setting (e.g., Atkinson, Worthington, Dana, & Good, 1991; Hill & Bale, 1980; Pistrang & Barker, 1992; Tryon & Winograd, 2011). Within an external validation perspective, the results of the interaction analysis between the MDCB and MDTR dimensions were also considered helpful in better interpreting the MDTR contents.

The MDCB is a self-report measure devised by means of latent trait analyses consisting of 30 items: 14 items describe bio-genetic causal beliefs of a mental disorder and the remaining 16 are representative of psycho-social explanations of mental illness. The items are rated on a Likert scale from 1 (*totally disagree*) to 4 (*totally agree*). Psycho-social items were score-reversed for the analyses, with a scale total score indicative of mental disorder casual beliefs emphasizing the bio-genetic, medical model of the mental illness.

Considering the methodological problems of transforming interval-level data into ordinal-level data (Blanton & Jaccard, 2006), as the MFRM requires, the MDCB score distribution was discretized according to the 33° and 66° percentile values, computed on the full data matrix. Three levels of mental illness causal beliefs were then obtained: *low* (scores < 33° percentile — endorsement of psycho-social causal explanations of mental illness), *medium* (33° < score < 66° — integration of both bio-genetic and psycho-social mental illness causal beliefs), and *high* (score > 66° percentile — endorsement of bio-genetic causal beliefs).

Participants (N = 231) were distinguished by four different levels of knowledge, familiarity, and expertise in clinical psychology and therapeutic treatment interventions, namely, from the level of knowledge acquired by students attending the Psychology university course to the professional level. The four groups were the following: 1) students attending Undergraduate Psychology Courses (UPC; n = 60, M_{age} = 22.167, SD = 5.462); 2) students attending Graduate Psychology Courses (GPC; n = 60, M_{age} = 23.88, SD = 3.737); 3) beginner mental health professionals attending a Psychotherapy Specialization (Psy.D) (PS; n = 60, M_{age} = 29.93, SD = 4.025); and 4) professional Therapists, composed by psychiatrists and psychologists specialized in psychotherapy (TH; n = 51, M_{age} = 45.31, SD = 9.488). Participants completed the informed consent procedure for data privacy policy and anonymous data treatment before filling in the questionnaire.

It was hypothesized that different levels of experience in clinical psychology and/or psychiatry and psychotherapeutic treatment methods, should affect participants' beliefs about the patients' role in the therapeutic relationship, that is, people with less familiarity with the experience of the patient-therapist relationship might perceive the patient as rather dependent on the therapist's directions and less collaborative and proactive during the treatment process.

The Many-Facet Rasch Measurement Model

Similarly to Study 1, a latent trait approach was adopted through the application of the MFRM model (Linacre, 1989) to analyze the data matrix of participants × 27 items. The facets entered in the MFRM model of Study 2 were the following: the person parameter, which described the person position on the MDTR latent dimension (facet 1); the item parameter, which described the item position on the MDTR latent dimension (facet 2); a parameter measure for the level of familiarity and expertise in clinical psychology and therapy (facet 3); and a parameter measure for the mental disorder causal beliefs levels (facet 4). The MFRM model in Study 2 was then represented by Equation (3):

$$P(X_{vicmk} = x / \beta_v, \delta_i, \eta_c, \gamma_m, \varphi_k) = \beta_v - \delta_i - \eta_c - \gamma_m - \varphi_k \quad (3)$$

Equation (3) specifies that the probability of a person v of giving a response k rather than k-1 to an item i, depends on the additive effects of the person v's beliefs about patients' role within the therapeutic relationship (β_v), the item i pertaining to the MDTR dimension (δ_i), the

level c of expertise in clinical psychology (η_c), the level m of mental disorder causal beliefs (γ_m), and the ease of giving a response k rather than k-1 on the rating scale (φ_k).

Similarly to Study 1, for each parameter, except for person parameter estimate $ß_v$, a positive value indicated the endorsement of a patient's active role within the patient-therapist relationship, whereas negative estimates indicated the opposite. For the person estimate $ß_v$, positive estimates indicated a tendency to endorse a patient's passive and less collaborative role in the patient-therapist relationship.

To evaluate facets and parameter estimates' goodness-of-fit, the same statistics presented in Study 1 were computed.

In Study 2 an additional feature of the MFRM model, namely the bias/interaction analysis, was used. After estimating the parameter measures, the MFRM gives the possibility to carry out the bias/interaction analysis. A bias can be due to any kind of interaction, such as differential item functioning, differential person functioning, or differential functioning of any other facet, and is estimated from the residuals left over after estimating the measures in the main analysis (Linacre, 2010). The detection of biases is particularly important as it allows to verify the existence of potential differences between specific levels of the facets which might influence the results. For example, if a bias/interaction associated to an item i and the level of expertise in clinical psychology and psychotherapy were detected, it would mean that a residual remains after estimating the item measure, from which two new measures, one for experience level 1 and one for level 2 (e.g., UPC and GPC), can be estimated and compared by means of t-test statistic. If t statistic is statistically significant ($p \leq .05$), then the level of experience in clinical psychology affects the item or, similarly, the item has a differential functioning in relation to the degree of clinical psychology expertise.

According to the main objectives of this study, several bias/interaction analyses were performed to investigate the two-way and three-way interactions among levels of expertise in clinical psychology and therapeutic treatment interventions, levels of mental disorder causal beliefs (MDCB levels), and the MDTR item contents.

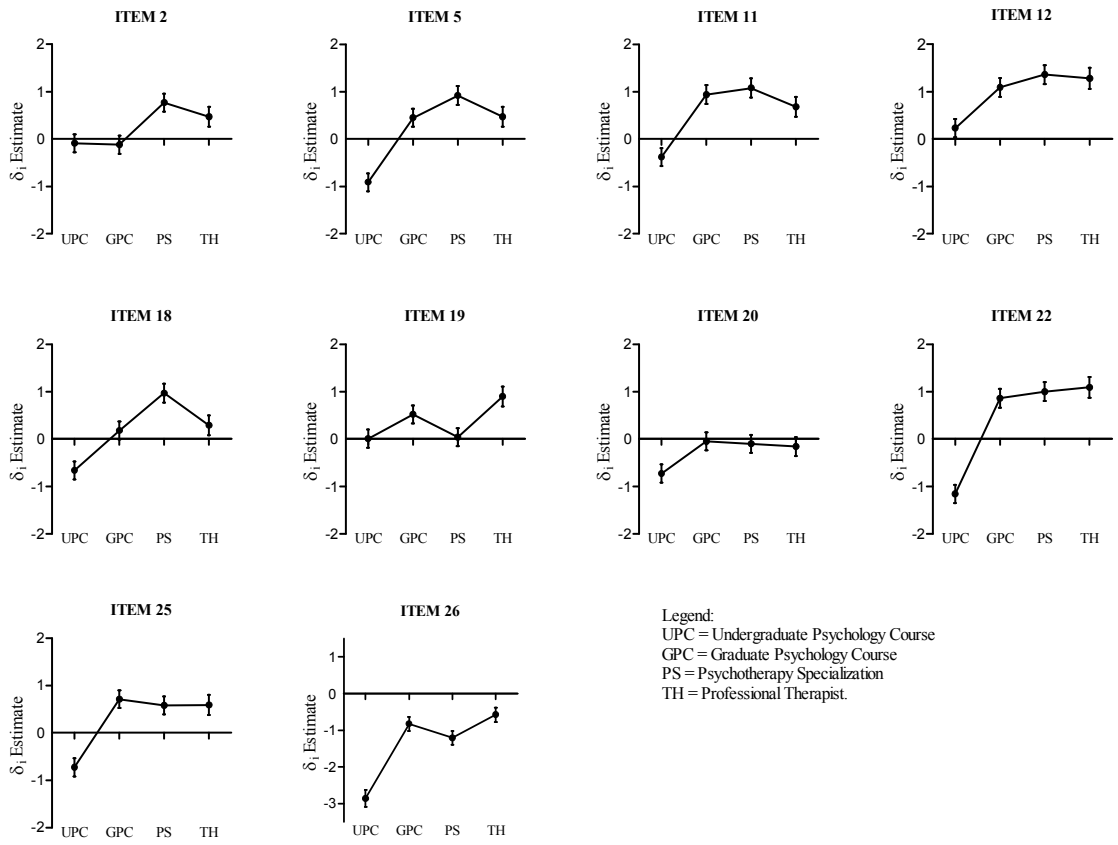
RESULTS

The application of the MFRM to the new data set confirmed the MDTR dimension validity and the 27 items showed satisfactory fit statistics in the range .70-1.30.

The statistically significant results of the bias/interaction analyses for the MDTR item contents and the four levels of familiarity and expertise in clinical psychology and psychotherapy interventions (UPC, GPC, PS, and TH) are presented graphically in Figure 1.

Ten out of the 27 items evidenced a statistically significant differential functioning in levels of clinical psychology expertise, which were then contrasted in pairs (t-tests) for each item. In other words, the ten items were mostly affected by the participants' experience concerning the patient/therapist relationship, also described by the items themselves. This fact might be mainly due to the items' wording rather than their contents, given that they are quite representative of the other items. The item parameter estimates δ_i for each expertise level were plotted in Figure 1 to evidence the trend in the item estimate change. Figure 1 shows a general linear increase in the item estimates for the four levels of expertise in clinical psychology and psychotherapy. That means, the belief in

an active and collaborative role of the patient in the patient-therapist relationship gradually grew from the lower level of experience (UPC students) to the professional level (TH therapist), through the intermediate categories (GPC students and PS clinical psychologists). The increasing trend was observed in particular for items 2 ("Only the therapist's interventions are always useful"), 19 (SR; "The patient's collaboration affects the planning of the treatment"), and 26 (SR; "A good therapist should expect the patients to decide autonomously what to do"), which evidenced the growth, along the formative and professional training of a mental health care provider, of the relevance of the belief in the patient's ability to be involved in the therapeutic improvement and responsible for the therapeutic achievement and action, when supported by the therapeutic care.



Note. Only items evidencing statistically significant results are reported in the graphs.

FIGURE 1
MDTR items' differential functioning in relation to the levels of expertise and familiarity in clinical psychology and psychotherapy: Change in item parameter estimates across the four education and professional levels.

For items 5 ("The therapeutic treatment helps the patient to take decisions"), 11 ("The therapeutic care helps the patient to take responsibilities"), 12 (SR; "Patients are able to cope with their own negative experiences, such as separations and losses, without seeking professional

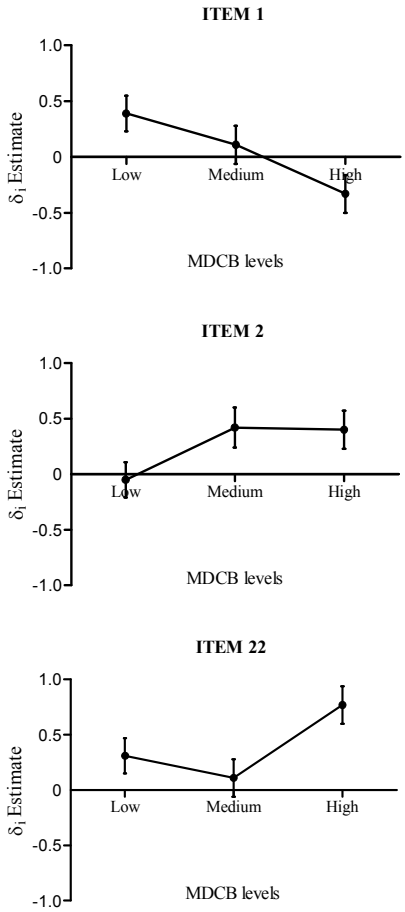
help"), 20 (SR; "The patient is able to propose solutions during the treatment"), 22 ("The therapist is always right"), and 25 (SR; "The patient's awareness of the therapeutic goals helps to solve his/her problems"), the main difference was observed between the basic level of familiarity and experience in clinical psychology (UPC), to the higher levels, where the GPC, PS, and TH parameter estimates showed to be relatively stable. Item 18 ("The therapeutic care helps the patient to overcome his/her psychological distress") presented a misleading trend along the clinical professional education.

Considering the second bias/interaction analysis between the MDTR dimension and the MDCB levels (*low*, beliefs are oriented toward psycho-social causes; *medium*, beliefs are represented by an integrated view of psycho-social and bio-genetic causes; *high*, beliefs are oriented toward bio-genetic causes), the results generally showed that the more a psycho-social explanation of a mental disease is endorsed (low MDCB), the more the patient is expected to take a relevant and proactive part in the treatment process, evidencing a pairing between the causal beliefs' orientation and the patient's degree of involvement in the psychotherapeutic process. In particular, two items evidenced a statistically significant differential functioning in relation to the three MDCB levels, which are: item 2 ("Only the therapist's interventions are always useful") and item 6 (SR; "The patient's opinions affect the treatment results").

The last bias/interaction analysis considered the three-way interaction among the MDTR item contents, the three MDCB levels, and the participants' levels of familiarity and expertise in clinical psychology and therapeutic treatment interventions (see Figure 2).

In Figure 2 two patterns of interaction between the mental illness causal beliefs categories (MDCB levels) and the level of expertise were observed in nine out of the 27 items. Items 3 ("The therapeutic treatment is superior to any other kind of help"), 14 (SR; "The patient can deal with his/her own responsibilities"), 17 (SR; "The patient should decide the aims of the treatment"), and 24 (SR; "The patient does not need help also in his/her daily needs outside the treatment"), evidenced the matched relationship between the causal explanation domain held by participants and the levels of expertise in clinical psychology along the mental health professional stages. In particular, this decreasing trend was observed between the early academic education of undergraduate students (UPC) and the later stages of psychology educational and professional levels. The items describing a general active and responsible patient's role in the treatment relationship were indeed easily and strongly endorsed by UPC participants holding either a psychosocial (low MDCB) or integrated (medium MDCB) causality of a mental disorder, followed by the bio-genetic explanation. This result may evidence the young psychology students' overestimation of patients' protagonist role in the psychotherapy, albeit this belief appeared to get steadily balanced in the later professional stages. Indeed, at the increase of educational and clinical expertise, participants' MDTR beliefs shifted toward the patient's passive and less central role, suggesting a kind of acknowledgement of the importance of the therapist and the treatment methods within the therapeutic relationship, and an adjustment of the two actors' actual contribution to the psychotherapy process and outcome.

An opposite interaction was observed for items 5 ("The therapeutic treatment helps the patient to take decisions"), 11 ("The therapeutic care helps the patient to take responsibilities"), 22 ("The therapist is always right"), 25 (SR; "The patient's awareness of therapeutic goals helps to solve his/her problems"), and 26 (SR; "A good therapist should expect the patients to decide



Note. Only items evidencing statistically significant results are reported in the graphs.

FIGURE 2
MDTR items' differential functioning in relation to the levels of expertise and familiarity in clinical psychology and psychotherapy, and the MDCB levels of beliefs about mental illness aetiology domain (three-way bias/interaction): Change in item parameter estimates across the four education and professional levels by the psycho-social (low MDCB), integrate (medium MDCB), and bio-genetic (high MDCB) domains of mental illness causality.

autonomously what to do"), which highlighted the rapid increase of the endorsement of patients' activity from the early stage of academic knowledge (UPC) to the higher level of knowledge and familiarity with clinical psychology issues (GPC) — with some fluctuations related to the type of mental illness causal beliefs — compared to the relatively stable and balanced MDTR beliefs at the start of the professional activity (PS and TH). This pattern of relations seems to convey how trust in the patient's awareness (item 25) and ability to be concretely involved in the therapeutic treatment planning and process (item 26), is progressively acknowledged along the mental health professionalism stages without underestimating the therapist and treatment value (items 22 and 25), which is balanced by the causal domain associated to the mental illness aetiology. The causal explanation of a mental disorder is indeed also supposed to be substantively related to the therapeutic approach (e.g., psycho-dynamical versus cognitive-behavioural).

The two patterns of interaction among the expertise and familiarity levels, the MDCB levels, and several items of the MDTR dimension revealed then the possible integration of both active and passive beliefs about the patients' — and also the therapist's — responsible involvement and ability to play a co-protagonist part in the treatment relationship.

Remarks

The MFRM model application in Study 2 evidenced the following main results: a) the MDTR latent dimension was further confirmed and cross-validated with a different group of participants; b) higher levels of expertise in clinical psychology and treatment interventions (PS and TH) showed stronger beliefs about the patient's ability to be interactive, aware, and collaborative in the therapeutic relationship process than the lower levels of psychology students (UPC and GPC); c) participants who endorsed a mental illness causal belief oriented toward the psychosocial domain, demonstrated higher degrees of trust and belief in the patient's ability to be a co-protagonist in the psychotherapy process, when compared to the endorsement of the opposite biogenetic domain.

In conclusion, in Study 2 the further validity of the MDTR dimension and the ability of several relevant items to discriminate among the levels of clinical psychology and psychotherapy expertise and familiarity were established, as well as the causal explanations about the aetiology of mental illness.

General Discussion

According to the general objective pursued in the present research, the MFRM latent trait analyses evidenced relevant and interpretable results related to the definition of a 27-item dimension, denominated Mental Disorders Therapy Relationship (MDTR). The analysis of the MDTR items' differential functioning in relation to other relevant facets, such as specific characteristics of the participants, namely, levels of expertise and familiarity in clinical psychology and therapeutic psychotherapy was also pursued along with the belief domains about mental disorders' aetiology.

The main result of the two studies can be summarized as follows:

a) the MDTR dimension is inherently a multi-faceted dimension, characterized by three main constructs, namely, the relevance of the therapeutic relationship as a tool to help and support the patient (Tryon & Winograd, 2011), the importance of the therapist's role in the therapeutic relationship (Norcross & Lambert, 2011; Norcross & Wampold, 2011), the patient's awareness of and ability to understand when his/her own improvements take place during the therapeutic process, and his/her capacity to concretely affect the therapeutic outcomes (e.g., Mussell et al., 2000);

b) when comparing groups of students attending different university courses, psychology students demonstrated, more than the others, a higher degree of belief in the patient's actual possibility of being interactive and involved in the therapeutic relationship;

c) when comparing the effect of different levels of educational and professional expertise in clinical psychology and psychotherapy on specific items of the MDTR, diverse patterns of relationships emerged, suggesting the effect of developing a greater experience in clinical psychology on the beliefs and expectancies related to the patient's — and therapist's — role. The results highlighted the balancing effect of expertise on the trade-off between patient and therapist, who both maintain their separate roles of client and care provider, but are co-protagonists in the same therapeutic process (e.g., Tryon & Winograd, 2011), with different degrees of involvement and responsibility, according to the specific component of the therapeutic relationship object of attention along the phases of the treatment process;

d) when studying the interaction effect between the levels of mental health care expertise and the causal beliefs about mental illness on the MDTR item functioning, the following main trend emerged: the higher the educational and professional expertise, combined with the psychosocial or integrated domain of mental illness causal explanations, the stronger the beliefs about the patient's responsibility for a concrete involvement in the therapeutic and decision-making process, which, however should be balanced by the acknowledgement of the therapist's professional position and competence in the therapeutic care. The bias/interaction analyses conducted to further investigate the external and cross-validity of the latent dimension, thus supported the hypothesis that the beliefs about the origin of mental disorders, held by mental health care trainees and professionals, do have an effect on the perception and evaluation of a patient's sense of responsibility and active participation in the therapeutic context (e.g., Angermeyer, Holzinger, Carta, & Schomerus, 2011; Hill & Bale, 1980; Pistrang & Barker, 1992). This finding highlights the importance of personal beliefs and opinions within the therapeutic relationship, particularly related to the causal explanation of a mental illness, which can play a role in the development of the patient-therapist relation and in the establishment of therapeutic process goals.

The MDTR dimension conceptualized and devised in the present study, is supposed to represent a valid and easy-to-administer instrument which can be applied for both clinical and research purposes. Furthermore, the utility of the MDTR measurement dimension may lie in the use of this scale within the clinical practice as an additional tool for the planning of tailored therapeutic goals matched to the patient's attributional style, or to program and stimulate the growth of the patient's actual involvement and activity during the therapeutic process. The accordance between the therapist and patient' evaluations and beliefs they hold on what should be the appropriate relationship and mutual roles into the psychotherapy (Tryon & Winograd, 2011), can be of great importance to devise what works best for whom, by designing the best treatment tailored to the two main protagonists (Norcross & Wampold, 2011).

In view of future research, additional studies on the clinical population are suggested: on one hand, the double assessment of therapist and patient beliefs and expectancies, and the related accordance rating, may yield a useful, rough guideline for planning the treatment and testing the therapeutic outcome efficacy. On the other hand, the administration of the MDTR dimension in combination with other clinical assessment measures might improve the early stages of the therapeutic process and stimulate the establishment of a stronger patient-therapist working alliance. For instance, the hypothesis of an existing relation between the patient's ability to perceive him/herself as an active player in the therapeutic relationship and his/her degree of self-awareness, defined as the capacity of feeling and understanding the link between oneself inside and outside worlds (Silvestri et al., 2008), may set up an interesting line of clinical research. To test such a hypothesis,

the relation between the MDTR dimension and the Psychiatric Patient Self-Awareness scale (PPSA; Mannarini, 2009) may provide interesting results, both from the therapist and patient's point of view. The PPSA dimension is a self-awareness measurement dimension recently defined with Italian clinical inpatients. It presents five components, which are: request (the patient decides autonomously to ask for help), autonomy (the patient is aware of his/her own health status), content (the patient knows the reasons why the request for help is advanced), and context (the patient is aware of the context where he/she is acting). A significant relation between these components and the three MDTR main constructs (the relevance of mental health treatments as a tool to help and support the patient, the importance of the therapist's role in the therapeutic relationship, and the importance of the patient's role in the therapeutic process) is expected to be a convergent validation of the two measurement dimensions and to give the possibility of a better understanding of the MDTR contents. Such an interpretation should also assume particular interest from a methodological point of view, considering that both dimensions were defined within the latent trait modeling framework, according to the Rasch modeling formalization.

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