

The impact of training and therapeutic practice on body awareness of Trainees and Body Psychotherapists at the Greek Biosynthesis Centre - A pilot study

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Abstract

Body awareness is of central value in body psychotherapeutic approaches. In the framework of Biosynthesis practice and training, Interoceptive Body Awareness (IBA) is one of the most valuable personal competencies for the therapist. It becomes a means of guidance in the therapeutic encounter, forms the therapeutic intention and shapes the therapeutic intervention. The current pilot study aims to objectively portray the Body Awareness profile of Greek Biosynthesis trainees and therapists. In a between subjects design the extent of the developmental impact Biosynthesis training / therapeutic practice has on the degree of Interoceptive Body Awareness (IBA) was measured by the Multidimensional Assessment of Interoceptive Awareness (MAIA) instrument in three different groups of trainees and experienced therapists (N = 55). Data analysis comprised of MAIA reliability analysis in actual Biosynthesis data, the one-way analysis of variance (ANOVA) to determine variations in IBA construct and sub concepts between the different groups of Biosynthesis trainees / therapists and Post Hoc Comparisons with Bonferroni Correction for the clarification of differences. Results support a significant developmental impact of Biosynthesis training / therapeutic practice in regard to Interoceptive Body Awareness (IBA) and to three of its sub concepts, Attention Regulation, Self - Regulation and Body Listening. A challenge for future research is the extension of the research design to a larger sample of body psychotherapists in Greece, by focusing on the relationship between Body awareness and embodied countertransference, while adding to the quantitative a qualitative component as well.

Keywords: Biosynthesis Body psychotherapy, Interoceptive Body Awareness, Body-Psychotherapy training, Quantitative analysis

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Introduction

Body awareness has become, in recent years, a subject of scientific research in the field of health sciences and psychotherapeutic practice. Despite its profound importance it may carry a controversial connotation. On the one hand, in studies of chronic pain, anxiety and panic disorders, heightened body awareness refers to a patient's maladaptive cognitive attitude that exaggerates the experience of physical symptoms and is accompanied by rumination and negative beliefs, anticipating a coming catastrophe (Baaset al.,2004; Mehling et al., 2009). On the other hand, the cultivation and enhancement of body awareness in the framework of body psychotherapeutic

approaches is considered to be a key element in the management of negative painful conditions. It is the path leading from the disruption of body and oneself to integration (Lackner, & Fresco, 2016, Mehling et al., 2011).

The concept of body awareness refers to a person's ability to consciously focus attention onto the body (Mehling et al., 2009, Mehling et al. 2012, Price, & Thompson, 2007). It is connected to both proprioceptive and interoceptive body awareness. Proprioceptive awareness addresses the conscious perception of the skeletal and muscular system, movement, posture and balance. Interoceptive awareness implies the capacity of subjective recognition and awareness of afferent signals originating from the inner organs and processes of the body, such as heart beat, respiration, gastro intestinal system and the autonomous nervous system (Mehling et al. 2012).

Body awareness as an ability is not only an ideological and theoretical premise but is also of central value in body psychotherapeutic approaches (Totton, 2003). Body awareness also describes a set of skills on a continuum of verbal to non-verbal modalities in body psychotherapy (Leijssen, 2006) that makes use of the client's and the therapist's physical presence. Body awareness offers the therapist, via embodied countertransference, an important source of information about the actual process a client is undergoing and a tool for therapeutic intervention (Totton, 2014). For the client, body awareness acts as a central means of self-regulation and transformation (Carroll, 2014).

The importance of body awareness is also supported by evidence, based on neuro psychological findings (Ceunener et al., 2016, Craig, 2003, 2009). According to these findings interoceptive body awareness is linked to regional brain activities taking place in the anterior insular cortex, where a Meta - representation of the state of the whole body is constellated in regard to the emotional and pain-related experience. Some consider interoceptive capacity to be important for affect regulation, decision making and for the sense of self (Damasio, 2003, Dunn et al., 2010,). Damasio (2003) declared these body mapping dedicated brain areas as the potential neural basis "of the mind's representation of the self" and the biological place for the "grounding of the mental self" (p.227). Neuroplasticity research as well as mindfulness research suggest that Interoceptive Body Awareness can be cultivated through meditation and IBA training and practice (Critchley et al, 2004; Hölzel et al., 2011). Moreover, body awareness is correlated with positive affect and body responsiveness (BR), an important concept of embodiment, which describes a person's ability to integrate and consciously react to body sensations using them to lead behaviour and decision-making in a meaningful manner (Tihanyi et al., 2017). Body responsiveness furthermore acts as a significant mediator between body awareness and affect. Research findings support the fact that having a higher degree of body responsiveness is connected to higher awareness of body sensations and to more positive than negative emotional states and vice versa (Tihanyi, et al., 2017).

In recent years, addressing the issue of body awareness in an objective and quantifiable manner has become one of the greatest challenges. In an extensive review of existing self-report instruments, measuring body awareness in the fields of body perception, body consciousness, embodiment and mindfulness, underlying concepts were analysed and psychometric properties assessed (Mehling et al., 2009). The authors concluded that the majority of measures a) do not reflect a unified multifaceted understanding of body awareness; mostly focusing on one single dimension b) they rather reflect the maladaptive than the adaptive non-judgmental apprehension of heightened body awareness c) the majority of them lack strong psychometric properties and / or usage in a wide range of studies, d) none of these instruments were validated against objective measures, such as heart rate detection, respiratory resistance load detection and gastrointestinal distension.

In order to overcome these obstacles the operationalisation from an initial “physiological approach” of body awareness was extended to a multidimensional construct of body awareness, defining the complex BA as: “... the sensory awareness that originates from the body’s physiological states, processes (including pain and emotion), actions (including movement) and functions as an interactive process that includes a person’s appraisal and is shaped by attitudes, beliefs and experience in their social and cultural context” (Mehling et al. 2012, p.2).

Based on this perspective the authors implemented a systematic mixed – method process aiming at the construction of a multi-dimensional body awareness measure, “The Multidimensional Assessment of Interoceptive Awareness (MAIA)”.

MAIA is a 32 item, multidimensional, change sensible self-report measure, developed in the English language on a 6-points Likert scale. It assesses eight distinct, but related concepts of Interoceptive Awareness, grouped into five dimensions. The eight sub concepts are Noticing (N), Not Distracting (ND), Not Worrying (NW), Attention Regulation (AR), Emotional Awareness (EA), Self-regulation (SR), Body listening (BL) and Trusting (TR) (Mehling et al., 2012).

Body psychotherapy (BP) aspires, in recent years to become an established form of psychotherapy, overarching different schools of thought and practice. In most of them, BP refers to a psychotherapeutic framework following the central principals of scientific psychotherapeutic practice, currently undergoing a shifting process, where the necessity of a more scientific, evidence based profile emerges (Koemeda-Lutz et al., 2006, Loew; et al., 2006, Röhricht, 2009).

In the tradition of Reich’s conception of “functional identity between body and mind” (Rolef Ben-Shahar, 2014, p. 159) the fundamental common targets in the theoretical body psychotherapeutic discourse focus on overcoming the traditional body and mind split as expressed in the Cartesian dualism and serving in a holistic view the personal potential of the emotional, cognitive, physical, social and sometimes spiritual processual integration (Röhricht et al., 2014; Totton, 2003). In Body psychotherapeutic practice the body takes a central place, following the fundamental assumption that constitutes the lived scene of emotions, cognitions, beliefs, perceptions and bodily expressions, thus providing the medium of our existence (Geuter, 2015).

Under this perspective, body awareness becomes an important facet in the interplay of the therapeutic relationship, the sense of the therapists’ embodied identity and the clients’ intended embodiment. It supports both the dynamics of transference and embodied countertransference as well as the outcomes of body psychotherapeutic interventions (White, 2014).

Biosynthesis is Body Psychotherapy in the Neo – Reichen tradition, founded by David Boadella in the early 70’s, emphasizing processes of integrative self-formation that guide organic, psychological and spiritual growth. David Boadella (1997) stated the importance of the relational aspect in an embodied therapeutic encounter: “The embodied therapist and the embodied client enter the room. Two breathing systems interact, two motoric systems come into awareness of each other: a relationship begins in which non-verbal communication plays a very large part (p.35)... Breath is relational, touch is communicative, movement is interactive, emotionality is contact-oriented, object relations become body subject relatedness” (p.37). By introducing a holistic and integrative approach he outlined the prospects of a psychotherapy of the future “that is more able to integrate the dimensions of the human being (p.37)... by putting more emphasis on the capacities of the client to resynthesize his experiences based on a transformative re-embodiment in which somatic, psychic and spiritual levels of being are brought into co-evolution with each other” (p.37).

The Biosynthesis concept of body awareness is closely related to the three main therapeutic modalities: “Centering”, “Grounding” and “Facing” (Boadella & Boadella-Specht, 2006; Boadella, personal communication, February 2017). Boadella (1987) related these three therapeutic modalities to the three embryological layers on which the human body is built up: the endoderm that formed the inner organs, the mesoderm that formed the muscular and skeletal system and the ectoderm that formed the skin, brain and nervous system (Totton, 2003).

“Centering” is regarded in the Biosynthesis approach as an interceptive contact to breathing and to inner bodily and emotional states. It aims at rebalancing the polarities of acting out and emotional apathy towards a more centred emotional position. “Grounding” refers to proprioceptive contact to movements and muscle tone. It aims at rebalancing the polarities of hypotonous muscular body state, connected to feelings of resignation and of hypertonus muscular body state, connected to feelings of pain and stress, towards a more plastic body state, flexible movement and emotional expression. “Facing” is considered as exteroceptive contact to the expressions and postures of another person. It aims at rebalancing the polarities of over focusing and under focusing, towards a more realistic perception of the outer world (Boadella, 1987). In the framework of the European Association for Body Psychotherapy (EABP), Body Awareness constitutes an important required skill, defined as “Felt sense and somatic awareness” (Boeninget al, 2012). In Biosynthesis training, Interoceptive Body Awareness, one of the most valuable personal competencies, determines to a great extent the therapist’s sense of self as an embodied, as well as a spiritual agent. At the same time, it becomes the means for guiding the therapeutic encounter, a source of information in the dynamics of embodied countertransference and a tool that forms the therapeutic intention and shapes the therapeutic intervention (Boadella, 2015).

The above mentioned theoretical considerations and evidence based research findings form important facts for the therapeutic practice as they underline the close connection between body processes, mind and self-formation. They emphasise the developmental potential that interoceptive body awareness has for trainees and therapists via training and practice and underscore its capacity to offer the therapeutic encounter the “Ground” for a person’s contact to core qualities (Boadella, 1998).

Under these premises the need to capture and portray in an objective manner a picture of the Greek Biosynthesis Therapists’ Body Awareness profile has emerged. The current pilot study aims to estimate the extent of the developmental impact Biosynthesis training/therapeutic practice might exert on Interoceptive Body Awareness of trainees and experienced therapists. To the best of our knowledge, this is the first research study to explore the specific association within the area that covers the field of Biosynthesis Body Psychotherapy.

Methods Design

The research was conducted with the approval and support of the Greek Biosynthesis Centre. A between subjects’ design was applied that compared three different groups of participants with varying psychotherapeutic experience in regard to their experienced degree of body awareness (experienced therapists, middle experienced Trainees, newly appointed trainees). This approach was guided by the intention of capturing a developmental component in the cultivation of body awareness via learning of associated skills during Biosynthesis training. Hypotheses testing referred to the impact that the length of Biosynthesis training / therapeutic practice had on body awareness by comparing the three different groups.

It was hypothesised that participants in the three different groups would differ significantly in their IBA index, and in their IBA sub concepts indices, respectively revealing higher to lower scores according to their level of training / therapeutic experience.

Participants

The Biosynthesis pilot study consisted of a sample of 55 Greek participants, all trainees and therapists affiliated with the Greek Biosynthesis Centre. Participants were contacted in person during a training course (middle experienced trainees and newly appointed trainees) or during a supervision course (experienced therapists). Inclusion criteria for participation were being a) an experienced therapist with completed training and at least 8 years of therapeutic practice (Group 1) or b) a middle experienced trainee currently undergoing training (Biosynthesis Training course T8, Biosynthesis Training course T9) in the third or fifth year of training respectively (Group2) or c) a newly appointed trainee, just starting training (Biosynthesis Training course T10) with Biosynthesis.

Data collection

Data collection was conducted in the period from 3/2/2017 to 5/3/2017 through a two-part questionnaire administered in pencil paper-version during the respective training / supervision courses. Table 1 presents the research design in regard to group affinity of participants, sample size, date of data collection and modus of instrument implementation:

Table 1: *The Research design in the Biosynthesis pilot study*

Group affinity	Sample size (N =55)	Date of data collection	Questionnaire implementation
Experienced therapists (completed training & > 8 years therapeutic experience in Biosynthesis body psychotherapy)	n = 17	3-5/2/2017	During supervision course (E2) or via personal contact in the case of non-participation in E2
Middle experienced Trainees (2 to 4 years training experience in Biosynthesis body psychotherapy)	n = 22	10-12/2/2017	During an obligatory theoretical training course on “counselling in body psychotherapy”, where T8 & T9 trainees participated
Newly appointed trainees (no training experience in Biosynthesis body psychotherapy)	n = 16	3-5/3/2017	At the beginning of the first module of the new Biosynthesis training (T10)

Materials

For Hypotheses testing the Interoceptive Body Awareness (IBA) concept was measured by the Multidimensional Assessment of Interoceptive Awareness (MAIA). As mentioned above, the original MAIA instrument (Mehling et al. 2012), consists of 32 items, evaluating the IBA construct and the eight sub-concepts of body awareness, rated at a 6-point Likert scale, ranging from 0 (never) to 5 (always). By answering the MAIA questionnaire participants have to rate each of the 32 items in regard to “how often each statement applies to you generally in daily life” (Mehling, et al, 2012) with ordinal responses coded from 0 (“never”) to 5 (“always”). Scales are scored in a manner that a higher score signifies heightened body awareness. Extensive psychometric properties testing of MAIA had good results supporting its reliability, dimensionality and good construct validity.

Table 2 presents the distinct concepts and dimensions of the original MAIA instrument (Mehling et al. 2012), offering the respective definitions with reference to the connected items.

Table 2: MAIA Interoceptive Body Awareness (IBA) construct & concepts

Concepts	Items	Definition	Dimension
Noticing (N)	Four items 1 - 4	Awareness of uncomfortable, comfortable, and neutral body sensations	A. Awareness of body sensations
Not Distracting (ND)	Three items 5R*,6R*,7R*	Tendency not to ignore or distract oneself from sensations of pain or discomfort	B. Emotional reaction and attentional response to sensations
Not Worrying (NW)	Three items 8R*,9R*,10R*	Tendency not to experience emotional distress or worry with sensations of pain or discomfort	
Attention Regulation (AR)	Seven items 11 - 17	Ability to sustain and control attention to body sensations	C. Capacity to regulate attention/ ability to sustain & control attention to body sensations
Emotional Awareness (EA)	Five items 18 - 22	Awareness of the connection between body sensations and emotional states	D. Awareness of mind/body integration: access to more developed levels of body awareness

Self - Regulation (SR)	Four items 23 - 26	Ability to regulate distress by attention to body sensations	
Body Listening (BL)	Three items 27 - 29	Tendency to active listening to the body for insight	
Trusting (TR)	Three items 30 - 32	Experience of one's body as safe and trustworthy	E. Trusting body sensations

R* = reversed

In the Biosynthesis study the administered questionnaire consisted of two parts. The first one addressing demographic variables, including age, gender, educational background and previous experience in psychotherapy as a client or therapist, and the second one contained the preliminary Greek translation of the original self-report MAIA instrument, measuring the dependent variable of interest: Interoceptive Body Awareness (IBA). The MAIA questionnaire was forward translated from English into Greek by the main investigator and crosschecked by two experienced English speaking Biosynthesis Body psychotherapists. In a second run the Greek questionnaire was backward translated by one of the experienced Biosynthesis Therapists and crosschecked by the other experienced Biosynthesis therapist and the main investigator. Necessary homogenization was conducted in a group process.

In the second part of the questionnaire participants had to respond to the question “how often does each statement apply to you generally in daily life?” using the 6-point Likert scale. The sub scale scores were calculated by averaging the items on each scale, varying from 0 to 5. The Interoceptive Body Awareness index was calculated by averaging results on the sub scales, varying in a 0 to 5 range, with higher scores signifying heightened body awareness.

Procedure

The study was designed and approved by the Institutional Review Board of the American College of Greece. Biosynthesis trainees and therapists participated voluntarily in the study. The theoretical framework as well as the purpose, methodological approach and procedure of the study were fully explained by the investigator. Participants were given an informed consent form that they had to sign together with the two part questionnaire. After completing the questionnaire, they were provided with a debriefing statement and the contact details of the researcher, should any questions arise or problems occur. Protection of anonymity and confidentiality were assured and data collected were stored in a password protected computer.

Results

In regard to the demographic profile of participants (see Table 3) females were overrepresented (78, 2%), while males (21,8%) were underrepresented in the sample. The female disproportion in the participants' gender is typical for the gender distribution in the psychotherapeutic profession in Greece from which the three samples were recruited. According to data of the European Association for Psychotherapy for Greece (EAP, 2017) from 326 holders of the European Certificate of Psychotherapy (ECP) females are overrepresented with 76%, while males are underrepresented with 24%.

Among participants ages ranged from 24 to 62 years of age, with a mean age of 45.15 (SD = 9.25). In regard to their educational background participants (N = 55) were mostly well educated with 45.4% having a graduate degree, 38.2% having university degree and only 16.4% having completed secondary education (see Table 3). The great majority (96.4%) of participants (N = 55) had psychotherapeutic experience as a client with a mean duration of 8 years attending psychotherapy (SD = 5.93), mostly in Body psychotherapy or Gestalt. In regards to the actual practice of psychotherapy, 49,1% are currently actively involved, with the experienced therapists' group (n = 17) having a 100% engagement. As the two trainee groups are concerned, 31.8% of middle experienced Biosynthesis trainees (n = 22) practised as psychotherapists as compared to 18.8% of new Biosynthesis trainees (n = 16) (see Table 3). All trainee practitioners were psychotherapists of other directions, acquiring an additional psychotherapeutic qualification.

Table 3: *Sociodemographic data of Biosynthesis pilot study participants*

Sociodemographic variables	Categories		
Gender (100%, N = 55)	Females		Males
	78,2% (n = 43)		21,8% (n = 12)
Age (100%, N = 55)	Min	Max	Mean Age
	24 years	62 years	45,15 years (SD = 9,25)
Educational Background (100%, N = 55)	Graduate degree 45,4% (n = 25)	University degree 38,2% (n = 21)	Secondary Education 16,4% (n = 9)
Psychotherapy experience as client (100%, N = 55)	Yes		No
	96,4% (n = 53)		3,6% (n = 2)
Actual practice in Psychotherapy (49,1% , N = 27)	Experienced Therapist Group (N = 17)	Middle experienced Group (N = 22)	New Trainees' Group (N = 16)
	100% (n = 17)	31,8% (n = 7)	18,8% (n = 3)

In order to gain a clear picture of the psychometric properties of the Greek MAIA implementation and to assure the quality of results, the first step was aimed at an exploratory analysis. Missing cases (n = 4) were excluded from any further analysis.

Reliability was assessed by Cronbach alpha. Cronbach alpha for the IBA concept in the Biosynthesis pilot study data scored at .95. Cronbach alpha (see Table 4) for the MAIA sub concepts in the original MAIA study ranged from .66 (ND) to .82 (BL, EA) while in the Biosynthesis study from .77 (NW) to .90 (BL), with the exception of the Not Distracting

sub concept (ND) which revealed a remarkable low alpha coefficient of .37. The comparison of mean scores revealed that mean scores tended to be higher in the original MAIA study ranging from a low of 3.20 (N D) to a high of 4.16 (E A) as compared to the Biosynthesis study that ranged from a low of 2.88 (N D) to a high of 4.10 (E A).

Table 4: *A Comparison of Reliability (Cronbach's alpha) and descriptive statistics (Mean / SD) for BA Sub concepts in MAIA original study and Biosynthesis pilot study*

MAIA Interceptive Body Awareness Concepts & Construct IBA	MAIA Original study Alpha	MAIA Original study Mean (SD)	MAIA Biosynthesis study alpha	MAIA Biosynthesis study Mean (SD)
Noticing (N)	0.69	3.94 (.59)	0.87	3.85 (.88)
Not Distracting (ND)	0.66	3.20 (.87)	0.37	2.88 (.83)
Not Worrying (NW)	0.67	3.27 (.84)	0.77	3.10 (.97)
Attention Regulation (AR)	0.87	3.79 (.64)	0.89	3.40 (.85)
Emotional Awareness (AW)	0.82	4.16 (.64)	0.85	4.10 (.82)
Self - Regulation (SR)	0.83	3.86 (.74)	0.88	3.35 (1.03)
Body Listening (BL)	0.82	3.50 (.87)	0.90	3.35 (1.03)
Trusting (TR)	0.79	4.13 (.74)	0.87	3.66 (1.04)

In order to check on the internal consistency for the sub concept “Not Distracting” (ND) Pearson’s Correlation analysis was conducted (see Table 5). The analysis revealed a significant correlation between ND item 6 and ND item7, but not in the case of the ND item 5. On the basis of these results and as the ND sub concept contained a small number of items (3 items) the decision was made to exclude it from further analysis and proceed with a modified Interceptive Body Awareness index based on 29 out of 32 items (IBA 29).

Table 5: *Pearson’s Correlation analysis for the sub concept “Not distracting” in the Biosynthesis pilot study*

MAIA Biosynthesis Not distracting (ND) - 3		Not distracting (ND) Item 5	Not distracting (ND) Item 6	Not distracting (ND) Item 7
Not Distracting (ND) Item 5	Pearson Correlation Sig. (1-tailed) N	1 55		
Not Distracting (ND) Item 6	Pearson Correlation Sig. (1-tailed) N	.011 .468 55	1 55	
Not Worrying (NW) Item 7	Pearson Correlation Sig. (1-tailed) N	.050 .359 54	.530** .000 54	1 54

**Correlation is significant at the 0.01 level (two – tailed)

In order to conduct ONE WAY ANOVA, the assumption of homogeneity was checked. Levene test results for the Body awareness construct (IBA29) as well as for all tested sub-concepts were non-significant (p >.05), so that the assumption of homogeneity was assured (Table 6).

Table 6: *Test of Homogeneity of Variances of the IBA (29) and its sub concepts*

MAIA Interoceptive Body Awareness Concepts & Construct IBA (29)	Levene Statistic	df1	df2	Sig.*
Noticing (N)	.976	2	51	.384
Not Worrying (NW)	2.155	2	52	.126
Attention Regulation (AR)	.558	2	51	.576
Emotional Awareness (AW)	1.772	2	52	.180
Self-Regulation (SR)	.103	2	52	.902
Body listening (BL)	1.217	2	51	.305

Trusting (TR)	.362	2	52	.698
Interoceptive Body Awareness Index IBA (29)	.459	2	49	.635

*Levene test sign at the 0.05 level

ONE WAY ANOVA analysis was based on a model where level of training / therapeutic experience was the predictor variable, aiming to explain variations in the performance of participants in Interoceptive Body Awareness (IBA) and in IBA sub concepts, the dependent variables. Descriptive statistics (Mean, SD) (Tables 7, 8) revealed an initial picture of differentiation between the three groups of interest that had to be further analysed by mean comparisons.

A ONE WAY ANOVA analysis revealed the absence of a significant effect of the level of training/therapeutic experience on the sub concepts of Noticing ($p = .079$), Not worrying ($p = .115$), Emotional Awareness ($p = .143$) and Trusting ($p = .055$), (see Table 7):

Table 7: ONE WAY ANOVA analysis with non-significant results in the Biosynthesis pilot study

MAIA IBA Concepts		Descriptives	F value	p value*	η^2
Noticing (N)	experienced therapists	M = 4.27, SD = .57	F (2,51) 2.66	.079	.094
	middle experienced trainees	M = 3.67, SD = .94			
	new trainees	M = 3.67, SD = .96			
Not Worrying (NW)	experienced therapists	M = 3.45, SD = .78	F (2, 52) = 2.25	.115	.080
	middle experienced trainees	M = 3.10, SD = .84			
	new trainees	M = 2.75, SD = 1.23			
Emotional Awareness (EA)	experienced therapists	M = 4.42, SD = .45	F (2,52)= 2.02	.143	.072
	middle experienced trainees	M = 3.95, SD = .88			
	new trainees	M = 3.95, SD = .98			

Trusting (TR)	experienced therapists	M = 4.15, SD = .80	F (2,52) = 3.07	.055	.105
	middle experienced trainees	M = 3.47, SD = 1.02			
	new trainees	M = 3.40, SD = 1.14			

*p value sign at the 0.05 level

On the contrary, level of training/therapeutic experience had a significant effect on Interceptive Body Awareness IBA (29) (p = .007) and on three out of seven analysed sub concepts: Attention Regulation (p = .002), Self - Regulation (p = .021) and Body Listening (p = .015), (see Table 8):

Table 8: ONE WAY ANOVA analysis with significant results in the Biosynthesis pilot study

MAIA IBA Concepts		Descriptives	F value	p value*	η^2
IBA (29)	experienced therapists	M = 4.04, SD=.50	F (2, 49) = 5.43	.007 Sign.	.181
	middle experienced trainees	M = 3.37, SD = .75			
	new trainees	M = 3.32, SD=.76			
Attention Regulation (AR)	experienced therapists	M = 4.00, SD = .64	F(2,51) = 7.27	.002 Sign.	.222
	middle experienced trainees	M =3.22, SD = .82			
	new trainees	M = 3.04, SD = .78			
Self-Regulation (SR)	experienced therapists	M = 3.85, SD = .73	F(2,52) = 4.19	.021 Sign.	.138
	middle experienced trainees	M = 3.03, SD = 1.0			
	new trainees	M = 3.28, SD = .86			
Body Listening (BL)	experienced therapists	M = 3.92, SD = .58	F(2,51) = 4.60	.015 Sign.	.152
	middle experienced trainees	M = 3.16, SD = 1.01			
	new trainees	M = 2.98, SD = 1.12			

*p value sign at the 0.05 level

In order to clarify the respective differences between groups Post Hoc Comparisons with Bonferroni Correction were conducted for IBA (29) and the three sub concepts Attention Regulation, Self-Regulation and Body Listening (see Table 9).

Table 9: *Post Hoc Comparisons between groups with Bonferroni Correction for significant MAIA Interoceptive Body Awareness Sub Concepts and Construct in the Biosynthesis pilot study*

MAIA Interoceptive Body Awareness Construct & Concepts	(I) Level of training/ experience	(J) Level of training/ Experience	Sig.*
Attention Refulation (AR)	experienced therapists	middle experienced trainees	.010
		new trainees	.003
	middle experienced trainees	experienced therapists	.010
		new trainees	1.00
	new trainees	experienced therapists	.003
		middle experienced trainees	1.00
Self - Regulation (SR)	experienced therapists	middle experienced trainees	.018
		new trainees	.208
	middle experienced trainees	experienced therapists	.018
		new trainees	1.00
	new trainees	experienced therapists	.208
		middle experienced trainees	1.00
Body Listening (BL)	experienced therapists	middle experienced trainees	.056
		new trainees	.021
	middle experienced trainees	experienced therapists	.056
		new trainees	1.00
	new trainees	experienced therapists	.021
		middle experienced trainees	1.00
Interoceptive Body Awareness Index (IBA 29)	experienced therapists	middle experienced trainees	.017
		new trainees	.016
	middle experienced trainees	experienced therapists	.017
		new trainees	1.00
	new trainees	experienced therapists	.016
		middle experienced trainees	1.00

The mean difference is significant at the 0.05 level

In specifically the application of Post Hoc Comparisons with Bonferroni Correction showed that:

- Experienced therapists have a significantly higher level of Body awareness IBA (29) than middle experienced trainees ($p = .017$) and new trainees ($p = .016$). Nevertheless, middle experienced trainees and new trainees do not differ significantly in their level of IBA (29) ($p = 1.0$).
- Experienced therapists have a significantly higher level of Attention Regulation than middle experienced trainees ($p = .010$) and new trainees ($p = .003$). Nevertheless, middle experienced trainees and new trainees do not differ significantly in their level of Attention Regulation ($p = 1.0$).
- Experienced therapists have a significantly higher level of Self-Regulation than middle experienced trainees ($p = .018$) but not than new trainees ($p = .208$). At the same time middle experienced trainees and new trainees do not differ significantly in their level of Self-Regulation ($p = 1.0$).

At the same time, the application of Post Hoc Comparisons with Bonferroni Correction further showed that experienced therapists do not have a significantly higher level of Body Listening than middle experienced trainees ($p = .056$). On the contrary, experienced therapists do have a significantly higher level of Body Listening from new trainees ($p = .021$). At the same time middle experienced trainees and new trainees do not differ significantly in their level of Body Listening ($p = 1.0$).

Discussion

In the present study we investigated the developmental impact Biosynthesis training / therapeutic practice exerts on the degree of Interoceptive Body Awareness (IBA) of three different groups of trainees and experienced therapists ($N = 55$), as measured by the Multidimensional Assessment of Body awareness (MAIA) instrument. To our knowledge this is the first attempt to measure body awareness in a controlled manner in trainees and body psychotherapists in Greece.

Analysis of reliability of MAIA in Biosynthesis data revealed for the BA concept a Cronbach's alpha of .95 and for the BA sub concepts Cronbach's alpha values ranging from .85 to .90 with one exception however of the Not Distracting sub concept (ND). All other values were consistently higher than the original MAIA, ranging from .66 to .82. MAIA appeared to be a relatively reliable instrument in this newly studied population, with the exception of the Not Distracting sub concept, with an alpha Coefficient of .37, that was excluded from further analysis due to item inconsistency. This finding is aligned to previous results (Bornemann et al. 2015; Cali et al. 2015; Valenzuela et al, 2015) where the internal reliability of the subscale of Not Distracting was also found as questionable with a Cronbach alpha of .56 for the German study, a Cronbach's alpha of .53 for the Italian study and a Cronbach's alpha of .40 for the Chilean study respectively. Nonetheless, it has to be further explored if the specific pattern that was observed in the Greek pilot study is a by-product of the translation process or has its roots in a conceptual aetiology, suggesting the necessity of a more diligent definition of the underlying concept of Not Distracting and subsequently of the reconstruction of the corresponding items.

Our analysis detected an impact of the predictor variable, namely of Biosynthesis training / therapeutic practice on the construct of interest, namely on Interoceptive Body awareness (IBA). Length of Biosynthesis training / therapeutic practice did have a significant impact

in regard to Interoceptive Body Awareness (IBA) and on three out of seven analysed sub concepts: Attention Regulation, Self - Regulation and Body Listening, fully verifying our Hypothesis 1 and partially verifying Hypothesis 2 (H2.4, H2.6 and H2.7). These results may suggest a strong link between Attention Regulation, Self-Regulation and Body Listening which makes sense as these three concepts are strongly connected to a high capacity for mindful observation and non-reactivity (AR and SR), valuing the importance of Body Listening as a precious skill to actively listen to the body for insight (Mehling et al. 2012). A similar pattern was revealed for these three sub concepts in the German study in regard to the moderating impact that contemplative practice has on the “regulatory aspects of Interoceptive Awareness” (Bornemann et al. 2015, p.9). These results supported the qualitative reports of participants of contemplative practices with quantitative arguments. In Biosynthesis theory and practice “centering” is the core therapeutic modality grounded on but also enhancing the ability of Interoceptive body awareness (Boadella., 1987). Within the framework of the therapeutic modality of centering the three significant sub concepts of Attention Regulation, Self-Regulation and Body Listening are considered to be strongly interrelated. Attention Regulation and Self-Regulation act in a tandem function with Body Listening, the third significant sub concept, playing the role of the mediator in the process of becoming aware of and rebalancing emotions.

Our results in regard to the non-significant impact of training / therapeutic practice on the sub concepts Noticing, Not Worrying, Emotional Awareness and Trusting are in contrast to the original MAIA study, where trainees and experienced therapists do signify heightened levels both in the IBA construct and in all eight sub concepts of BA. We found the non-significance of the Emotional Awareness sub concept particularly unexpected, as in Biosynthesis theory and practice awareness of the connection between body sensations and emotional states is considered to be at the core of the “centering” modality. Probably, as recent research findings reveal, emotional awareness which uses the body as a portal to consciousness, is an ability and a state that requires time to be developed and cultivated (Shohamet al, 2017). Nevertheless, an alternative possible explanation for this not expectable landscape in Biosynthesis data is rather presumed in the limitations of our pilot study and has to be further investigated.

Biosynthesis pilot study findings confirm the approach of the original MAIA study, during the design phase of the self-report measure, to compare and testify a significant difference in Body Awareness between two and not three distinct groups of Body therapists. Biosynthesis experienced body psychotherapists have a significantly higher degree of body awareness than trainees, where the stage of training (newly appointed or senior trainee) seems not to have an impact, but the fact of actual professional experience does. A possible explanation for this outcome might be found in the extensive experience of all Biosynthesis trainees as clients of body psychotherapy (96.4%) and in the enhancing role that body psychotherapeutic practice seems to play in the constellation and development of an embodied identity in experienced Biosynthesis therapists.

The Biosynthesis pilot study has three major limitations to be addressed by future research: the rather small sample size (N = 55) of the current work, the preliminary character of the MAIA questionnaire’s translation into Greek and the need for in-depth exploration of the validity properties of the MAIA questionnaire in the Greek population.

Conclusion

The main results of the study confirm the prevailing perception of the developmental nature of Body awareness and the centrality it takes in the clinical work of body psychotherapy. As both an inner attitude and a skill to be acquired and cultivated, Body awareness has equal importance to both the therapist and the client. By introducing the perception of “anchoring in the body” (Hartley in Weiss, 2015) body awareness opens up new dimensions of relating to the self, others and the environment. In the Biosynthesis approach, body awareness forms the cornerstone that is functionally connected to diagnosis, to therapeutic practice and to therapeutic embodied resonance (Boadella, 2015). In the framework of a dynamic diagnostic process it offers the means for deepening the therapist’s understanding through sensory perception and collaborative exploration. In regard to the therapeutic practice it shapes and carries the continuous relational dialogue between therapist and client, while building bridges across verbal and non-verbal communication. Therapeutic embodied resonance intermediates, challenges and supports in both cases the therapeutic alliance.

The findings of our pilot study, the first study conducted on this subject in the field of body psychotherapy in Greece, underline the necessity for an extension of the initial pilot character of the study to a full research project addressing the above mentioned limitations. A statistically adequate sample of participants from the field of Body psychotherapy in Greece, the use of a back - forward translated MAIA Questionnaire and the further exploration of the validity properties of the Greek instrument are prerequisites for a meaningful investigation of the model of impact.

We find three major challenges to be further accomplished. The first one is the conduct of further quantitative research according to a similar design to the pilot study but in a larger sample of body psychotherapists using the back - forward translated MAIA questionnaire, containing participants from all relevant body psychotherapy schools currently practicing in Greece (Neo Reichan, Biosynthesis, Bodydynamic, Bioenergetics etc.). The second one is the comparison of trainees / therapists data with a group representing a nonprofessional population and, and the third one is a qualitative analysis of the role of IBA in the lived embodied psychotherapeutic practice and its connection to embodied countertransference, as experienced by professional body psychotherapists.

BIOGRAPHIES

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