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RESEARCH PAPER

# Body Awareness, Emotional Clarity, and Authentic Behavior: The Moderating Role of Mindfulness

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**Abstract** Emotional clarity is considered a basic component of self-knowledge. However, not much is known regarding its association with self-knowledge in terms of bodily aspects, and the combinations by which these two aspects are used to enhance authentic living. Based on a salutogenic perspective, the current study examined whether emotional clarity and body awareness are associated. Further, we tested the hypothesis that these constructs contribute to authentic behavior through the moderation of mindfulness. 341 university students completed questionnaires assessing body awareness, emotional clarity, mindfulness, and authentic behavior. The findings indicated that body awareness and emotional clarity are moderately correlated. SEM analysis revealed that emotional clarity was correlated with authentic behavior, and that mindfulness moderated the association between body awareness and authentic behavior. Further, a two-factor model for authentic behavior was generated; intrapersonal-authenticity and interpersonal-authenticity. Hierarchical regression analyses indicated that while emotional clarity was associated with both factors, body awareness was only associated with interpersonal-authenticity, through the moderation of mindfulness. Mindfulness further mediated the association between emotional clarity and interpersonal-authenticity. The findings indicate that body awareness and emotional clarity are pivotal for self-knowledge processes, yet demonstrate a complicated mechanism under which they operate. While emotional information seems to be more accessible for authentic behavior enhancement, the use of bodily information is conditioned by mindfulness.

**Keywords** Body awareness · Emotional clarity · Mindfulness · Authenticity

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## 1 Introduction

Body awareness and emotional clarity are considered as primary constituents of subjective self-knowledge that enhance well-being (Augusto-Landa et al. 2011; Craig 2003; Mehling et al. 2009; Salovey et al. 1995). Body awareness is commonly defined as the combination of *sensitivity* and *attentiveness* to bodily processes and states (Andersen 2006; Bekker et al. 2002; Hansell et al. 1991; Shields et al. 1989; Spoor et al. 2005). *Sensitivity* to bodily signals reflects a tendency to be aware of bodily sensations (Andersen 2006; Craig 2003; Shields et al. 1989; Spoor et al. 2005), to notice subtle bodily changes in response to internal and environmental conditions (Price and Thompson 2007), and to differentiate between various sensations (Mehling et al. 2005). *Attentiveness* to bodily signals refers to the degree to which individuals are attentive to and focused on their bodily sensations, which enables them to identify physiological fluctuations (Bekker et al. 2002; Hansell et al. 1991). As opposed to body vigilance, which refers to markers of pathology of the body (Barsky et al. 1990), attentiveness relates to all bodily sensations, which are mostly normal physical sensations.

Emotional clarity, sometimes referred to as clarity of emotions, is defined as the degree to which personal emotions are clear and vivid to the individual's conscious awareness (Coffey et al. 2003). More specifically, this attribute refers to the ability to understand subjective emotions in means of an ability to identify them, distinguish between them, and label them accurately (Coffey et al. 2003; Gohm and Clore 2002; Salovey et al. 1995). Emotional clarity was suggested to be one of the most essential and generic components which underlie multidimensional constructs such as alexithymia (Bagby et al. 1994) and emotional intelligence (Mayer and Salovey 1993).

The association between body and emotional clarity was thoroughly discussed within developmental theories. At the beginning of life, during what Winnicott (1960) described as the 'holding phase', the mother and infant are a merged entity, integrating both physical and mental functions (Ogden 1985; Winnicott 1960). Through what is considered "good enough" care, in which both physical and emotional needs are fulfilled, a limiting membrane, equivalent to the surface of the skin starts forming, as a border that distinguishes between what is inside and out, 'me and not me', and eventually forms the body-scheme. Gradually, this dichotomous membrane postulates the personal reality for the infant, which is the basis for recognizing the self, needs, and eventually the ability to locate and identify emotions (Winnicott 1954, 1960). This early stage is the basis for the "psyche-soma", a term used by Winnicott (1954) to stress that among infants, bodily and psychic experiences cannot be viewed as separated, and that in healthy development, the sense of self incorporates both body and psychic experiences.

Based on the understanding that different emotions are based on different patterns of activity of the autonomic nervous system (Levenson 1992, 1999), current theories also contemplate the association between body awareness and emotional clarity, mostly through the scope of neurobiological research. Damasio (2005) postulated that the interoceptive image of the body serves as a substrate for subjective feelings and emotions. More specifically, the body, as represented in the brain, is used as the ground frame for subjectivity; including feelings, emotions, and what is considered as 'mind' in general. Indeed, studies suggest that the center of consciousness of one's internal states is in the human right insular cortex, which contains a sensory representation of the physiological condition/homeostasis of the body, or an "interoceptive image of the body" (Craig 2002). The insula is also interconnected with the amygdala, hypothalamus, orbitofrontal cortex, and

structures of the limbic system, and was shown to be activated by emotions (Damasio et al. 2000; Ploghaus et al. 1999). In other words, the sensory-emotional-cognitive integration, mediated by the insula (Gu et al. 2012), may reflect the integration of bodily and emotional aspects of self-awareness.

Taken together, developmental and neurobiological perspectives suggest that body awareness and emotional clarity are intertwined. Yet, to our knowledge, the association between body awareness and emotional clarity has not been directly tested. A number of studies provide indirect support for this hypothesis, indicating that emotional clarity is negatively associated with body distortion (Manjrekar and Berenbaum 2012), and that difficulty with identifying and describing emotions is associated with somatosensory amplification (Barsky et al. 1990). Interoceptive awareness, which is measured as sensitivity to one's heartbeat, was found to be inversely correlated with alexithymia (Herbert et al. 2011), and rather enabling emotional coping (Werner et al. 2013). Other studies demonstrate that interoceptive skills affect embodied cognition (Hafner 2013), and that body awareness training enhances the coherence between subjective and physiological aspects (heart rate) of emotion (Sze et al. 2010). Thus, the first aim of the current study is to examine the hypothesis that body awareness and emotional clarity will be positively correlated.

### 1.1 Body Awareness, Emotional Clarity, and Authenticity

Authentic behavior is considered to be inherent for the sense of meaning in life (Heidegger 1962; Yalom 1980) and well-being (Rogers 1961; Winnicott 1960), which is derived from self-knowledge processes (Goldman and Kernis 2002; Wood et al. 2008). Simply, authentic behavior is defined as an ability to act in accordance with one's subjective experiences, wishes, and beliefs (Goldman and Kernis 2002; Sheldon et al. 1997; Wood et al. 2008). While there seems to be a debate regarding the nature of state and/or trait authenticity as a broad structure (e.g. Fleeson and Wilt 2010; Goldman and Kernis 2002; Lenton et al. 2013), it is referred to here as the subjective perception of *behavior*.

In the core of authentic behavior, lays the individual's connectivity with subjective knowledge, including bodily and emotional information, acquired through body awareness and emotional clarity (Kernis and Goldman 2006; Rogers 1961). That is, it has been suggested that the ability to act authentically, according to one's 'true self' develops through one's familiarity and compliance with his/her needs and desires (Rogers 1964; Winnicott 1960; Wood et al. 2008).

This perspective is also emphasized by the tripartite person-centered model of authenticity (Maltby et al. 2012; Wood et al. 2008). This model suggests that authenticity is comprised by three main aspects. The first is the level of self-alienation, which exemplifies the degree to which one's awareness to subjective experiences is congruent to his or her actual experiences. The second aspect is the degree to which the individual accepts and adapts to external influence that is received from social environment. The third aspect involves the extent to which one's behavior reflects the congruence between subjective experiences and actual behavior (Wood et al. 2008). Another recent model for authenticity was suggested by Kernis and Goldman (2006). Similar to Wood et al.'s (2008) model, this model also suggests that the ability to act authentically is associated with one's awareness, and unbiased processing of his or her subjective experience. Both models refer to authenticity as comprised of both cognitive and emotional subjective experiences, as well as actual behavior in congruence with these experiences.

Based on the integrative perspective of the mind and body, the second aim of this study is to examine the contribution of bodily and emotional experiences and the relation between them to *authentic behavior* as was conceptualized by Wood et al. (2008) as 'authentic living' and Kernis and Goldman (2006) as authentic 'behavior action'. As presented in the upcoming section, the third aim of this study is to conceptualize and examine the underlying mechanism of the association between body awareness and emotional clarity with authentic behavior.

### 1.2 The Moderating Role of Mindfulness

Awareness to subjective experience by itself is not enough to construct authentic behavior. An 'openness to organismic experience' (Rogers 1964), or what is described as the 'thinker' or 'observing ego' (Ogden 1985; Winnicott 1971), seems to be required conditions. These qualities, although not identical, relate to a certain orientation, characterized by an ability to actively attend to subjective experience, with confidence that these experiences are worthy and trustful (see Johanson and Dapa 2006). When this unique orientation is well developed and embraced, the individual is able to use the information gathered through his or her subjective experience as useful information, and act in accordance with it. In other words, body awareness and emotional clarity contribute to level of authenticity when the individual is able to espouse a certain orientation, characterized by an active and open ability to observe and attend to subjective experiences.

This orientation seems to be encompassed by the construct of mindfulness (see Dryden and Still 2006), defined as consisted of two components; the first refers to an ability to consciously focus attention towards internal and external experiences occurring at the present moment (Brown and Ryan 2003; Kabat-Zinn 2003; Langer 1992). The second component refers to the way in which this attention is induced, that is, as an open, accepting, and non-judging way (Baer et al. 2006; Kabat-Zinn 2003). Partially due to its Buddhist origins, mindfulness is mostly assumed to be related to meditation practice techniques. Evidence, however, indicates that mindfulness can also be conceptualized as a dispositional tendency that varies within and between individuals, even if they have never practiced meditation (Anicha et al. 2012; Brown and Ryan 2003; Langer and Moldoveanu 2000).

Carson and Langer (2006), postulated that mindfulness encompasses self-acceptance in the sense of the curiosity and novelty by which information is attended. Thus, mindful individuals tend to act authentically, as their attention is devoted to fully engage in the present, and not to accomplish approval of others, or bolstering low self-esteem (Carson and Langer 2006). According to Kernis and Heppner (2008), mindfulness and authenticity are both associated with a quiet ego, in terms of a strong sense of self. Although the interplay between these constructs is yet to be clear, it is suggested that mindful and authentic individuals are more capable of complying with information regarding the self, without delineating from awareness threatening information, or acting on a defensive behavioral manner. Taken together, it is suggested that the relation of body awareness and emotional clarity with authenticity is conditioned by a unique orientation towards subjective experience, as conceptualized here as mindfulness. Thus, the third aim of this study is to examine the hypothesis that the association between body awareness and emotional clarity, and authentic behavior is moderated by mindfulness.

In summary, the current study, addresses three hypotheses in regards to the nature of subjective awareness processes:

**Hypothesis 1** Body awareness and emotional clarity are positively associated.

**Hypothesis 2** Both body awareness and emotional clarity are positively associated with authentic behavior.

**Hypothesis 3** The associations between body awareness and emotional clarity, and authentic behavior are moderated by mindfulness. More specifically, body awareness and emotional clarity contribute to authentic behavior within high levels of mindfulness.

## 2 Method

### 2.1 Participants and Procedure

A sample of 341 university students participated in the study. Participants were recruited by online social networks for students, as well as classrooms. Seventy-five percent of the participants were female (n = 257); the average age was 28 (SD = 5.86). Eighty percent of the students were undergraduates (n = 272), and the remaining 20 % were graduate students (n = 69). The vast majority of the sample was healthy, as only 11.4 % (n = 39) of respondents reported having some chronic physical condition, such as asthma, irritable bowel syndrome, or migraines, and only 3.2 % (n = 11) reported having some manifestation of emotional distress, such as depression or anxiety. Further, 83.6 % (n = 285) rated their health as good.

Data was collected after approval by the Institutional Human Ethics Committee and receipt of informed consent from the participants. Data was gathered through either an electronic Internet survey or hard copy handed questionnaires.

### 2.2 Measures

*Background variables* included data regarding sex, age, level of education, and physical health.

*Body Awareness* was assessed by two scales, according to the two facets of this quality; sensitivity to bodily signals, and attentiveness to these signals: *Sensitivity to bodily signals* was assessed by the Body Awareness Questionnaire (BAQ; Shields et al. 1989), which assesses sensitivity to bodily processes and the ability to detect small changes in functioning, and to anticipate bodily reactions to internal and environmental changes (e.g. "I notice differences in the way my body reacts to various foods", "I notice specific body responses to changes in the weather"). Respondents are asked to indicate, on a 7-point Likert scale, the extent to which each item is true for him or her. A higher mean score reflects higher sensitivity to bodily cues. Previous studies demonstrated the scale's validity and reliability (Shields et al. 1989). Cronbach alpha for the current sample was high (.87), indicating high reliability.

*Attentiveness to bodily signals* was assessed by an item adopted and adjusted from the Body Vigilance Scale (BVS; Schmidt et al. 1997), which is designed to assess the tendency of "consciously attending to internal cues" (Schmidt et al. 1997). More specifically, participants are asked: "On average, how much time do you spend each day "scanning" your body for sensations?" In the original item, three examples of such body sensations are added in brackets to the question, as followed: sweating, heart palpitations, dizziness. Since these examples may reflect a state of possible pathology and/or anxiety, these

examples were replaced by normative day-to-day sensations: respiratory rate, hunger, body posture, and body temperature. Individuals are asked to rate on a scale, ranging from 0 ("no time") to 100 ("all the time") the extent to which they tend to attend their body for such signals.

*Emotional clarity* was assessed using the short version of Clarity subscale from the Trait Mete Mood Scale (TMMS; Salovey et al. 1995). This 11- itemed scale assesses the extent to which the individual is capable to identify and distinguish his/her emotions, e.g. "I am rarely confused about how I feel" (reversed scored), "I am usually very clear about my feelings". Higher score reflects higher awareness to one's emotions. Previous studies yielded satisfactory reliability measures for this scale (Salovey et al. 1995). Cronbach alpha for the current sample was high (.87), indicating high reliability.

Two scales, according to its two components, were used to assess *mindfulness*: *Focusing attention on the present moment* was assessed by the Mindful Attention Awareness Scale (MAAS; Brown and Ryan 2003). This 15-items scale was designed to assess self-reported differences in dispositional consciousness to what is occurring at the present moment (e.g. "I find it difficult to stay focused on what's happening in the present", "I tend to walk quickly to get where I am going without paying attention to what I experience along the way"; reversed items). Participants are asked to indicate on a 6-point Likert scale the frequency in which they experience the situations mentioned in each item. Higher score reflects higher ability to focus attention on the present moment. Previous studies demonstrated the scale's validity and reliability (Brown and Ryan 2003). Cronbach alpha for the current sample was high (.85), indicating high reliability.

*Non-judging of experience* the second facet of mindfulness, which reflects openness to experience, *w*as assessed by the Non-Judging of Experience Scale (NJ), derived from the Five Factor Mindfulness Questionnaire (FFMQ: Baer et al. 2006). This scale contains 11 items, aimed to assess the extent to which the individual judges and reacts in criticism towards internal experiences such as thoughts, feelings and perception (e.g. "I criticize myself for having irrational or inappropriate emotions", "I tend to evaluate whether my perceptions are right or wrong"; reversed items) (Baer et al. 2006). Participants are asked to indicate on a 5-point Likert scale the extent to which these statements describe them well. Higher score reflects higher tendency to be non-judgmental towards one's experiences. Previous studies demonstrated the scale's validity and reliability (Baer et al. 2006). Cronbach alpha for the current sample was high (.88), indicating high reliability.

*Authentic behavior* was assessed by 14 items, derived from the 'Authentic living' subscale from Wood et al.'s Authenticity Scale (2008; 4 items), and 'Behavior Subscale' from the 'Authentic Inventory' (AI-3; Kernis and Goldman 2006; 10 items). Both scales were invented to examine an overall construct of authenticity, including varied aspects of this attribute, such as self-alienation, acceptance of external influence (Wood et al. 2008), awareness, and unbiased processing (Kernis and Goldman 2006). Since this study aimed to examine authentic *behavior*, only one subscale from each of the scales was administered, i.e. the scale referring to authentic behavior. To examine the construct of the combined two subscales, an exploratory factor analysis (EFA) was conducted. The EFA revealed a 2-factor solution, explaining 44.02 % of the total variance of authentic behavior. The first factor, reflecting behavior in accordance with subjective values, beliefs, and needs, included 9 items such as "I find that my behavior typically expresses my values", "I always stand by what I believe", and "I am willing to endure negative consequences by expressing my true beliefs about things". This factor, referred to as intrapersonal-authenticity, explained 25.91 % (Eigenvalue = 3.63) of the variance of authentic behavior. The second factor reflected authentic behavior in means of the degree to which behavior is

subjected to the wishes and needs of other people, included 5 items such as "I spend a lot of energy pursuing goals that are very important to other people even though they are unimportant to me", "I've often done things that I don't want to do merely not to disappoint people", and "I am willing to change myself for others if the reward is desirable enough". This second factor, referred to as interpersonal-authenticity, explained 18.12 % (Eigenvalue = 2.54) of the variance of authentic behavior. Reliability testing for these two new subscales indicated their validity; Cronbach alpha for the intrapersonal-authenticity subscale was .81, and for the interpersonal-authenticity .70. A moderate correlation was found between the two authentic behavior subscales ($r = .46$; $p < .001$), indicating that they reflect related, yet different qualities.

### 2.3 Data Analysis

In order to examine the association between body awareness and emotional clarity (Hypothesis 1), Pearson correlations were conducted. Further, a simultaneous linear regression model was conducted, examining the unique contribution of each of the two body awareness components (sensitivity and attentiveness) and the interaction between them to the variance of emotional clarity, when controlling for age and sex. All predictors were centered before they were entered into the multiple regression analysis, as suggested by Kraemer and Blasey (2004).

Two methods were used to examine Hypotheses 2 and 3. First, the complete model was examined using Structural Equation Modeling (SEM) analysis with the partial least squares (PLS) estimation techniques via WarpPLS version 4.0 (Kock 2014). The paths in the model were tested for significance using the bootstrapping procedure, with 100 cases of resampling incorporated in WarpPLS. This method was used to examine the study's hypotheses within a unified model. Further, this examination allowed the use of latent variables, which enabled the examination of associations between the study's constructs that were encompassed by two components (i.e. body awareness, and mindfulness), or factors (authentic behavior) while still referring to them as a unified construct (Kock 2014; Woodside 2014). The WarpPLS model fit indices include average path coefficient (APC), and average R-squared (ARS) that should both be under 2, and statistically significant. Further, an average variance inflation factor (AVIF) indices is acceptable if smaller than 5, and ideally smaller than 3.3.

Second, SPSS version 21 was also used to examine the hypotheses using Linear Regression analysis. This analysis enabled an examination of the differentiated associations between the different components of the model, while maintaining control of the shared variance. Thus, two separated linear hierarchical regression models were conducted, predicting the two facets of authentic behavior; intrapersonal-authenticity, and interpersonal-authenticity. The first stage of the regression analyses examined the unique contribution of awareness measures (sensitivity, attentiveness, emotional clarity, and their interactions), to the explained variance of authentic behavior, after controlling for demographic variables (age and sex). The two mindfulness components, i.e. focusing attention, and non-judging, and the interaction between them, were entered into the regression model in the second stage. To test whether mindfulness moderated the association between the awareness measures and authentic behavior, the interactions between mindfulness and body awareness and emotional clarity were entered in the third and last stage.

A series of Kolmogorov–Semirnov test for normality of distribution were conducted prior to the regression analyses, indicating that all variables are normally distributed,

except of attentiveness to bodily signals. Further analyses indicated that this effect results from a certain degree of skewness, therefore attentiveness was log-transformed prior to the regression model. In addition, all predictors were centered before they were entered into the multiple regression analysis. To ascertain the source of the moderation effects found in the regression analysis, we applied PROCESS procedures for probing 2- and 3-way interactions, as implemented by SPSS Macro of Hayes (2012), and by using the Johnson–Neyman technique for probing interactions. This procedure identifies specific regions in the range of the moderator where the effect of the independent variable on the dependent variable is significant. Using the procedure, the direction of the moderation (positive or negative effect), its power/intensity, and the levels of the moderator in which this effect occurs is apparent (Hayes and Matthes 2009). PROCESS procedure for testing multiple mediation effects implemented by SPSS Macro (Preacher and Hayes 2008) was further used to ascertain the mediation effects found in the regression analysis, using the Omnibus test for direct and indirect effects, and the Bootstrap confidence intervals test for indirect effects (Preacher and Hayes 2008).

## 3 Results

### 3.1 Body Awareness and Emotional Clarity

Pearson correlations revealed that the two body awareness measures (i.e. sensitivity and attentiveness) were positively correlated ($r = .44$; $p < .001$). Further correlations indicated that Hypothesis 1 was partially supported: Emotional clarity was significantly correlated with sensitivity to bodily signals ($r = .29$; $p < .001$). However, emotional clarity was not correlated with attentiveness to bodily signals ($r = .06$; NS).

To further test these associations, a linear regression analysis was conducted, examining the unique and cumulative contribution of sensitivity and attentiveness, to the explained variance of emotional clarity, after controlling for age and sex. The regression analysis revealed that age was positively associated with level of emotional clarity ($\beta = .23$; $SE = .01$; $p < .001$). In addition, one aspect of body awareness, i.e. sensitivity, had a significant positive effect on the shared variance of emotional clarity ($\beta = .27$; $SE = .04$; $p < .001$). The regression model explained 11 % of the variance of emotional clarity, indicating a significant regression model ($p < .001$). As indicated by the tolerance and VIF indices, these effects were not biased by multicollinearity.

### 3.2 Body Awareness, Emotional Clarity, Mindfulness, and Authenticity

As can be seen in Table 1, Pearson correlations indicated that the two mindfulness components were positively correlated. One mindfulness component, i.e. focusing attention, was found to have a significant correlation with sensitivity, and emotional clarity. The other mindfulness component, i.e. non-judging, was significantly correlated with emotional clarity, but not with body awareness. Intrapersonal-authenticity was positively correlated with one body awareness component, i.e. sensitivity, emotional clarity, and one mindfulness component, i.e. focusing attention. All study variables, except of attentiveness to bodily signals, were positively correlated with interpersonal-authenticity.

**Table 1** Means, SD, and Pearson correlations between sensitivity to bodily signals, attentiveness to bodily signals, emotional clarity, focusing attention on the present moment, non-judging of experience, intrapersonal-authenticity, and interpersonal-authenticity

| | Sensitivity to bodily signals | Attentiveness to bodily signals | Emotional clarity | Focusing attention | Non-judging of experience | Intrapersonal-authenticity | Interpersonal-authenticity |
|---|---|---|---|---|---|---|---|
| Sensitivity to bodily signals | 1 | .44*** | .29*** | .23*** | −.10 | .27*** | .11* |
| Attentiveness to bodily signals | | 1 | .06 | .07 | −.07 | .09 | .06 |
| Emotional clarity | | | 1 | .37*** | .34*** | .54*** | .38*** |
| Focusing attention | | | | 1 | .23*** | .22*** | .28*** |
| Non-judging of experience | | | | | 1 | .09 | .36*** |
| Intrapersonal-authenticity | | | | | | 1 | .46*** |
| Interpersonal-authenticity | | | | | | | 1 |
| Mean | 4.22 | 1.51 | 3.77 | 4.08 | 2.99 | 3.91 | 3.37 |
| SD | 1.11 | 0.37 | 0.68 | .87 | .86 | .54 | .74 |

* $p < .05$; ** $p < .01$; *** $p < .001$

### 3.2.1 PLS: SEM Analysis

As can be seen in Fig. 1, in line with Hypothesis 2, emotional clarity was significantly correlated with authentic behavior, and the association between body awareness and authentic behavior was marginally significant. Mindfulness was also significantly correlated with authentic behavior.

Further, the moderation hypothesis (Hypothesis 3) was partially supported. More specifically, the SEM analysis revealed that mindfulness moderated the association between body awareness and authentic behavior. However, mindfulness did not moderate the association between emotional clarity and authentic behavior, demonstrating that this association is direct and is rather not conditioned by mindfulness.

The whole model demonstrated good fit to the data for APC = .16 ($p < .001$), ARS = .30 ($p < .001$), and AVIF = 1.2.

### 3.2.2 Regression Analyses

Two separated simultaneous linear hierarchical regression analyses were conducted to test the unique and cumulative contribution of body awareness, emotional clarity, mindfulness, and their interactions, to the variance of intrapersonal-authenticity, and interpersonal-authenticity, while controlling for sex and age.

### 3.2.3 Intrapersonal-Authenticity

The regression analysis indicated that only emotional clarity was significantly associated with intrapersonal-authenticity ($\beta = .53$; $p < .001$), explaining 25 % of the variance of intrapersonal-authenticity [$F(18,308) = 6.62$; $p < .001$]. That is, the higher the level of emotional clarity, the higher the level of intrapersonal-authenticity. These results adhere to the hypothesized association between emotional clarity and authentic behavior (Hypothesis 2). However, all other variables and the interactions between them, did not contribute significantly to intrapersonal-authenticity.

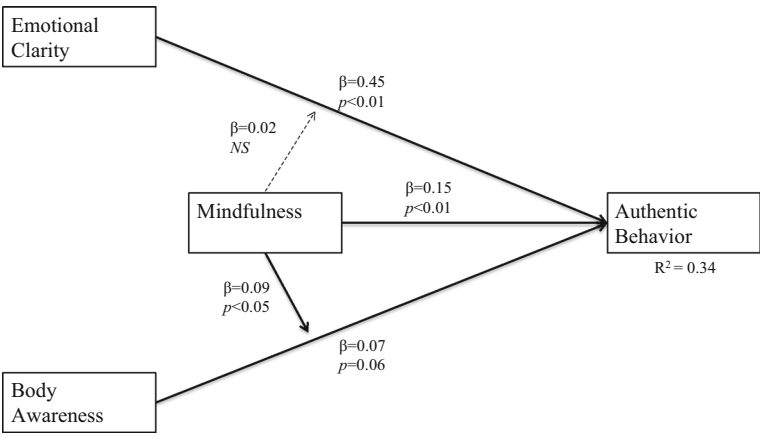


**Fig. 1** SEM analysis for predicting authentic behavior

**Table 2** Regression model for predicting interpersonal-authenticity

| | Beta | SE | LL 95 % CI | UL 95 % CI |
|---|---|---|---|---|
| *Stage 1* | | | | |
| Sex | .05 | .10 | −.10 | .27 |
| Age | .17** | .01 | .01 | .04 |
| Sensitivity to bodily signals | −.04 | .04 | −.11 | .05 |
| Attentiveness to bodily signals | .10 | .12 | −.04 | .44 |
| Emotional clarity | .39*** | .07 | .29 | .56 |
| Sensitivity × Attentiveness | .02 | .10 | −.16 | .22 |
| Sensitivity × Emotional clarity | −.08 | .07 | −.20 | .06 |
| Attentiveness × Emotional clarity | −.01 | .19 | −.40 | .34 |
| Sensitivity × Attentiveness × Emotional clarity | −.18* | .12 | −.54 | −.06 |
| | $R^2$ change = .14 | F = 6.73 | | |
| *Stage 2* | | | | |
| Sex | .05 | .09 | −.08 | .27 |
| Age | .13* | .01 | .003 | .03 |
| Sensitivity to bodily signals | −.01 | .04 | −.09 | .07 |
| Attentiveness to bodily signals | .10 | .12 | −.04 | .41 |
| Emotional clarity | .24*** | .07 | .13 | .40 |
| Sensitivity × Attentiveness | −.002 | .09 | −.18 | .17 |
| Sensitivity × Emotional clarity | −.10 | .06 | −.21 | .03 |
| Attentiveness × Emotional clarity | .03 | .18 | −.27 | .43 |
| Sensitivity × Attentiveness × Emotional clarity | −.20** | .12 | −.56 | −.11 |
| Focusing attention on the present moment | .15** | .05 | .04 | .22 |
| Non-judging of experience | .30*** | .05 | .17 | .37 |
| Focusing attention × Non-judging | .05 | .05 | −.06 | .14 |
| | $R^2$ change = .10 | F = 9.14 | | |
| *Stage 3* | | | | |
| Sex | .07 | .09 | −.05 | .30 |
| Age | .14* | .01 | .004 | .03 |
| Sensitivity to bodily signals | .03 | .04 | −.06 | .10 |
| Attentiveness on bodily signals | .06 | .12 | −.10 | .35 |
| Emotional clarity | .20** | .07 | .09 | .36 |
| Sensitivity × Attentiveness | .02 | .09 | −.14 | .22 |
| Sensitivity × Emotional clarity | −.14 | .07 | −.26 | .01 |
| Attentiveness × Emotional clarity | .06 | .21 | −.27 | .57 |
| Sensitivity × Attentiveness × Emotional clarity | −.19** | .12 | −.54 | −.08 |
| Focusing attention to the present moment | .16** | .05 | .04 | .23 |
| Non-judging of experience | .32*** | .05 | .19 | .39 |
| Focusing attention × Non-judging | .11 | .06 | −.01 | .22 |
| Sensitivity × Focusing | .22** | .05 | .05 | .23 |
| Sensitivity × Non-judging | .01 | .05 | −.10 | .11 |
| Attentiveness × Focusing | −.17* | .13 | −.60 | −.07 |
| Attentiveness × Non-judging | .07 | .15 | −.15 | .45 |

**Table 2** continued

| | Beta | SE | LL 95 % CI | UL 95 % CI |
|---|---|---|---|---|
| Emotional clarity × Focusing | −.08 | .08 | −.24 | .07 |
| Emotional clarity × Non-judging | −.09 | .07 | −.26 | .03 |
| | $R^2$ change = .02 | F = 7.12 | | |

* $p < .05$; ** $p < .01$; *** $p < .001$

### 3.2.4 *Interpersonal-Authenticity*

Table 2 presents the regression coefficients for predicting interpersonal-authenticity. The regression model explained 26 % of the variance of interpersonal-authenticity [$F(18,308) = 7.12$; $p < .001$]. As indicated by the tolerance and VIF indices, these effects were not biased by multicollinearity.

As can be seen in stage 1, in partial support of Hypothesis 1, emotional clarity was positively associated with interpersonal-authenticity, while neither facets of body awareness contributed significantly. In addition, a significant three-way interaction was found between sensitivity, attentiveness, and emotional clarity. To interpret this interaction, a PROCESS procedure was computed. As can be seen in Fig. 2, this computation revealed that emotional clarity had the highest effect on interpersonal-authenticity within low levels attentiveness and high levels of sensitivity, while the lowest effect was found within high levels of both sensitivity and attentiveness to bodily signals ($p < .05$).

In stage 2, the two mindfulness components (i.e. focusing attention, and non-judging) and the interaction between them, were entered to the regression model (see stage 3, Table 2). As can be seen, both mindfulness components contributed significantly to the shared variance of authenticity. The inclusion of these two mindfulness components markedly decreased the association between emotional clarity and interpersonal-authenticity. To test which of these two variables had a mediation effect on this association, we applied the multiple mediation tests (Preacher and Hayes 2008). This analysis revealed that both mindfulness components significantly mediated the association between emotional clarity and interpersonal-authenticity. The Omnibus test for direct and indirect effects showed a significant change in total $R^2$ when including the indirect effects to the model ($R^2$ for direct effect = .02; $p < .05$; $R^2$ for the total model = .24; $p < .001$). This change in $R^2$ indicates that the indirect effect of emotional clarity on interpersonal-authenticity through the two mediators is significant. Bootstrap confidence intervals (level of confidence = 90; number of samples used = 10,000) also indicated a significant mediation effect for the two mindfulness components, as they were both different from zero (CI for focusing attention effect = .01, .08; CI for non-judging = .08, .18). It should be considered, however, that the mediation effect of non-judging was stronger than the mediation effect of focusing attention (.12, and .05, respectively).

Finally, in the third stage, the interactions between body awareness and emotional clarity, and mindfulness, were entered into the regression model. This stage yielded two significant moderation effects, between focusing attention and sensitivity, and between focusing attention and attentiveness (Hypothesis 3). These interactions support the hypothesized moderated association between body awareness and authentic behavior by mindfulness.

To ascertain the source of these interactions, we applied the Johnson–Neyman technique for testing moderation effect (Hayes 2012; Hayes and Matthes 2009). First, we examined

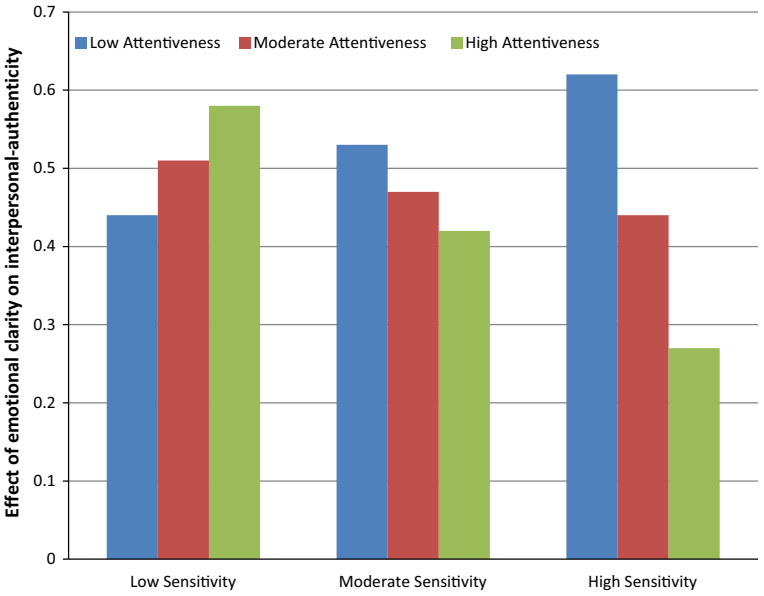


**Fig. 2** Conditional effect of emotional clarity on interpersonal-authenticity at values of sensitivity and attentiveness to bodily signals. Note: All effects are significant with $p < .05$

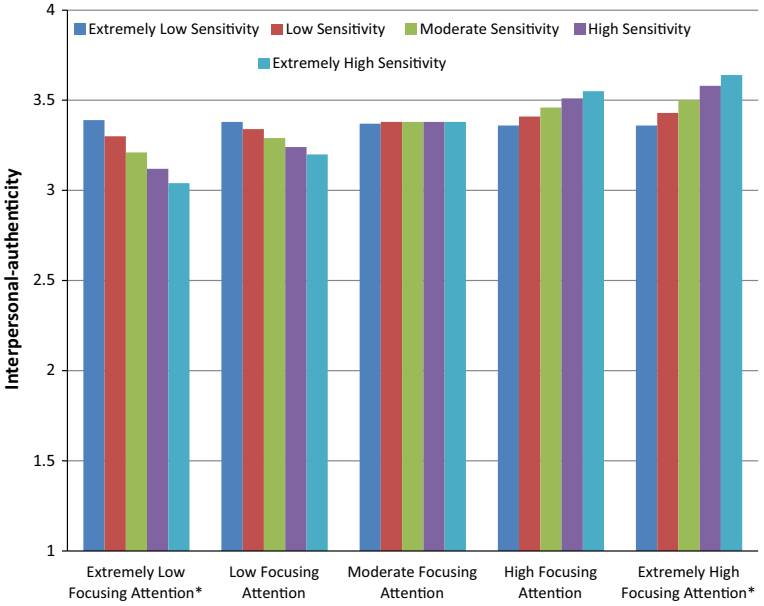


**Fig. 3** Interpersonal-authenticity levels as conditioned by sensitivity to bodily signals and focusing attention on the present moment. Note: *$p < .05$; **$p < .01$; ***$p < .001$

the significant interaction found between sensitivity and focusing attention to the shared variance of interpersonal-authenticity. The Johnson–Neyman technique yielded a significant moderation effect, demonstrating that within low levels of focusing attention (lower

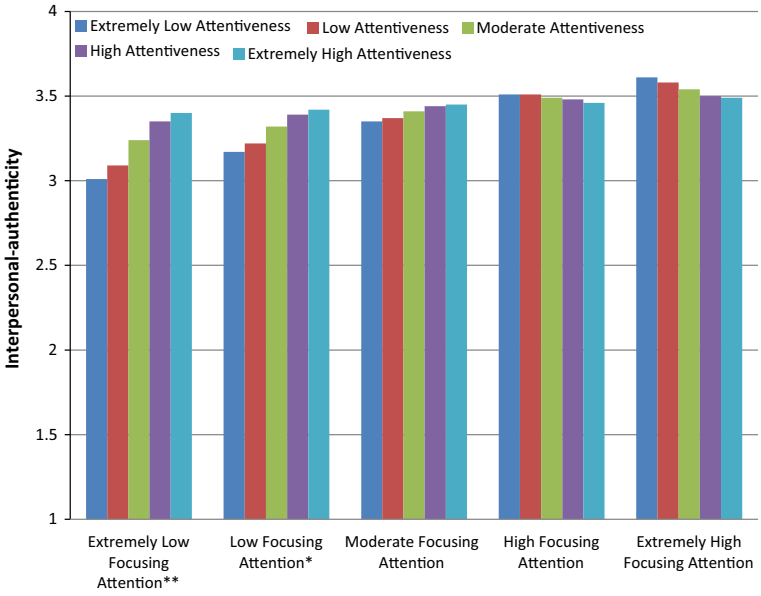


**Fig. 4** Interpersonal-authenticity levels as conditioned by attentiveness to bodily signals and focusing attention on the present moment. Note: $*p < .05$; $**p < .01$; $***p < .001$

than −1.12 as the value defined by the Johnson–Neyman significance region), higher levels of sensitivity significantly predicted lower levels of interpersonal-authenticity. Further, within high levels of focusing attention (higher than 1.46 as the value defined by the Johnson–Neyman significance region), higher levels of sensitivity significantly predicted higher levels of interpersonal-authenticity (see Fig. 3). The Johnson–Neyman technique for testing moderation effect (Hayes 2012; Hayes and Matthes 2009) was further applied to test the interaction between focusing attention and attentiveness. This analysis yielded a significant moderation effect, demonstrating that within lower levels of focusing attention (lower than −.59 as the value defined by the Johnson–Neyman significance region), higher levels of attentiveness predicted higher levels of interpersonal-authenticity (see Fig. 4).

## 4 Discussion

This study incorporated two different analyses to examine a hypothesized model that aimed to explain authentic behavior through emotional clarity, body awareness, and mindfulness. Taken together, the findings support the hypothesized association between emotional clarity and authentic behavior. Yet, the findings indicated that this association was not moderated by mindfulness, as hypothesized. Further, the two analytical methods partially supported the association between body awareness and authentic behavior, through the hypothesized moderation effect on this association was supported by both examinations.

The findings demonstrate an integrative view regarding self-knowledge processes and their relevance for authentic behavior. First, the findings indicate that body awareness and emotional clarity are positively associated. These findings support humanistic (Rogers

1961; Winnicott 1954) and neuropsychological (Craig 2010; Damasio et al. 2000) perspectives, suggesting that body awareness derives from the individual's sense of 'embodied self', that is, the extent to which his or her self integrates both the mind and body (Mehling et al. 2009, 2012). Individuals whose sense of body is integrated in their sense of self tend to perceive their body as a reliable informant of their emotional and somatic conditions. This capacity, attributed to the activity of the human insula, was suggested to result from an evolutionary pressure to achieve integration of bodily, environmental, and neural systems for the purpose of optimizing homeostatic efficiency (Craig 2002, 2010).

However, it should be considered that only one facet of body awareness, i.e. sensitivity, was found to be associated with emotional clarity. This pattern of findings may derive from the different underlying mechanisms of the two body awareness components. While attentiveness to bodily information refers to an *attentional* process by which the individual actively attenuates his/her attention towards bodily information (Hansell et al. 1991; Schmidt et al. 1997), sensitivity to bodily signals reflects a receptive ability to identify and differentiate subtle bodily sensations (Andersen 2006; Bekker et al. 2002; Shields et al. 1989), resonating in what is considered as proprioception and interoception (Cameron 2001). These essential differences can be concisely viewed through the direction of information transference, meaning that while attentiveness to bodily signals represents a top-down direction (Schmidt and Trakowski 1999), sensitivity reflects a bottom-up direction (Craig 2010). A close look on these differences brings out the similarity between sensitivity to bodily signals and emotional clarity, which both refer to an akin underlying process in regards to either bodily or emotional information (Salovey et al. 1995; Shields et al. 1989). It is thus postulated that a sense of an integrated embodied self, manifested here through the association between sensitivity to bodily signals and clarity of emotions, occurs on a receptive level, characterized by a bottom-up direction of attention.

The hypothesized model was examined in two different ways, i.e. as a unified model—assessing the effects of emotional clarity, body awareness, and mindfulness on the unified construct, and on the two differentiated facets of authentic behavior. As hypothesized, the findings of the unified model indicated that the association between body awareness and authentic behavior is moderated by mindfulness. This model illustrates the substantial direct role played by emotional clarity for the ability to act authentically. Body awareness, on the other hand, has only marginal direct contribution to authentic behavior, probably due to the moderation of mindfulness.

The findings demonstrated that the two facets of authentic behavior, i.e. interpersonal and intrapersonal authenticity are closely linked, but do not overlap. The first facet of authentic behavior, i.e. intrapersonal-authenticity, appears as the tendency to act in accordance with one's subjective values and beliefs in regards to individual conceptions about the world. According to our findings, this tendency is subjected solely to emotional clarity. The second facet of authentic behavior, i.e. interpersonal-authenticity, refers to the degree to which the individual's behavior is affected by what he or she believes is expected by him/her from others. This facet may somewhat recall social desirability (Stober 2001), or what is considered by Winnicott (1965) as 'false self'. This interpretation corresponds with the tripartite person-centered model of authenticity (Wood et al. 2008), accordingly the ability to behave authentically is substantially dependent on the level to which one accepts external influence from social environment, referred to as the 'accepting external influence' aspect of authenticity (Wood et al. 2008). Future research should examine the possible links between current conceptualization and the person-centered conceptualization of authentic behavior and the mechanisms that underlie it.

Further, the current findings suggest that the two authentic behavior facets reflect a different process. Unlike intrapersonal-authenticity, our findings indicate that interpersonal-authenticity is subjected to a complicated set of associations, which includes the individual's awareness or clarity of bodily and emotional experiences, the orientation towards them (i.e. mindfulness), and the interactions between these constructs. These different patterns of relations for the two authentic behavior aspects may act for the level of complexity of these qualities. While intrapersonal-authenticity represents an idiosyncratic, self-related knowledge, interpersonal-authenticity is based on a combination of understanding the self in a relational context, which may act for different mechanisms (Lenton et al. 2013). More specifically, interpersonal-authenticity requires capabilities that are not essential for intrapersonal-authenticity, such as sensitivity to other's wishes and demands, an ability to notice subjective wishes, even when they may contradict other's, and then an ability to navigate behavior in accordance to these sometimes conflicted demands of self and others. According to Rogers (1959), ongoing disapprovement of the individual's experiences by significant others may supersede the wish to satisfy organismic experience, and the individual sweeps away awareness and attention from subjective needs. In other words, awareness to organismic experiences is associated with compliance to subjective wishes as opposed to espousing behavior that is tailored primarily to other's wishes and beliefs. From a psychodynamic scope, it is suggested that the formation of the sense of 'I' molds within two paralleled and closely related processes. One is a relationship, which is at first integrated, and only later on encompasses two distinctive subjects (mother and infant) (Ogden 1985; Winnicott 1960). The second is a process that comprehends the infant's realization of his or her borders of the actual physical body, which later on forms subjectivity of bodily experiences (Freud 1920; Winnicott 1954). Therefore, it is postulated that this inherent link between bodily experiences and interpersonal relationship, as two fundamental ingredients of self-formation, are reflected here through the association between body awareness and interpersonal-authenticity. In support of this view are previous finding demonstrating an association between attachment security and the ability to act authentically (Lopez et al. 2015). Taken together, this perspective offers a scope of understanding as to how body awareness plays part in the construction of behavior in an interpersonal context.

However, the current findings indicate that the association between body awareness and authentic behavior is not direct, and rather manifested in complicated interactions with emotional clarity and orientation. Regarding the unified authentic behavior construct, the findings demonstrated that its association with body awareness is moderated by mindfulness. The second examination, where the different facets of body awareness and authentic behavior were measured separately, pointed to specific mechanisms under which this association operates. First, only one mindfulness component, i.e. focusing attention, was found to moderate the association between body awareness and interpersonal-authenticity. While the two facets of body awareness were both moderated by the same construct, this moderation effect operated differently, emphasizing once again the different mechanisms that underlie the two body awareness components. Regarding sensitivity, the moderation effect demonstrates that the adaptivity of sensitivity is conditioned by the orientation towards the information captured through it. In other words, sensitivity to bodily signals contributes to interpersonal-authenticity in cases where the individual is able to focus attention on the present, whereas when this ability is rather low, higher sensitivity predicts lower interpersonal-authenticity, and is rather maladaptive. Cioffi (1991), suggested that dispositions, goals, affects, and motivations, as well as prior hypotheses, all play a role in the way bodily information is interpreted and addressed on emotional and behavioral matter. Schattner and Shahar (2011) postulated that within the purpose of actualizing a desired self, chronic bodily sensations may

become personalized and internalized as an object within inner sphere. Pending on the attributes that are attached to the personified bodily experience, and the way it corresponds with the self, are likely to affect the person's well-being, and ability to adapt (Schattner and Shahar 2011; Shahar and Lerman 2013). Taken together, these explanations emphasize the pivotal role of orientation towards bodily experiences for the adaptive use of bodily signals. Together with our findings, these understandings provide an explanation for the conflicting findings found in previous studies in regards to the association between sensitivity to bodily signals and well-being outcomes (for further expansion, see Ginzburg et al. 2014).

The moderation effect of focusing attention on the present moment on the association between attentiveness to bodily signals and interpersonal-authenticity, points to the possibility of a compensatory mechanism, by which high levels of either focusing attention or lower level of focusing attention, but higher levels of attentiveness, both predict higher levels of interpersonal-authenticity. In other words, an attenuation of attention towards bodily information may compensate a weak ability to focus attention on the present moment. Thus, individuals who tend to have lower levels of focusing attention on the present, and also tend to disconnect from their bodily experiences (i.e. low levels of attentiveness), lack an important subjective source of information to enhance interpersonal-authenticity. This compensation mechanism may be understood in light of the conceptual similarities between attentiveness and focusing attention, as both reflect an active quality of attention, characterized by a subjective object of attention (Brown and Ryan 2003; Schmidt et al. 1997). Finally, it seems that attentiveness serves as a sub-specification of focusing attention, specified to subjective bodily experience.

Another indication of the complicated mechanisms that underlie the association between body awareness and interpersonal-authenticity was evident by the finding that body awareness interacts within the association between emotional clarity and interpersonal-authenticity. According to the three-way interaction found between these constructs, emotional clarity is associated with interpersonal-authenticity in all levels of sensitivity and attentiveness to bodily signals. Yet, the weakest association was found in cases of high sensitivity and high attentiveness, and the strongest effect was found within individuals who obscure high levels of one of the two body awareness components, and low levels of the other. These findings may imply two sub-groups of individuals; the first, the 'body-oriented; characterized by high levels of both sensitivity and attentiveness to bodily signals, tend to rely on bodily information to enhance interpersonal-authenticity. The second sub-group is characterized by high levels of one of the body awareness components, and low levels of the other (i.e. high monitoring and low sensitivity and vice versa). Individuals of this sub-group demonstrate a strong effect of emotional clarity on interpersonal-authenticity, which may exemplify an embodied ability to use both bodily and emotional information for behavior enhancement. This combined knowledge enables these individuals to act authentically on an interpersonal level.

Our findings indicate that mindfulness intervenes in the association between emotional clarity and interpersonal-authenticity, yet different from how it operates within body awareness processes. More specifically, the two mindfulness components were found to mediate the association between emotional clarity and interpersonal-authenticity. While these mediation effects were not included in our hypothesized model, they are in line with other findings showing that emotional clarity is associated with mindfulness (Hill and Updegraff 2012), and that mindfulness is associated with authenticity (Carson and Langer 2006; Lakey et al. 2008). Thus, the current findings contribute to an understanding of these associations, suggesting a combined mechanism by which emotional clarity contributes to level of mindfulness, which in turn enhances level of interpersonal-authenticity. In sum, the current findings support the pivotal role of awareness to emotional processes for

adaptive behavior. However, while behavior in terms of intrapersonal-authenticity is directly associated with this ability, interpersonal-authenticity is subjected to a more complicated process, which includes the orientation towards subjective experiences. In other words, this association is demonstrated as composed by an awareness-orientation-behavior sequence. Pending on additional empirical support, this interpretation requires further elaboration of our theoretical model.

Taken together, it should be considered that both interpersonal and intrapersonal authenticity are expected to be equally significant for the ability to act authentically. While the current findings did not point to an association between bodily aspects of awareness (i.e. body awareness) and intrapersonal-authenticity, the relation between these constructs deserves further examination. This is supported by the unified model in the current study, which pointed to a marginally significant association between body awareness and the unified model,

The current findings suggest a few practical guidelines for designing interventions. First, while the ability to locate and understand one's emotional experiences for this purpose has long been acknowledged (Salovey et al. 1995), the current findings point to the need to enrich the ability to attend and locate the normal day-to-day signals that come from inner-bodily sensations. More specifically, the findings suggest that the body and the awareness to its experiences is relevant for enabling adaptive behavior. However, the findings emphasized that this awareness alone is not enough, but rather, needs to be accompanied by an open, and non-judging orientation towards present moment experiences, i.e. mindfulness. Thus, interventions that aim to enable self-knowledge and authentic behavior should direct more attention to the combination of orientation and awareness towards bodily signals. Further, increasing emotional clarity is suggested to be relevant not only for authentic behavior, but also for body awareness, as these two attributes were found to be associated.

### 4.1 Limitations

The findings of this study should be considered in light of its limitations. Two reservations derive from the reliance on self-report questionnaires. First, using self-reported data is based on the assumption that the tested variables are conscious processes on which individuals can report. Although all variables were measured by highly acceptable and widely used questionnaires, one must take into consideration that they represent the perceived quality, and not an objective entity. Another reservation relates to the fact that attentiveness to bodily signals was measured by a single-item scale. Although previous studies have provided evidence that indicate that well-designed single item scales are not inferior to multiple-item questionnaires with regard to their validity (see Gardner et al. 1998), the applicability of this evidence to the assessment of attentiveness needs further support. Finally, due to the convenience sampling procedure which prevents from evaluating response rate and the representativeness of the sample and the cross-sectional design, readers should be cautious in generalizing the results or concluding causal relationships.

## 5 Conclusion

Humanistic and developmental ideas long ago emphasized the importance of self-knowledge in terms of bodily and emotional information to enhance growth and well-being (Rogers 1961, 1964; Winnicott 1954, 1960). The current research findings support this

point of view, while indicating that these processes are complicated, intertwined, and conditioned by a few factors. More specifically, the findings indicated that sensitivity to emotional and bodily experiences are interrelated and both are implicated in authentic behavior. Yet, each of these components is differently linked to this attribute: While emotional clarity plays a substantial role in both intrapersonal- and interpersonal-authenticity, body awareness contributes only to interpersonal-authenticity and this effect is moderated by mindfulness. Further empirical attention is needed to better clarify the ingredients that comprise these processes and the mechanism under which they operate to enhance authentic behavior.

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## References

Andersen, R. (2006). Body intelligence scale: Defining and measuring the intelligence of the body. *The Humanistic Psychologist, 34*(4), 357–367.

Anicha, C. L., Ode, S., Moeller, S. K., & Robinson, M. D. (2012). Toward a cognitive view of trait mindfulness: Distinct cognitive skills predict its observing and nonreactivity facets. *Journal of Personality, 80*(2), 255–285.

Augusto-Landa, J. M., Pulido-Martos, M., & Lopez-Zafra, E. (2011). Does perceived emotional intelligence and optimism/pessimism predict psychological well-being? *Journal of Happiness Studies, 12*(3), 463–474.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*(1), 27–45.

Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (1994). The twenty-item Toronto Alexithymia scale: 1. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research, 38*(1), 23–32.

Barsky, A. J., Wyshak, G., & Klerman, G. L. (1990). The somatosensory amplification scale and its relationship to hypochondriasis. *Journal of Psychiatric Research, 24*(4), 323–334.

Bekker, M. H. J., Croon, M. A., & Vermaas, S. (2002). Inner body and outward appearance—The relationship between orientation toward outward appearance, body awareness and symptom perception. *Personality and Individual Differences, 33*(2), 213–225.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well being. *Journal of Personality and Social Psychology, 84*(4), 822–848.

Cameron, O. G. (2001). Interoception: The inside story—A model for psychosomatic processes. *Psychosomatic Medicine, 63*(5), 697–710.

Carson, S. H., & Langer, E. L. (2006). Mindfulness and self-acceptance. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 24*(1), 29–43.

Cioffi, D. (1991). Beyond attentional strategies: A cognitive perceptual model of somatic interpretation. *Psychological Bulletin, 109*(1), 25–41.

Coffey, E., Berenbaum, H., & Kerns, J. G. (2003). The dimensions of emotional intelligence, alexithymia, and mood awareness: Associations with personality and performance on an emotional stroop task. *Cognition and Emotion, 17*(4), 671–679.

Craig, A. D. (2002). How do you feel? Interoception: The sense of the physiological condition of the body. *Nature Reviews Neuroscience, 3*(8), 655–666.

Craig, A. D. (2003). Interoception: The sense of the physiological condition of the body. *Current Opinions in Neurobiology, 13*(4), 500–505.

Craig, A. D. (2010). The sentient self. *Brain Structure and Function, 214*, 563–577.

Damasio, A. R. (2005). *Descartes' error: Emotion, reason, and the human brain* (Rev. ed.). New York: Penguin Books.

Damasio, A. R., Grabowski, T. J., Bechara, A., Damasio, H., Ponto, L. L., Parvizi, J., et al. (2000). Subcortical and cortical brain activity during the feeling of self-generated emotions. *Nature Neuroscience, 3*(10), 1049–1056.

Dryden, W., & Still, A. (2006). Historical aspects of mindfulness and self-acceptance in psychotherapy. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 24*(1), 3–28.

Fleeson, W., & Wilt, J. (2010). The Relevance of Big Five Trait content in behavior to subjective authenticity: Do high Levels of within-person behavioral variability undermine or enable authenticity achievement? *Journal of Personality, 78*(4), 1353–1382.

Freud, S. (1920). *A general introduction to psychoanalysis*. New York: Horace Liveright.

Gardner, D. G., Cummings, L. L., Dunham, R. B., & Pierce, J. L. (1998). Single-item versus multiple-item measurement scales: An empirical comparison. *Educational and Psychological Measurement, 58*(6), 898–915.

Ginzburg, K., Tsur, N., Barak-Nahum, A., & Defrin, R. (2014). Body awareness: Differentiating between sensitivity to and monitoring of bodily signals. *Journal of Behavioral Medicine, 37*(3), 564–575.

Gohm, C. L., & Clore, G. L. (2002). Four latent traits of emotional experience and their involvement in well-being, coping, and attributional style. *Cognition and Emotion, 16*(4), 495–518.

Goldman, B. M., & Kernis, M. H. (2002). The role of authenticity in healthy psychological functioning and subjective well being. *Annals of the American Psychotherapy Association, 5*(6), 18–20.

Gu, X., Liu, X., Van Dam, N. T., Hof, P. R., & Fan, J. (2012). Cognition–emotion integration in the anterior insular cortex. *Cerebral Cortex, 23*(1), 20–27.

Hafner, M. (2013). When body and mind are talking: Interoception moderates embodied cognition. *Experimental Psychology, 60*(4), 255–259.

Hansell, S., Sherman, G., & Mechanic, D. (1991). Body awareness and medical care utilization among older adults in an HMO. *Journals of Gerontology, 46*(3), S151–S159.

Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling (white paper). Retrieved from http://www.afhayes.com/public/process2012.pdf

Hayes, A. F., & Matthes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavior Research Methods, 41*(3), 924–936.

Heidegger, M. (1962). *Being & time*. London, England: SCM Press.

Herbert, B. M., Herbert, C., & Pollatos, O. (2011). On the relationship between interoceptive awareness and alexithymia: Is interoceptive awareness related to emotional awareness? *Journal of Personality, 79*(5), 1149–1175.

Hill, C. L. M., & Updegraff, J. A. (2012). Mindfulness and its relationship to emotional regulation. *Emotion, 12*(1), 81–90.

Johanson, G. J., & Dapa, F. (2006). The use of mindfulness in psychotherapy. *Annals of the American Psychotherapy Association, 9*(2), 15–24.

Kabat-Zinn, J. (2003). Mindfulness-based stress reduction (MBSR). *Constructivism in the Human Sciences, 8*, 73–107.

Kernis, M. H., & Goldman, B. M. (2006). A multicomponent conceptualization of authenticity: Theory and research. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 38, pp. 283–357). New York: Academic Press.

Kernis, M. H., & Heppner, W. L. (2008). Individual differences in quiet ego functioning: Authenticity, mindfulness, and secure self-esteem. In H. A. Wayment & J. J. Bauer (Eds.), *Transcending self-interest: Psychological explorations of the quiet ego. Decade of behavior* (pp. 85–93). Washington, DC: American Psychological Association.

Kock, N. (2014). Using data labels to discover moderating effects in PLS-based structural equation modeling. *International Journal of e-Collaboration, 10*(4), 1–14.

Kraemer, H. C., & Blasey, C. M. (2004). Centering in regression analyses: A strategy to prevent errors in statistical inference. *International Journal of Methods in Psychiatric Research, 13*(3), 141–151.

Lakey, C. E., Kernis, M. H., Heppner, W. L., & Lance, C. E. (2008). Individual differences in authenticity and mindfulness as predictors of verbal defensiveness. *Journal of Research in Personality, 42*(1), 230–238.

Langer, E. J. (1992). Matters of mind: Mindfulness/mindlessness in perspective. *Consciousness and Cognition, 1*(3), 289–305.

Langer, E. J., & Moldoveanu, M. (2000). The construct of mindfulness. *Journal of Social Issues, 56*(1), 1–9.

Lenton, A. P., Bruder, M., Slabu, L., & Sedikides, C. (2013). How does "being real" Feel? The experience of state authenticity. *Journal of Personality, 81*(3), 276–289.

Levenson, R. W. (1992). Autonomic nervous system differences among emotions. *Psychological Science, 3*(1), 23–27.

Levenson, R. W. (1999). The intrapersonal functions of emotion. *Cognition and Emotion, 13*(5), 481–504.

Lopez, F. G., Ramos, K., Nisenbaum, M., Thind, N., & Ortiz-Rodriguez, T. (2015) Predicting the presence and search for life meaning: Test of an attachment theory-driven model. *Journal of Happiness Studies*, *16*, 103–116.

Maltby, J., Wood, A. M., Day, L., & Pinto, D. (2012). The position of authenticity within extant models of personality. *Personality and Individual Differences, 52*(3), 269–273.

Manjrekar, E., & Berenbaum, H. (2012). Exploring the utility of emotional awareness and negative affect in predicting body satisfaction and body distortion. *Body Image, 9*(4), 495–502.

Mayer, J. D., & Salovey, P. (1993). The intelligence of emotional intelligence. *Intelligence, 17*(4), 433–442.

Mehling, W. E., Gopisetty, V., Daubenmier, J., Price, C. J., Hecht, F. M., & Stewart, A. (2009). Body awareness: Construct and self-report measures. *PLoS ONE, 4*, e5614.

Mehling, W. E., Hamel, K. A., Acree, M., Byl, N., & Hecht, F. M. (2005). Randomized, controlled trial of breath therapy for patients with chronic low-back pain. *Alternative Therapies in Health and Medicine, 11*(4), 44–52.

Mehling, W. E., Price, C., Daubenmier, J. J., Acree, M., Bartmess, E., & Stewart, A. (2012). The multidimensional assessment of interoceptive awareness (MAIA). *PLoS One, 7*, e48230–e48230.

Ogden, T. H. (1985). On potential space. *The International Journal of Psychoanalysis, 66*, 129–141.

Ploghaus, A., Tracey, I., Gati, J. S., Clare, S., Menon, R. S., Matthews, P. M., et al. (1999). Dissociating pain from its anticipation in the human brain. *Science, 284*(5422), 1979–1981.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891.

Price, C. J., & Thompson, E. A. (2007). Measuring dimensions of body connection: Body awareness and bodily dissociation. *Journal of Alternative and Complementary Medicine, 13*(9), 945–953.

Rogers, C. (1959). A theory of therapy, personality, and interpersonal relationships, as developed in the client-centered framework. In H. Kirschenbaum & V. L. Henderson (Eds.), *The Carl Rogers reader* (pp. 409–420). Boston New York: Houghton Mifflin Company.

Rogers, C. (1961). A therapist's view of the good life: The fully functioning person. In H. Kirschenbaum & V. L. Henderson (Eds.), *The Carl Rogers reader* (pp. 409–420). Boston New York: Houghton Mifflin Company.

Rogers, C. (1964). Toward a modern approach to values: The valuing process in the mature person. In H. Kirschenbaum & V. L. Henderson (Eds.), *The Carl Rogers reader* (pp. 409–420). Boston: Houghton Mifflin Company.

Salovey, P., Mayer, P., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the trait meta-mood scale. In J. W. Pennebaker (Ed.), *Emotion, discloser and health* (pp. 125–154). Washington: American Psychological Association.

Schattner, E., & Shahar, G. (2011). Role of pain personification in pain-related depression: An object relations perspective. *Psychiatry: Interpersonal & Biological Processes, 74*(1), 14–20.

Schmidt, N. B., Lerew, D. R., & Trakowski, J. H. (1997). Body vigilance in panic disorder: Evaluating attention to bodily perturbations. *Journal of Consulting and Clinical Psychology, 65*(2), 214–220.

Schmidt, N. B., & Trakowski, J. H. (1999). Attentional focus and fearful responding in patients with panic disorder during a 35 % $CO_2$ challenge. *Behavior Therapy, 30*(4), 623–640.

Shahar, G., & Lerman, S. F. (2013). The personification of chronic physical illness: Its role in adjustment and implications for psychotherapy integration. *Journal of Psychotherapy Integration, 23*(1), 49–58.

Sheldon, K. M., Ryan, R. M., Rawsthorne, L. J., & Ilardi, B. (1997). Trait self and true self: Cross-role variation in the big-five personality traits and its relations with authenticity and subjective well being. *Journal of Personality and Social Psychology, 73*(6), 1380–1393.

Shields, S. A., Mallory, M. E., & Simon, A. (1989). The body awareness questionnaire: Reliability and validity. *Journal of Personality Assessment, 53*(4), 802–815.

Spoor, S. T., Bekker, M. H. J., Van Heck, G. L., Croon, M. A., & Van Strien, T. (2005). Inner body and outward appearance: The relationships between appearance orientation, eating disorder symptoms, and internal body awareness. *Eating Disorders, 13*(5), 479–490.

Stober, J. (2001). The Social Desirability Scale-17 (SDS-17): Convergent validity, discriminant validity, and relationship with age. *European Journal of Psychological Assessment, 17*(3), 222–232.

Sze, J. A., Gyurak, A., Yuan, J. W., & Levenson, R. W. (2010). Coherence between emotional experience and physiology: Does body awareness training have an impact? *Emotion, 10*(6), 803–814.

Werner, N. S., Kerschreiter, R., Kindermann, N. K., & Duschek, S. (2013). Interoceptive awareness as a moderator of affective responses to social exclusions. *Journal of Psychophysiology, 27*(1), 39–50.

Winnicott, D. W. (1954). Mind and its relation to the psyche-soma. *British Journal of Medical Psychology, 27*, 201–209.

Winnicott, D. W. (1960). The theory of the parent–infant relationship. In M. M. Khan (Ed.), *The maturational processes and the facilitating environment: Studies in the theory of emotional development.* Madison, Conn: International Universities Press.

Winnicott, D. W. (1965) Ego distortions in terms of true and false self. In M. M. Khan (Ed.), *The maturational processes and the facilitating environment: Studies in the theory of emotional development.* Madison, Conn: International Universities Press.

Winnicott, D. W. (1971). *Playing and reality*. London: Routledge.

Wood, A. M., Linley, P. A., Maltby, J., Baliousis, M., & Joseph, S. (2008). The authentic personality: A theoretical and empirical conceptualization and the development of the authentic scale. *Journal of Counseling Psychology, 55*(3), 385–399.

Woodside, A. G. (2014). Embrace perform model: Complexity theory, contrarian case analysis, and multiple realities. *Journal of Business Research, 67*, 2495–2503.

Yalom, I. D. (1980). *Existential psychotherapy*. New York: Basic Books.