

Running head: MENTALIZING, IDENTITY DIFFUSION AND INTERPERSONAL PROBLEMS  
IN BPD

1

Mentalizing and interpersonal problems in borderline personality disorder: The mediating role  
of identity diffusion

Celine De Meulemeester<sup>a</sup>, Benedicte Lowyck<sup>b\*</sup>, Rudi Vermote<sup>b</sup>, Yannic Verhaest<sup>c</sup> and  
Patrick Luyten<sup>a</sup>

<sup>a</sup> Faculty of Psychology and Educational Sciences, KU Leuven, Leuven, Belgium

<sup>b</sup> University Psychiatric Hospital UPC KU Leuven, Campus Kortenberg and Department of  
Neurosciences, Faculty of Medicine, KU Leuven, Leuven, Belgium

<sup>c</sup> University Psychiatric Hospital UPC KU Leuven, Campus Kortenberg, Belgium

*In press: Psychiatry Research*

\*Correspondence address:

## **Abstract**

Individuals with borderline personality disorder (BPD) are characterized by problems in interpersonal functioning and their long-term social integration often remains problematic. Extant theories have linked identity diffusion to many of the interpersonal problems characteristic of BPD patients. Recent theoretical accounts have suggested that identity diffusion results from problems with mentalizing or reflective functioning, that is, the capacity to understand oneself and others in terms of intentional mental states. In this study we tested these assumptions, i.e., whether identity diffusion plays a mediating role in the relationship between mentalizing difficulties and interpersonal problems, in a sample of 167 BPD patients. Highly significant correlations were found between mentalizing impairments, identity diffusion and interpersonal problems. Mediation analyses showed that identity diffusion fully mediated the relationship between mentalizing difficulties and interpersonal problems. This study provides preliminary evidence that impairments in mentalizing are related to identity diffusion, which in turn is related to interpersonal problems in BPD. Further longitudinal research is needed to further substantiate these conclusions.

**Keywords:** borderline personality disorder, mentalizing, reflective functioning, identity diffusion, interpersonal problems

## 1. Introduction

Borderline personality disorder (BPD) is a highly prevalent disorder characterized by emotional dysregulation, impulsivity and interpersonal difficulties. BPD is often comorbid with other mental illnesses and is related to high levels of self-harm and suicidality, resulting in large direct and indirect economic and personal costs (Black et al., 2004; Grant et al., 2008; Soeteman et al., 2008).

BPD patients often have considerable problems with *mentalizing* or *reflective functioning* (RF), i.e., the capacity to reflect on the internal mental states (e.g. feelings, wishes, attitudes and goals) of the self and others (Choi-Kain and Gunderson, 2008; Fonagy and Luyten, 2009). These problems are typically expressed in poor integration of mentalizing based on internal mental states (i.e., patients' capacity to think in a differentiated way about their own feelings, wishes and beliefs, and those of others), and mentalizing based on external features of self and others, such as facial emotional expressions. Indeed, for some time a paradox has been noted between the gross impairment in BPD patients' capacity to reflect on their own internal mental states and their apparent hypersensitivity to emotional states in others (Sharp and Vanwoerden, 2015).

This paradox is also thought to explain, at least in part, another core feature of BPD patients, namely their impairments in self-functioning, i.e., in problems with identity or self-directedness, also described as identity diffusion (American Psychiatric Association, 2013). Both descriptive and theoretical approaches to BPD consider identity disturbance to be a central characteristic of BPD (Jørgensen, 2006, 2010; Jørgensen et al., 2009; Sollberger et al., 2012, 2015). In DSM-5, for instance, identity disturbance is seen as a central diagnostic feature of BPD (American Psychiatric Association, 2013). Similarly, in psychodynamic approaches, identity diffusion is seen as one of the core defining features of BPD. Kernberg's (1976) work has been instrumental in this respect, defining identity diffusion in the context of

his theory of personality organization as the consolidation of disordered and unintegrated representations of the self and of others (Kernberg, 2006).

Consistent with these assumptions, empirical studies have found high levels of identity diffusion in personality disorder patients in general (Modestin et al., 1998; Morey et al., 2011; Sollberger et al., 2012) and in BPD patients in particular (Clarkin et al., 1993; De Bonis et al., 1995; Jørgensen et al., 2009; Meares et al., 2011; Wilkinson-Ryan and Westen, 2000). Higher levels of identity diffusion in BPD have been associated with greater symptom severity (Sollberger et al., 2012) and less favorable treatment outcomes (Hull et al., 1993).

Furthermore, identity diffusion is thought to explain many of the interpersonal problems that BPD patients typically experience. Identity diffusion is fundamentally characterized by problems with self–other boundaries, which may also be expressed in binary thinking (e.g., either extremely positive or extremely negative) about self and others, leading to the typical turbulent relationships of BPD patients. This idea is supported by empirical studies that have found high correlations between identity diffusion and interpersonal problems in BPD (Lowyck et al., 2013; Sollberger et al., 2012).

From a mentalizing perspective, identity diffusion is linked to impairments in mentalizing (Fonagy et al., 2004; Fonagy and Target, 1997). From this perspective, our sense of self-coherence (i.e., the sense that one’s thoughts and behavior have continuity and consistency) is conceptualized as an illusion (Bargh, 2014) that is the product of our capacity for mentalizing. It is presumed that the ability to experience one’s own behavior as being driven by intentional mental states contributes to a sense of agency and autonomy, and that thinking about the mental states of others as being separate from one’s own contributes to the ability to maintain boundaries between the self and others (Jørgensen, 2010). Thus, from a mentalizing perspective, impairments in mentalizing are thought to give rise to identity

diffusion, which in turn may explain some of the characteristic interpersonal problems associated with BPD.

However, to date, only one study has systematically investigated these assumptions. In a study in personality disordered patients, Fonagy et al. (2016) found that impairments in RF, as measured with the Reflective Functioning Questionnaire (RFQ), was highly positively related to identity diffusion as measured with the Inventory of Personality Organization (IPO). However, this study included a mixed sample of personality disordered patients, and thus did not focus specifically on BPD patients. Furthermore, it did not directly investigate the purported association between identity diffusion, mentalizing, and interpersonal functioning.

The present study aims to further our understanding of the relationship between RF, identity diffusion, and interpersonal problems in BPD patients. We investigated, in a sample of 176 BPD patients, whether impairments in mentalizing as measured with the RFQ were related to identity diffusion as measured with the IPO, and whether identity diffusion in turn mediated the relationship between impairments in mentalizing and interpersonal problems as measured by the Inventory of Interpersonal Problems (IIP).

## **2. Methods**

### **2.1. Participants and procedures**

This study is part of a larger, ongoing study on the nature of personality pathology conducted at the University Psychiatric Centre KU Leuven in Kortenberg, Belgium, between July 2010 and April 2014. During this period, 207 patients consecutively admitted to an intensive psychodynamic hospitalization-based treatment for personality disorders were included in the study. Inclusion criteria were (a) a principal diagnosis of personality disorder made by an experienced psychiatrist and (b) Dutch literacy. Individuals with an acute psychotic episode, severe addictions, or antisocial personality disorder were excluded. Because the focus of the

current study was BPD, we selected only patient who fulfilled criteria for DSM-IV-defined BPD (American Psychiatric Association, 2000) based on the self-report questionnaire of the Structured Clinical Interview for DSM-IV Axis II disorders (SCID-II) (i.e., scores  $\geq 5$ ). This resulted in a sample of 176 BPD patients. Demographic features are reported in Table 1.

The study was approved by the ethical committee of KU Leuven, Belgium. For each participant, after a research assistant explained the study and obtained informed consent, measures were administered via a computer. While completing the measures, participants could take a pause if required.

## **2.2. Measures**

### **2.2.1. Identity diffusion**

Identity diffusion was assessed with the IPO (Kernberg and Clarkin, 1995), a self-report questionnaire that assesses three key concepts derived from Kernberg's theory of personality development (Kernberg, 1976). The present study used only the identity diffusion subscale of the IPO, comprising 21 items answered on a 5-point Likert scale. The IPO has psychometric quality as established by studies in both clinical and non-clinical samples (Berghuis et al., 2009; Lenzenweger et al., 2001). Cronbach's alpha of the identity diffusion subscale of the IPO in the current study was 0.86.

### **2.2.2. Reflective functioning**

The RFQ (Fonagy et al., 2016) is a self-report measure of RF including eight items that are answered on a 6-point Likert scale, ranging from 1 (*I do not agree at all*) to 6 (*I very much agree*). The six items of the RFQ\_Uncertainty (RFQ-U) scale are rescored so that high scores reflect extreme uncertainty about mental states, assumed to reflect hypomentaling. The

RFQ\_Certainty (RFQ-C) scale contains six items that are also rescored to capture extreme levels of certainty that are assumed to be indicative for hypermentalizing.

While the RFQ-U scale has been consistently positively related to other measures assessing impairments in mentalizing (such as alexithymia) and to measures of personality pathology, findings with the RFQ-C scale suggest that it taps into both adaptive and maladaptive features of mentalizing. For example, the RFQ-C scale has been shown to be positively related to eating disorder symptoms, but also to empathy, and negatively to alexithymia (Badoud et al., 2015; Fonagy et al., 2016). Because the meaning of the RFQ-C scale is less clear, the current study focuses primarily on the RFQ-U scale.

The internal consistency for RFQ-U was good, with a Cronbach's alpha of 0.77, and test-retest reliability over 3 weeks was very good ( $r = 0.84$ ) (Fonagy et al., 2016). The internal consistency of the RFQ\_U subscale in the current study was acceptable ( $\alpha=0.69$ ).

### **2.2.3. Interpersonal problems**

Interpersonal problems were assessed with the Inventory of Interpersonal Problems (IIP; Horowitz et al., 2000). The IIP is a self-report questionnaire comprising 64 items that are rated on a 5-point Likert scale. Respondents indicate whether they find different interpersonal behaviors hard to do or whether they do them too much; for example, "It is hard for me to take instructions from people who have authority over me". The average total score of all 64 items is used as an indicator of the general level of interpersonal problems experienced by the respondent. In the present study the IIP was highly reliable ( $\alpha=0.90$ ).

### **2.2.4. Psychiatric symptoms**

The Psychiatric Diagnostic Screening Questionnaire (PDSQ; Zimmerman and Mattia, 2001) is a self-report questionnaire consisting of 126 items that can be used to screen for common

DSM-IV Axis I psychiatric disorders. The psychometric quality of the PDSQ has been established in two large-scale validation studies (Zimmerman and Chelminsky, 2006; Zimmerman and Mattia, 2001). The PDSQ was found to be highly reliable in the present study ( $\alpha=0.96$ ).

### **2.2.5. Personality pathology**

Patients also completed a self-report version of the SCID-II (SCID-IIQ; First et al., 1997), which consists of 119 yes-or-no questions based on the diagnostic criteria of DSM-IV Axis II. A cutoff score can provide an estimation of the presence of different personality disorders. Ekselius et al. (1994) reported the correlation between the number of criteria fulfilled in SCID-II interviews or the SCID-II self-report to be  $r=0.84$ . Ouimette and Klein (1995) found a good test-retest reliability for the SCID-IIQ and in this study, the reliability of the SCID-IIQ was very good for the total scale ( $\alpha=0.89$ ) and acceptable for the borderline subscale ( $\alpha = 0.79$ ).

### **2.2.3. Data analysis**

Pearson correlations were computed to assess the relationship between identity diffusion and RF and their relationships to interpersonal problems. Next, mediation analyses were run using the PROCESS extension in SPSS (Hayes, 2013). All data were analyzed using IBM SPSS version 24.

## **3. Results**

### **3.1. Zero-order correlations**

As Table 2 shows, RFQ-U was highly significantly related to identity diffusion ( $r=0.61$ ,  $p<0.001$ , 95% CI [0.50; 0.69]) and interpersonal problems ( $r=0.41$ ,  $p<0.001$ , 95% CI [0.30;

0.51]). Furthermore, identity diffusion was highly significantly related to interpersonal problems ( $r=0.57$ ,  $p<0.001$ , 95% CI [0.45; 0.67]).

### **3.2. Mediation analysis**

Results showed that the path from RFQ-U to interpersonal problems was highly significant ( $\beta=4.34$ ,  $SE=0.75$ ,  $p<0.001$ , 95% CI [2.85; 5.83]), as was the path from RFQ-U to identity diffusion ( $\beta=2.81$ ,  $SE=0.29$ ,  $p<0.001$ , 95% CI [2.24; 3.37]) (see Figure 1). Identity diffusion was also significantly related to interpersonal problems, even after controlling for RFQ-U ( $\beta=1.18$ ,  $SE=0.18$ ,  $p<0.001$ , 95% CI [0.82; 1.54]). RFQ-U was no longer a significant predictor of interpersonal problems after controlling for the mediator, identity diffusion ( $\beta=1.04$ ,  $SE=0.85$ ,  $p=0.22$ , 95% CI [-0.64; 2.71]), suggesting full mediation. Furthermore, the indirect effect of RFQ-U on interpersonal problems through the mediator, identity diffusion, was significant ( $\beta=3.31$ ,  $SE=0.76$ , 95% CI [1.95; 5.00]). This model accounted for 33% of the variance in interpersonal problems. Furthermore, the indirect effect of RFQ-U on interpersonal problems through identity diffusion remained significant ( $\beta=2.60$ ,  $SE=0.62$ , 95% CI [1.51; 3.97]), even after controlling for RFQ-C.

We also tested the reverse mediation model, with RFQ-U as the mediator and identity diffusion as the independent variable. In this model, there was no mediation: the indirect effect of identity diffusion on interpersonal problems through the mediator RFQ-U was not significant ( $\beta= 0.14$ ,  $SE=0.11$ , [-0.07; 0.36]).

## **4. Discussion**

The present study investigated the relationship between three central features of BPD: mentalizing difficulties, identity diffusion, and interpersonal problems.

The results confirm the hypothesized relationship between mentalizing difficulties and identity diffusion (Badoud et al., 2015; Fonagy et al., 2016). Furthermore, both mentalizing difficulties and identity diffusion were strongly related to interpersonal problems, and identity diffusion fully mediated the relationship between mentalizing difficulties and interpersonal problems. Although this was a cross-sectional study, the reverse mediation model (i.e., with mentalizing mediating the relationship between identity diffusion and interpersonal problems) did not provide a good fit to the data. While further prospective research is needed, the current study suggests that the failure to understand oneself in terms of intentional mental states in BPD patients is related to their inability to construct a sense of self-coherence (Bargh, 2014). This instability in their sense of self and identity is, in turn, related to interpersonal problems that are frequently observed in these patients.

These findings may have important clinical implications for the treatment of BPD, as they suggest that, regardless of the theoretical approach underlying treatment, restoring the capacity for mentalizing is a prerequisite to restore a sense of self-coherence and to improve interpersonal functioning. This may be done in different ways. Clarkin et al. (2015), for instance, have described in much detail how both Transference Focused Psychotherapy (TFP) and Mentalization-Based Treatment (MBT) may address this issue, albeit in a slightly different manner. TFP, consistent with Kernberg's (2006) seminal views, attempts to achieve more coherence in the self by gradually pointing out to the patient polarized representations of the self (and others), using clarification, confrontation and interpretation, as they emerge in the therapeutic relation. MBT, in turn, typically involves mentalizing with the patient about alternative views on the self and others (and the self in relation to others), creating opportunities to integrate extreme representations of self and others, which ultimately is thought to result in a stronger sense of self-coherence. Hence, whereas TFP tends to focus more directly on the content of split representations in achieving a sense of self-coherence,

MBT has a stronger focus on strengthening the capacity to reflect on extreme representations of self and others (i.e., a process focus). Future research should address the relative value of both approaches which seem to share many features (Clarkin et al., 2015).

Limitations of the present study are the cross-sectional nature of the study design and that BPD diagnosis was based on patient self-report on the SCID-II screening questionnaire. Although there is evidence suggesting high concordance of self-reports with interview-based measures of personality disorder diagnosis (Ekselius et al., 1994), the use of patients' self-reported BPD symptoms may lead to an overestimation of the prevalence of BPD. Further, shared method variance of the self-report measures used in this study may have led to an overestimation of relationships among the constructs investigated in this study. Finally, the RFQ is a brief measure of impairments in mentalizing. Future studies should employ a multidimensional approach to the assessment of mentalizing, as well as addressing the other limitations outlined above.

Despite these limitations, this is the first study to suggest that impairments in mentalizing may play a central role in explaining identity diffusion and interpersonal problems in BPD patients.

## **Acknowledgements**

We would like to thank the patients who participated in this study.

## References

- American Psychiatric Association, 2000. Diagnostic and Statistical Manual of Mental Disorders, DSM-IV-TR, 1st ed. Author., Washington, DC.
- American Psychiatric Association, 2013. Diagnostic and Statistical Manual of Mental Disorders, 1st ed. Author, Washington, DC. Badoud, D., Luyten, P., Fonseca-Pedrero, E., Eliez, S., Fonagy, P., Debbané, M., 2015. The French version of the Reflective Functioning Questionnaire: validity data for adolescents and adults and its association with non-suicidal self-injury. PLoS One 10, e0145892.  
<http://dx.doi.org/10.1371/journal.pone.0145892>
- Bargh, J., 2014. Our unconscious mind. Sci Am 310, 30-37.  
<http://dx.doi.org/10.1038/scientificamerican0114-30>
- Berghuis, H., Kamphuis, J.H., Boedijn, G., Verheul, R., 2009. Psychometric properties and validity of the Dutch Inventory of Personality Organization (IPO-NL). Bull Menninger Clin 73, 44-60. <http://dx.doi.org/10.1521/bumc.2009.73.1.44>
- Black, D.W., Blum, N., Pfohl, B., Hale, N., 2004. Suicidal behavior in borderline personality disorder: prevalence, risk factors, prediction, and prevention. J Pers Disord, 226-239.  
<http://dx.doi.org/10.1521/pedi.18.3.226.35445>
- Choi-Kain, L.W., Gunderson, J.G., 2008. Mentalization: ontogeny, assessment, and application in the treatment of borderline personality disorder. Am J Psychiatry 165, 1127-1135. <http://dx.doi.org/10.1176/appi.ajp.2008.07081360>
- Clarkin, J.F., Fonagy, P., Levy, K.N., Bateman, A., 2015. Borderline personality disorder, in: Luyten, P., Mayes, L.C., Fonagy, P., Target, M., Blatt, S. J. (Eds.), Handbook of psychodynamic approaches to psychopathology. The Guilford Press, New York, pp. 353-380. Clarkin, J., Hull, J., Hurt, S., 1993. Factor structure of Borderline Personality Disorder criteria. J Pers Disord 7, 137-143. <http://dx.doi.org/10.1521/pedi.1993.7.2.137>

- de Bonis, M., De Boeck, P., Lida-Pulik, H., Feline, A., 1995. Identity disturbances and self-other differentiation in schizophrenics, borderlines, and normal controls. *Compr Psychiatry* 36, 362-366. [http://dx.doi.org/10.1016/s0010-440x\(95\)90117-5](http://dx.doi.org/10.1016/s0010-440x(95)90117-5)
- Ekselius, L., Lindstrom, E., von Knorring, L., Bodlund, O., Kullgren, G., 1994. SCID II interviews and the SCID screen questionnaire as diagnostic tools for personality disorders in DSM-III-R. *Acta Psychiatr Scand* 90, 120-123. <http://dx.doi.org/10.1111/j.1600-0447.1994.tb01566.x>
- First, M. B., Spitzer, R. L., Gibbon, M., Williams, J. B. W., Benjamin, L. S., 1997. *Structured Clinical Interview for DSM-IV axis II personality disorders (SCID-II)*. Washington, DC: American Psychiatric Press, Inc.
- Fonagy, P., Gergely, G., Jurist, E., 2004. *Affect regulation, mentalization, and the development of the self*, 1st ed. Karnac Books, London.
- Fonagy, P., Luyten, P., 2009. A developmental, mentalization-based approach to the understanding and treatment of borderline personality disorder. *Dev Psychopathol* 21, 1355-1381. <http://dx.doi.org/10.1017/S0954579409990198>
- Fonagy, P., Luyten, P., Moulton-Perkins, A., Lee, Y.W., Warren, F., Howard, S., Ghinai, R., Fearon, P., Lowyck, B., 2016. Development and validation of a self-report measure of mentalizing: the Reflective Functioning Questionnaire. *PLoS One* 11 (7), e0158678. <http://dx.doi.org/10.1371/journal.pone.0158678>
- Fonagy, P., Target, M., 1997. Attachment and reflective function: their role in self-organization. *Dev Psychopathol*, 679-700. <http://dx.doi.org/10.1017/s0954579497001399>
- Grant, B., Chou, S., Goldstein, R., Huang, B., Stinson, F., Saha, T., Smith, S., Dawson, D., Pulay, A., Pickering, R., Ruan, W., 2008. Prevalence, correlates, disability, and comorbidity of DSM-IV borderline personality disorder. *J Clin Psychiatry* 69, 533-

545. <http://dx.doi.org/10.4088/jcp.v69n0404>

Hayes, A., 2013. Introduction to Mediation, Moderation, and Conditional Process Analysis, 1st ed. The Guilford Press, New York, NY.

Horowitz, L. M., Alden, L. E., Wiggins, J. S., Pincus, A. L., 2000. Inventory of Interpersonal Problems: manual. The Psychological Corporation, San Antonio, TXHull, J.W., Clarkin, J.F.,

Kakuma, T., 1993. Treatment response of borderline inpatients. A growth curve analysis. *J Nerv Ment Dis* 181, 503-508. <http://dx.doi.org/10.1097/00005053-199308000-00005>

Jørgensen, C.R., 2006. Disturbed sense of identity in borderline personality disorder. *J Pers Disord* 20, 618-644. <http://dx.doi.org/10.1521/pedi.2006.20.6.618>

Jørgensen, C.R., 2010. Invited essay: identity and borderline personality disorder. *J Pers Disord* 24, 344-364. <http://dx.doi.org/10.1521/pedi.2010.24.3.344>

Jørgensen, C., Kjølbye, M., Freund, C., Bøye, R., Jordet, H., Andersen, D., 2009. Level of functioning in patients with borderline personality disorder. The Risskov-I study. *Nord Psychol* 61, 42-60. <http://dx.doi.org/10.1027/1901-2276.61.1.42>

Kernberg, O., 1976. Object-Relations Theory and Clinical Psychoanalysis, 1st ed. J. Aronson, New York.

Kernberg, O.F., 2006. Identity: recent findings and clinical implications. *Psychoanal Q* 75, 969-1004. <http://dx.doi.org/10.1002/j.2167-4086.2006.tb00065.x>

Kernberg, O. F., Clarkin, J. F., 1995. The Inventory of Personality Organization. The New York Hospital-Cornell Medical Center, White Plains, NY. Lenzenweger, M.F., Clarkin, J.F.,

Kernberg, O.F., Foelsch, P.A., 2001. The Inventory of Personality Organization: psychometric properties, factorial composition, and criterion relations with affect, aggressive dyscontrol, psychosis proneness, and self-domains in a nonclinical sample. *Psychol Assess* 13, 577-591. <http://dx.doi.org/10.1037//1040-3590.13.4.577>

- Lowyck, B., Luyten, P., Verhaest, Y., Vandeneede, B., Vermote, R., 2013. Levels of personality functioning and their association with clinical features and interpersonal functioning in patients with personality disorders. *J Pers Disord* 27, 320-336. <http://dx.doi.org/10.1521/pedi.2013.27.3.320>
- Mearns, R., Gerull, F., Stevenson, J., Korner, A., 2011. Is self disturbance the core of borderline personality disorder? An outcome study of borderline personality factors. *Aust N Z J Psychiatry* 45, 214-222. <http://dx.doi.org/10.3109/00048674.2010.551280>
- Modestin, J., Oberson, B., Erni, T., 1998. Identity disturbance in personality disorders. *Compr Psychiatry* 39, 352-357. [http://dx.doi.org/10.1016/s0010-440x\(98\)90047-5](http://dx.doi.org/10.1016/s0010-440x(98)90047-5)
- Morey, L.C., Berghuis, H., Bender, D.S., Verheul, R., Krueger, R.F., Skodol, A.E., 2011. Toward a model for assessing level of personality functioning in DSM-5, Part II: empirical articulation of a core dimension of personality pathology. *J Pers Assess* 93, 347-353. <http://dx.doi.org/10.1080/00223891.2011.577853>
- Ouimette, P., Klein, D., 1995. Test-retest stability, mood-state dependence, and informant-subject concordance of the SCID-AXIS II Questionnaire in a nonclinical sample. *J Pers Disord* 9, 105-111. <http://dx.doi.org/10.1521/pedi.1995.9.2.105>
- Sharp, C., Vanwoerden, S., 2015. Hypermentalizing in borderline personality disorder: a model and data. *J Infant Child Adolesc Psychother* 14, 33-45. <http://dx.doi.org/10.1080/15289168.2015.1004890>
- Soeteman, D.I., Hakkaart-van Roijen, L., Verheul, R., Busschbach, J.J., 2008. The economic burden of personality disorders in mental health care. *J Clin Psychiatry* 69, 259-265. <http://dx.doi.org/10.4088/jcp.v69n0212>
- Sollberger, D., Gremaud-Heitz, D., Riemenschneider, A., Agarwalla, P., Benecke, C., Schwald, O., Kuchenhoff, J., Walter, M., Dammann, G., 2015. Change in identity diffusion and psychopathology in a specialized inpatient treatment for borderline

personality disorder. *Clin Psychol Psychother* 22, 559-569.

<http://dx.doi.org/10.1002/cpp.1915>

Sollberger, D., Gremaud-Heitz, D., Riemenschneider, A., Kuchenhoff, J., Dammann, G.,

Walter, M., 2012. Associations between identity diffusion, axis II disorder, and

psychopathology in inpatients with borderline personality disorder. *Psychopathology*

45, 15-21. <http://dx.doi.org/10.1159/000325104>

Wilkinson-Ryan, T., Westen, D., 2000. Identity disturbance in borderline personality disorder:  
an empirical investigation. *Am J Psychiatry* 157, 528-541.

<http://search.proquest.com/docview/220457763?accountid=17215>

Wright, A.G.C., Hallquist, M.N., Morse, J.Q., Scott, L.N., Stepp, S.D., Nolf, K. a, Pilkonis, P.  
A., 2013. Clarifying interpersonal heterogeneity in borderline personality disorder  
using latent mixture modeling. *J Pers Disord* 27, 125–43.

<http://dx.doi.org/10.1521/pedi.2013.27.2.125>Zimmerman, M., Chelminski, I., 2006. A  
scale to screen for DSM-IV axis I disorders in psychiatric out-patients: performance of  
the Psychiatric Diagnostic Screening Questionnaire. *Psychol Med* 36, 1601-1611.

<http://dx.doi.org/10.1017/S0033291706008257>

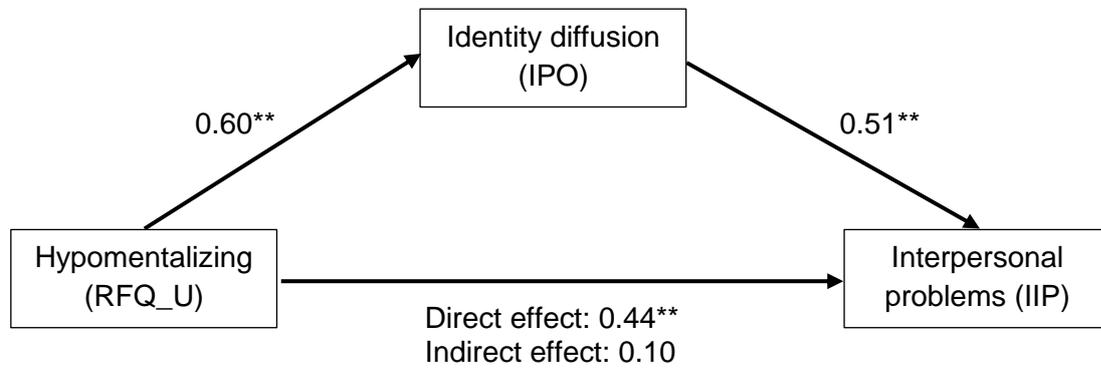
Zimmerman, M., Mattia, J.I., 2001. A self-report scale to help make psychiatric diagnoses: the  
Psychiatric Diagnostic Screening Questionnaire. *Arch Gen Psychiatry* 58, 787-794.

<http://dx.doi.org/10.1001/archpsyc.58.8.787>

*Table 1.* Demographic information of the total sample ( $n=176$ ).

<b>Measure</b>	<b>Frequency</b>	<b>%</b>	<b>M</b>	<b>SD</b>
<b>Age</b>			30.11	9.12
<b>Sex</b>	104	59.1		
Male	72	40.9		
Female	104	59.1		
<b>Level of education</b>				
Secondary school completed	145	82.9		
Higher education completed	85	48.6		
University completed	35	20		
<b>Living situation</b>				
Living alone	67	38.5		
Living with parents	64	36.4		
Living with partner/spouse	42	23.8		

Figure 1. Standardized regression coefficients for the relationship between hypomentalyzing and interpersonal problems as mediated by identity diffusion.



\*\*p<0.001