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The role of Authenticity in Anxiety, Depression and Quality of Life: An exploratory Cross-sectional study.

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Abstract

The aim of this study was to examine the relationship between authenticity and symptoms of anxiety and depression as well as health-related quality of life (HR-QoL) and life satisfaction in the context of the theoretically related constructs of adult romantic attachment, reflective functioning and insight in a convenience sample of Swedish adults.

One hundred and ninety-one participants were recruited from various sources through a convenience sampling method. The participants completed an online survey which included standardized measures of all off the constructs measured above as well as demographic- and psychiatric history questions. T-test, correlational analysis and hierarchical multiple regressions were used to analyse the data.

The results suggested that authenticity is significantly correlated with symptoms of anxiety and depression as well as HR-QoL and life satisfaction and that individuals who report being diagnosed with a mental health disorder also tend to report substantially lower levels of authenticity (d=0.92). Other noteworthy findings are that symptoms of anxiety and depression accounted for a vast majority of the variance in HR-QoL and life satisfaction and that adult romantic attachment was a significant predictor for all the outcome variables. These results add to a small body of evidence and further research is needed.

Keywords; Authenticity, depression, anxiety, health-related quality of life, life satisfaction, adult romantic attachment, reflective functioning, mentalisation, insight.

Sammanfattning

Syftet med den här studien var att undersöka sambandet mellan autenticitet och symtom på ångest och depression samt hälso-relaterad livskvalité (HR-QoL) och livstillfredsställelse och samtidigt ta i beaktning de teoretiskt relaterade konstrukten vuxenanknytning i romantiska relationer, reflektivt fungerande och insikt hos ett bekvämlighetsurval av svenska vuxna.

Etthundranittioen deltagare rekryterades från olika källor med syftet at få så många deltagare som möjligt. Deltagarna fick fylla i en online-undersökning som innehölls standardiserade mått på alla de konstrukt som nämndes ovan samt frågor om demografiska variabler samt psykiatrisk historia. T-test, korrelationsanalyser och hierarkiska multipla regressionsanalyser användes för att analysera data.

Resultaten visar att autenticitet är signifikant korrelerat med symtom på ångest och depression samt HR-QoL och livstillfredsställelse samt att individer som rapporterar att de har blivit diagnosticerade med en psykiatrisk diagnos också rapporterar betydligt lägre nivåer av autenticitet (d=0.92). Andra nämnvärda fynd är att symptom på depression och ångest förklarade det mesta av variansen i HR-QoL och livstillfredsställelse samt att vuxenanknytning i romantiska relationer var en signifikant prediktor för alla utfallsvariabler. Denna studie adderar kunskap om autenticitet i relation till de studerade variablerna men ytterligare forskning behövs för att bekräfta resultaten.

Nyckelord: Autenticitet, depression, ångest, hälso-relaterad livskvalité, livstillfredsställelse, vuxenanknytning i romantiska relationer, reflektivt fungerande, mentalisering, insikt.

Introduction

Epidemiological studies have found that each year roughly 40% of adults across Europe suffer from at least one mental disorder resulting in increased health-care usage, disability, suffering and suicide (Wittchen et al., 2011). In Sweden (and elsewhere), the most common are anxiety and depressive disorders, affecting more than 20% of the population at any one time (Johansson et al., 2013). Although meta-analyses indicate that there are moderately effective psychological treatments for anxiety and depression, roughly half of those receiving these treatments do not experience a clinically meaningful response (Cuijpers, 2017; Cuijpers et al., 2013) and half of those who do recover experience a relapse within four years of treatment termination (Steinert, Hofmann, Kruse & Leichsenring, 2014; Vittengl, Clark, Dunn & Jarrett, 2007). Kazdin (2009) has argued that for further improvements in outcomes for psychological treatments to occur, more research is needed to identify the mechanisms by which treatments work and for whom. In empirical psychological research, this generally means conducting experiments that allow testing for statistical and temporal relationships aimed at identifying the degree to which variables can be seen as mediators or moderators of change (Kazdin, 2009). A brief definition of both of these two concepts (mediator and moderator) is warranted. First, a mediator is a variable that may statistically account for the relationship between an independent variable (for example treatment) and a dependent variable (for example anxiety, depression, HR-QoL). Identifying a mediator comes with a large set of requirements, such as establishing a time-line and a dose-response relationship, that are beyond the scope of this thesis to review (for a discussion see: Kazdin, 2009; Kazdin, 2007; Kraemer, 2016). It is however important to note that while identifying a mediator implies something important about the relationship between the studied variables it is not tantamount to a mechanism. While a mechanism is the causal explanation of an observed effect, a mediator is merely a guide that may point in the direction of a mechanism and that in itself may not necessarily provide a causal explanation. Secondly, a moderator is a variable that influences the relationship between an independent and a dependent variable. For example, if older people would have a higher chance of experiencing increased QoL in a psychological treatment, then age is moderating the relationship between that treatment and QoL. One method for identifying candidate moderators or mediators is through cross-sectional studies of clinical (i.e., recruited from identified clinical populations, often treatment-seeking) and unselected groups of individuals (i.e., recruited from the broader population) where measures of outcome (anxiety, depression, QoL, well-being), and various candidate mediators or moderators are administered. The researcher then assesses the

relationships between the candidate mechanisms and the outcome variables with the aim of identifying, for further study using more sensitive designs, variables that may directly impact symptoms, QoL, and well-being, or act to moderate or buffer the effect of symptoms upon QoL and well-being. While limited, cross-sectional studies are a reasonable starting point in the long process of identifying potential mediators or moderators as more sensitive designs generally require more resources and puts a larger burden on participants.

It is important to point out that for individuals receiving treatment for anxiety and depression, a reduction in symptoms of anxiety and depression, while desirable, does not necessarily mean a corresponding level of improvement in their social functioning, sense of well-being and quality of life (QoL) (Hogan, 2003). Thus, while it is important to identify variables that might influence symptom reduction (Kazdin, 2009), similar attention is needed to identify variables that influence these broader outcomes or that may buffer the negative effects of symptoms upon QoL (Hogan, 2003; Cloninger, 2006).

Among the variables that have been shown to be associated with long-term positive outcomes in populations with mental health difficulties and that may buffer the negative effects of common mental health problems such as anxiety and depression, are having access to functioning social support networks, well-functioning romantic relationships, gainful employment, and repeated but brief exposure to manageable stressors (Harandi, Yaghinasab & Nayeri, 2017; Margelisch, Schneewind, Violette & Perrig-Chiello, 2017; Rutter, Panter-Brick & Leckman, 2013; Reifman, Oblad, & Niehuis, 2017; Schaefer et al., 2017). Of these variables, the most robust findings are that among individuals in the community and recruited from (mental) health populations, higher levels of perceived social support report are associated with fewer symptoms and better overall functioning and well-being (Wang, Wu & Liu, 2003; Harandi, Taghinasab & Nayeri, 2017). An individual's appraisals of and ability to participate in, form, interact with and sustain supportive social networks is likely influenced by a variety of factors that are beyond the scope of this thesis to review (for a review see: Wang et al., 2017). However, there is an emerging body of data suggesting that one's level of social functioning and perceived social support is influenced by: (1) one's ability to reflect upon and regulate emotions and other mental states, also knowns as reflective functioning or mentalisation, and if only applied to the self, insight; (2) one's ability to freely express and live in accordance with one's emotions and values, also known as authenticity; and (3) one's ability to tolerate intimacy with others without excessive avoidance or anxiety, also known as adult romantic attachment (Bartholomew & Horowitz, 1991; Brunell et al., 2010; English & John, 2013; Sroufe, 2005; Stanton & Campbell, 2014). This thesis focuses on how

authenticity, reflective functioning, insight and adult romantic attachment are related to the severity of self-reported symptoms of anxiety and depression as well as health-related quality of life (HR-QoL) and life satisfaction. Below is a brief review of the literature relating to the candidate moderators and outcome variables addressed in this study followed by the research questions.

Measuring variables that may impact directly upon or potentially moderate (buffer) the negative effects of anxiety and depression on HR-QoL and satisfaction with life

       Adult romantic attachment. Adult romantic attachment refers to how representations of the self and others, originating from our earlier experiences in childhood relationships, affect how we feel, think, behave and function in romantic relationships in adulthood (Fonagy, Gergely & Target, 2007). Consistent with Bowlby (1982, 1973, 1980), attachment researchers have converged on a definition of adult attachment based on the two dimensions of attachment-related anxiety on the one hand and attachment-related avoidance on the other (Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998). Attachment-related anxiety is intended to capture an individual's predisposition towards anxiety and reactivity regarding experienced rejection and abandonment, while attachment-related avoidance is intended to capture the degree to which an individual finds discomfort in and engages in avoidance of intimacy, closeness and/or dependence on others (Mikulincer & Shaver, 2007). These dimensions have been shown to be related to different behaviours that are crucial aspects of functioning in romantic relationships such as self-disclosure, trust and accommodation which in turn are related to many positive outcomes, for example relationship satisfaction and personal well-being (Meeks, Hendrick & Hendrick, 1998; Mirgain & Cordova, 2007; Stanton & Campbell, 2014).

       There are many measures/methods for assessing adult attachment in the literature, both interview-based and self-report. For the purposes of this study we chose a newly developed, short-form version (ECR-RD12; Brenk-Franz et al., 2018) of the widely-used 36-item Experiences in Close Relationships Scale Revised (ECR-R; Fraley et al., 2000). The 12-item ECR-RD12 assesses the same two aspects of insecure attachment as the 36-item original: i.e., anxious and avoidant attachment. Items on the anxious attachment scale include such statements as: "I'm afraid that I will lose my partner's love" and "I worry that romantic partners won't care about me as much as I care about them." Items on the avoidant attachment scale includes such statements as: "I feel comfortable sharing my private thoughts and feelings with my partner" (reverse scored) and "I prefer not to be too close to romantic

partners." Each item is rated using a 7-point scale of disagreement (1 = strongly agree, 7 = strongly disagree). Higher scores on both scales suggest an anxious and/or avoidant insecure attachment style. The original 36-item scale has been found to possess good psychometric properties and to correlate well with measures of relationship satisfaction (Sibley, Fisher & Liu, 2005) but given the overall length of our survey, we decided to use the newly developed, 12-item short form although it had only been validated in a German-language version (Brenk-Franz et al., 2018). In this validation study of the ECR-RD12, the authors found that scores on the measures were significantly (and negatively) correlated with life satisfaction but were unrelated to health status. To our knowledge, no studies have undertaken an investigation of the relationship between scores on the ECR-R (any version) and self-reported anxiety, depression, or HR-QoL.

Reflective functioning. Reflective functioning is a developmentally influenced ability that refers to the individual's explicit and implicit ability to interpret human behavior in terms of hypothetical mental states (Allen, Fonagy & Bateman, 2008; Fonagy, Gergely & Target, 2007). Characteristic of good reflective functioning is that these interpretations are hypothetical in that the individual recognizes that one can never fully know the mental states of any person, including him or herself, while at the same time being able to generate reasonable and useful guesses. The ability to do so is proposed to make the behavior of others, as well as the turmoil of your inner life, seem more meaningful and thus more bearable and manageable (Fonagy, Gergely, Jurist & Target, 2002). Being a developmental construct, lower levels of reflective functioning can be exemplified by the young child showing difficulty distinguishing their internal and external worlds based upon their own interpretations of other's mental states, with the latter having no correspondence to an observable physical reality or, conversely, an overemphasis on the same observable physical reality in inferring mental states, all of which can be characteristic of poor reflective functioning (Allen, Fonagy & Bateman, 2008). Impaired reflective functioning can lead the individual to perceive negative emotions as unbearable, to have difficulty considering alternative perspectives, and to experience disconnection between their inner and outer worlds and thus have difficulty in finding meaning (Allen, Fonagy & Bateman, 2008). In summary, reflective functioning is an ability involving both self-reflective and interpersonal aspects, as well as explicit and implicit processes proposed to influence the individual's ability to tolerate and regulate affect, to deliberately control attention, and to adaptively relate to others, and thus reflective functioning serves a protective role in relation to psychopathology (Allen, Fonagy & Bateman, 2008; Fonagy et al., 2016).

At present the most widely-used measure of reflective functioning is the 8-item Reflective Functioning Questionnaire (RFQ-8) developed by Fonagy et al. (2016). The RFQ-8 is comprised of two 6-item subscales (some items are scored for both subscales): Certainty of Mental States (RFQc) and Uncertainty of Mental States (RFQu). The purpose of this design is to capture more extreme levels of both hypo-mentalisation (i.e., low awareness of mental states) as well as hyper-mentalising (i.e., being overly confident of the mental state of oneself and others) by using an algorithm. Respondents rate the degree to which they agree (1 = "completely disagree" to 7 = "completely agree") with various statements (for example: "People's thoughts are a mystery to me" or "When I get angry I say things that I later regret"). The scores are then put through a scoring algorithm to generate the subscales, partly from the same items (Luyten & Fonagy, n.d.). A consequence of the scoring algorithm is that a response to a question can generate either a high score on one subscale and low score on the other – or a low score on both. With low scores indicating no impairment in mentalisation that can be described as either hyper- or hypo-mentalising. The scale is thus able to, or at least aspires to, somewhat bypass the paradox in asking subjects to self-report about their mentalisation skills. For a more detailed description of the scoring see Luyten & Fonagy (n.d.) or Fonagy et al. (2016). Research with the RFQ-8 is still relatively new but in the original validation paper the scale developers found that scores on the measure correlated significantly (in the expected direction) with a measure of borderline personality symptoms that incorporated symptoms of both anxiety and depression (Fonagy et al., 2016). To our knowledge, no study has yet evaluated the relationship between scores on the RFQ-8 and measures of HR-QoL and life satisfaction.

Insight. Insight is a complex concept with a long history in clinical psychology and psychotherapy and a review of this literature is beyond the scope of this thesis (for a review see: Hill et al., 2007). Surprisingly, insight has received limited attention in empirical studies (Connolly Gibbons, Crits-Christoph, Barber & Schamberger, 2007). For the purpose of this thesis, insight is defined as the degree to which the individual can clearly come into contact with and understand his or her thoughts, feelings and behavior (Grant et al., 2002). As alluded to above, insight overlaps to some extent with the concept of reflective functioning but the differences and similarities between them are likely complex (Castonguay & Hill, 2007). Nevertheless, insight as defined above, is assumed to be a vital competency when it comes to effective problem solving and coping with emotional distress and has been shown to be negatively correlated with psychological distress (Nakajima, Takano & Tanno, 2017). One possibility is that individuals with lower levels of insight have greater difficulty understanding

the links between past and ongoing experiences, current thoughts, feelings and behaviors and thus have greater difficulty problem-solving when confronted with stressors.

There are several measures of insight in the literature, but none have been used more than others, and there are several limitations to most of them (Connolly Gibbons, Crits-Christoph, Barber & Schamberger, 2007). For the purposes of this study we chose the Self-reflection and insight scale (SRIS; Grant et al., 2002) which is the only measure that, to our knowledge, has correlated as expected with any other measures in order to demonstrate convergent validity (Connolly Gibbons, Crits-Christoph, Barber & Schamberger, 2007; Grant et al., 2002). The SRIS is comprised of 20 statements which respondent's rate on a 6-point scale of agreement (1 = "strongly disagree, 6 = "strongly agree"), the scores are then summarized and some items are reversed. The SRIS consists of three subscales: Need for self-reflection, Engagement in self-reflection, and Insight (Grant et al., 2002). However, for the purpose of this thesis, we will focus only on the Insight subscale, scores on which have been shown to be negatively correlated with anxiety, depression, alexithymia and stress, and positively correlated with self-regulation, cognitive flexibility, and life satisfaction (Grant et al., 2002; Harrington & Loffredo, 2011; Nakajima, Takano & Tanno, 2017). To our knowledge, there have been no studies examining the relationship between insight and HR-QoL.

Authenticity. Another concept that has long been recognized by existential, humanistic and psychoanalytic writers to be of importance in moral development, well-being and mental health is authenticity (May, 1981; Rogers, 1959, 1964, 1980; Winnicott, 1965). Authenticity refers to the individual's ability to know him- or herself and act according to that knowledge (Wood et al., 2008). According to humanistic writers (Rogers, 1959) authenticity is achieved when congruence is high between the individual's (1) actual physiological states, emotions and deep-level cognitions, (2) conscious awareness of said physiological states, emotions and deep-level cognitions and (3) behaviour and emotional expression. The degree of congruence between these are thought to be influenced by: (a) the degree to which the individual is able to be consciously aware of his or her actual physiological states, emotions and deep-level cognitions, with lack of awareness being recognized as a state of *self alienation*; (b) the degree to which the individual is able to act according to that knowledge; and (c) the degree to which the individual is influenced by external factors regarding both what is allowed into conscious awareness as well as what is allowed to flow through conscious awareness into action (Rogers, 1959).

Although authenticity has received considerable attention as a construct within theoretical discussions of well-being and to a lesser extent psychotherapy, relatively few empirical studies of authenticity have been carried out. Indeed, until recently there were no self-report measures of the construct available. The first, and the one used in this study, was developed by Wood et al. (2008). This 12-item Authenticity scale consists of statements (for example "I feel out of touch with the real me" and "I always feel I need to do what others expect me to do") that are rated on a scale from 1 (does not describe me at all) to 7 (describes me very well). The items are divided into three subscales called Self-Alienation, Authentic Living, and Accepting External Influence. The Self-Alienation subscale is meant to capture the way an individual is accessing physiological states, emotions and deep-level cognitions and allowing these into conscious awareness (Wood et al., 2008). The subjective experience of not knowing oneself or feeling out of touch with the "true self" is a marker for self-alienation. The Authentic Living subscales assess the extent to which an individual behaves in a way that is consistent with their conscious awareness of their physiological states, emotions, cognitions, values and beliefs (Wood et al., 2008). This subscale can be said to assess the tendency to be true to oneself. The third subscale, and the third aspect of this conceptualization of authenticity, involves the extent to which one accepts the influence of other people and the way the individual conforms to the expectation of others (Wood et al., 2008). How permeable in this regard one is, and how much external influence one accepts will affect the way an individual will behave according to one's own values and/or the tendency to self-alienate from internal states. Primarily, the conceptualization above has been derived from the work of Carl Rogers (1959, 1964, 1980) and is outlined here as well as in Wood et al. (2008).

The research that has been carried out on the construct of authenticity broadly, or as measured by the Authenticity Scale, have found individuals with higher authenticity to report better social and romantic relationship functioning, greater relationship satisfaction, higher levels of perceived social support, self-esteem, and personal well-being, and lower levels of psychological distress (Boyraz & Kuhl, 2015; Brunell et al., 2010; English & John, 2013; Grégoire, Baron, Ménard & Lachance, 2014; Heppner et al., 2008). A recent study found that authenticity moderated the relationship between loneliness and alcohol-related problems, physical complaints, and symptoms of anxiety and depression in undergraduate students at an American university (Bryan, Baker & Tou, 2017). The relationship between authenticity and HR-QoL has not, to our knowledge been previously evaluated. It should be stated that authenticity as formulated not only by Wood et al. (2008), but also by psychoanalytic,

humanistic and existentialist writers (May, 1981; Rogers, 1959, 1964, 1980; Winnicott, 1965), includes as a core component knowledge of one's own inner life (termed self-alienation). This construct may partly overlap conceptually with reflective functioning and insight, but again, to our knowledge these relationships have not been evaluated.

Measuring anxiety, depression, life satisfaction and HR-QoL

   Anxiety and depression. Anxiety and depression, at the trait, symptom, and diagnostic levels are well established constructs in the literature and a detailed description is not repeated here. While the DSM-5 (APA, 2013) and ICD-11 (WHO, 2018) specify many distinct diagnostic categories which have anxiety and/or depression as prominent features, the severity of these conditions are often assessed using broad, trait-like self-report measures (Elwood et al., 2012; Uher et al., 2012). In the present study, we used the 14-item Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). Seven items assess common trait-like symptoms of anxiety including worrying, panic, and feeling tense/wound-up/apprehensive. Seven items assess the core features of depression: low mood, anhedonia, and low energy. The HADS was originally developed for use as a brief screening tool to detect clinically significant symptoms of anxiety and depression in general medical populations. However, it is appropriate for use in community settings and has been validated in many different populations and language translations (Snaith, 2003). Specifically, the HADS has been found to correlate in the strong range with other validated self-report measures of anxiety/depression, to differentiate between individuals and without a clinician-assessed diagnosis of anxiety and depression, to be sensitive to the effects of treatment for anxiety/depression, and to correlate in the moderate range with broader measures of functioning and quality of life (Bjelland et al., 2002).

   Health-related quality of life (HR-QoL). Health-related quality of life is a widely used multidimensional construct including several aspects of functioning such as social, emotional, physical and pain-related functioning as well as general health, vitality, physical health and mental health (Cordier, Brown, Clemson & Byles, 2018; Haywood, Garratt & Fitzpatrick, 2005; Ware, Kosinski & Keller, 1996). Further, the construct is intended to capture: (1) self-perceived health status; (2) the amount of time during which the individual experienced poor physical and/or mental health; and (3) the degree to which the individual was hindered in performing daily activities such as self-care, work, recreation and social activities due to poor health (Shaoman Yin et al., 2016). In doing so it is a clear definition of quality of life that presupposes that implied in good quality of life is: (a) a low degree of

symptoms; (b) perceived good health; and (c) unimpaired ability to partake in daily activities such as work and social activities. One might say that the construct focuses on the individual's ability to participate in society and is thus heavily culture-laden by necessity.

In the present study, we chose for our measure of HR-QoL the SF-12 (Ware, Kosinski & Keller, 1996). The SF-12 is the briefer, 12-item version of the most widely used measure of HR-QoL in healthcare research – the SF-36 (Ware & Sherbourne, 1992). The SF-12 asks the respondent to rate the overall quality of their health with a single item, the next four items assess the degree to which health problems interfere with everyday functioning, followed by three items assessing the occurrence of emotional problems, followed by a single item where respondents rate the degree to which either physical or emotional problems interfere with their everyday functioning. Of relevance to this study, the SF-12 has been found to be a reliable and valid measure of HR-QoL in large-scale studies of mental health populations (Huo et al., 2018).

Satisfaction with life. Satisfaction with life is a subcomponent of subjective well-being, which also incorporates the frequency of negative and positive affect, that refers to a cognitive judgement of an individual's quality of life in relation to his or her own values (Diener, 1985). Arguably, this a less culture-laden construct than health-related quality of life which places the emphasis on the impact of culturally-defined somatic/mental complaints on the individual's capacity to engage with (mainly) culturally-valued activities (i.e., work, domestic responsibilities). Satisfaction with life places the emphasis on the correlation between the individual's values and ideals and their day-to-day activities generally and regardless of cultural context. There are numerous measures available for measuring life satisfaction. For the purposes of this study we chose the most widely-used measure – the Satisfaction with Life Scale (SWLS; Diener, 1985; Diener, Inglehart & Tay, 2013). The SWLS is brief scale that asks respondents to rate the extent to which they agree (1-7 scale) with five statements: 1) in most ways my life is close to ideal; 2) the conditions of my life are excellent; 3) I am satisfied with my life; 4) So far I have gotten the important things I want in life; and 5) If I could live my life over, I would change almost nothing. Scores on measures of life satisfaction (including the SWLS) have been shown to correlate positively with positive affect, perceived health and perceived social support (Cloninger & Zohar, 2011; Glaesmer, Grande, Brähler & Roth, 2011), and to correlate negatively with anxiety, negative affect and depression (Glaesmer, Grande, Brähler & Roth, 2011; Jovanovic, 2016).

Purpose and aim of this study

The primary aim of this study was to undertake a preliminary investigation of the bivariate relationships between authenticity and reflective functioning, insight, romantic attachment, anxiety, depression, HR-QoL, and life satisfaction in Swedish adults. The secondary aim was to assess whether authenticity, reflective functioning, insight or adult romantic attachment made a significant contribution to the observed variance in HR-QoL and life satisfaction, after controlling for the influences of anxiety and depression (separately). The purpose of this aim is to assess whether any of our variables may be related to HR-QoL or life satisfaction over and beyond any indirect relationships through symptoms of anxiety and depression. The final aim of the study was to investigate the frequency of self-reported mental health diagnoses and how these relate to our theoretical constructs as well as outcomes of interest as measured by the standardized measures described above.

As stated above, there has been very little empirical research on authenticity and mental health and the present study was intended to be exploratory in nature. We knew from the study by Bryan et al. (2017) that correlations between another measure of authenticity and measures of anxiety and depression were in the medium range ($r = -.42$ and $-.48$ respectively) in a sample of 537 American undergraduates. These correlations were similar in size to those found by Wood et al. (2008) using the Authenticity Scale and different measures of anxiety and depression obtained from 180 adults recruited from the community. Thus, we expected to find similarly sized correlations between the Authenticity Scale and the HADS in this study. In their validation of the Authenticity Scale, Wood et al. (2008) reported a medium size correlation between the same life satisfaction scale as used here and the Authenticity Scale ($r = -.34$). Again, we expected a similarly sized correlation between these two measures, and by extension, between authenticity and HR-QoL. Beyond this data from the literature, we had nothing to guide us as to the likely size of the correlations between authenticity, reflective functioning, insight, and romantic attachment. Based only on the model of authenticity as described in the literature, we anticipated that correlations between these variables would be in the small to medium range.

To address these questions, and to ensure that there were individuals with a broad range of symptoms/QoL/satisfaction with life, we decided in a priori way to recruit participants from social websites catering to Swedish adults who suffer from anxiety and depression and from the general population. In keeping with the exploratory nature of the study, we used a convenience sampling approach, meaning that the primary objective was to quickly obtain as many respondents as possible rather than obtaining a population-

representative sample. This limits the conclusions that can be drawn from the study (i.e., limits its external validity) and we are circumspect in our conclusions and point towards the need for further research with more representative samples. The specific research questions were as follows:

1. To what extent does participants report having received a mental health diagnosis from a mental health professional and how do these participants differ from participants who do not report having been diagnosed (in terms of scores on all of the included standardized measures)?

2. To what extent is authenticity correlated with reflective functioning, insight, adult romantic attachment, anxiety, depression, HR-QoL, and life satisfaction in a convenience sample of Swedish adults?

3. How much of the variance in anxiety and depression (separately) is explained by authenticity after controlling for reflective functioning, insight and adult romantic attachment (separately and in the order specified in this sentence)?

4. How much of the variance in HR-QoL and life satisfaction (separately) is explained by authenticity after controlling for depression, anxiety, reflective functioning, insight and adult romantic attachment (separately and in the order specified in this sentence)?

Method

Participants and procedure

The study used an internet-administered cross-sectional survey design. The survey included items for demographic data and health history as well as standardized measures of anxiety and depression, authenticity, attachment style in romantic relationships, reflective functioning, insight and self-reflection, health-related quality of life (HR-QoL) and satisfaction with life. The survey was administered online in four different contexts. Some participants were recruited from two online support groups for people with anxiety and depression, others from the Psychology (Psykolog) programme at Lund university, some from the authors' social network, and some from a mailing list for people interested in participating in clinical studies. The two online support groups consisted of around 10,000 and 1,000 members respectively; data collection in these support groups commenced in October of 2018 but the response rate was extremely low. The student group was recruited via email (including a link to the online survey) which was sent out in November to all students who were currently admitted to the of Psykolog programme at Lund university as of November 2018 (approximately 467 students). Admittance to the programme requires high grades and the

group can be characterised as predominantly white, female, and middle class. Individuals from the extended social network of the two authors were recruited by posting a link to the online survey on the authors' personal Facebook pages which together had approximately 1,200 contacts (friends). As posted on the authors' Facebook pages, the link to the survey also requested that interested participants share the survey link with five other people. This meant that up to 6000 people from the extended social network of the authors saw the request to complete (and link to) the survey. Finally, a link to the survey was sent out to every individual on a mailing list comprised of approximately 1,000 people who had previously participated in or expressed a desire to participate in clinical trials concerning diabetes, sleep disorders, anxiety disorders and other conditions. This mailing list is kept/operated by a newly started company specializing in aiding researchers in recruiting participants for clinical trials and has developed a service where participants can sign up for a newsletter describing currently running studies.

Upon clicking the link to the online survey, participants were presented with a description of the study including its purpose, that it was completely anonymous, the estimated time to completion, and how the data would be processed and how the results would be presented. Before starting the actual survey, participants had to acknowledge that they read the study description, that they had understood that they were participating in an anonymous survey, and that they could withdraw at any time before completing the survey.

Measures

Demographics and health history. The sociodemographic questions included items about age, number of children, relationship status, gender, employment status and educational attainment. The health history questions included items about their physical and mental health and if they are receiving treatment for any problems and how satisfied they are with the treatments. Participants are presented with a range of common physical and mental health problems and are asked to mark any issues related to them and if they were diagnosed by a professional. As health and mental health problems are common and can cause significant distress to family members (Ennis & Bunting 2013, Lavelle et al., 2014), we also asked the same questions about a close family member.

Anxiety and depression. As stated in the introduction, anxiety and depression were measured using a Swedish-language version of the 14-item, self-report Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). Participants rate the severity of each symptom/item over the past week using a 0-3 frequency scale (0 = Never; 3 = Always).

Higher scores on the subscales indicate higher levels of anxiety and depression, respectively. A score of 11 or higher on the subscale is indicative of clinically significant symptoms of anxiety or depression, respectively. The validated, Swedish-language version of the scale (Lisspers et al., 1997) is made available by the publishers and is available online (Mapi Research Trust, n.d.). In both the Swedish and English-language version, the HADS has been shown to possess good psychometric properties and validity in different populations (Zigmond & Snaith, 1983; Lisspers et al., 1997; Bjelland, Dahl, Haug & Neckelmann, 2002; Drageset, Eide & Ranhoff, 2013; Annunziata, Muzzatti & Altoe, 2011; Saboonchi et al., 2013; Iani, Lauriola & Constantini, 2014). In the present study, the internal consistency coefficients (one indicator of reliability) for anxiety and depression subscales of the HADS were excellent (Cronbach's α = .88 and .91, respectively).

   Authenticity. Authenticity was measured using a Swedish-language version of the 12-item Authenticity Scale (AS; Wood, et al., 2008). As noted in the introduction, the Authenticity Scale is comprised of three subscales: Self-Alienation, Authentic Living, and Accepting External Influence. Each subscale consists of four items that are rated on a 7-point scale (1 = Does not describe me well; 7 = Describes me very well) that are summed to arrive at a total score for each subscale. We reverse-scored the items on the Self-alienation and Accepting external influence subscales, so that together with Self-alienation, a total score for the whole scale could be used as a single measure of authenticity where higher scores indicates higher authenticity. The scale has been shown by Wood et. al (2008) to have good internal consistency with Cronbach's α alpha coefficients of α = .69 for authentic living, α = .78 for accepting external influence, and α = .78 for self-alienation. Test-retest coefficients at two- and four-week intervals ranged from r = .78 to .84 and the authors found support for the discriminant and convergent validity of the scale. Scores on the Authenticity Scale have also been shown to be insensitive to social desirability (Wood, et al 2008). The translation from English to Swedish was carried out in accordance the World Health Organization's guidelines for the translation of research measures (WHO, n.d.). In a master's thesis by Tiitanen (2014), in a Lund University student sample (n=196), the internal consistency for the whole scale was α = .86, for Authentic Living was α = .74, for Self-Alienation was α = .87, and for Accepting External Influence was α = .82 (Tiittanen, 2014). Similarly, high levels of internal consistency were obtained in a second larger (n=396) sample comprised of Lund University graduates and teachers and school staff from various schools. In the present study, the Cronbach's alpha for the whole scale was α = .87 and α = 80, .85 and .86 for Authentic Living, Self-Alienation and Accepting External Influence subscales, respectively.

Adult romantic attachment style. As stated in the introduction, attachment style in romantic relationships was measured using a Swedish language version of the short-form version of the Experiences in Close Relationships Scale Revised (ECR-RD12; Brenk-Franz et al. 2018). Again, ECR-RD12 yields scores for two subscales: anxious and avoidant attachment style; higher scores indicating more anxious/insecure attachment. The validation of the ECR-D12 revealed good psychometric properties in 249 adult patients recruited from German primary health care facilities (Brenk-Franz et al. 2018). In developing a Swedish version of the ECR-RD12, we followed the World Health Organization's guidelines for the translation of research measures (WHO, n.d.). In addition, we compared the items we translated from the German-language ECR-RD12 to existing Swedish translations of the same items from the original 36-item version of the ECR-R. The internal reliability coefficients for the anxiety (α = .86) and avoidance subscales (α =.74) in the present sample were similar to those reported for the German translation of the ECR-RD (Brenk-Franz et al., 2018) and a Swedish translation of the original 36-item ECR (Beijerstam-Lönnberg & Medstrand, 2018).

Reflective functioning. As stated in the introduction, reflective functioning was measured using a Swedish-language version of the 8-item Reflective Functioning Questionnaire (RFQ-8; Fonagy et al, 2016). The RFQ-8 is comprised of two 6-item subscales: Certainty of Mental States (RFQc) and Uncertainty of Mental States (RFQu) (some items are scored for both subscales). Items on both subscales are scored using a 7-point scale ranging from 1 = "completely disagree" to 7 = "completely agree". The values in responses to items like "Sometimes I do things without knowing why" and "I don't always know why I do what I do" (RFQu, uncertainty of mental states) are recoded to 0, 0, 0, 0, 1, 2, 3 so to ensure that high scores reflect an almost complete lack of awareness of mental states, while lower scores reflect some insight to one´s and others behaviour. On the other hand, the same items "Sometimes I do things without knowing why" and "I don't always know why I do what I do", can also be found in the other subscale (RFQc, certainty of mental states). It is then recoded to 3, 2, 1, 0, 0, 0, 0 so low agreements on these items would capture hyper-mentalisation, while some agreement would capture more adaptive levels of certainty of mental states, for a more detailed description of the scoring see Luyten and Fonagy (n.d.). The RFQ-8 has been found to possess satisfactory discriminant and convergent validity as well as other psychometric properties (Fonagy et al., 2016). The Swedish version of the scale is made available online by the developers and is free to use for research purposes (Luyten & Fonagy, n.d.). In the present study, internal reliability coefficients for the two subscales were α = .77

for RFQu and α =.80 for RFQc, both of which are of similar size to the internal reliability coefficients reported for the English-language original (Fonagy et al., 2016).

Insight. Insight was measured using a single subscale from a Swedish-language version of the 20-item Self-Reflection and Insight Scale (SRIS; Grant et al., 2002). The SRIS is designed to capture an individual's tendency for self-reflection (e.g., I frequently take time to reflect on my thoughts) and insight (e.g., I am usually aware of my thoughts). The SRIS is comprised of three subscales: Engagement in Self-Reflection (6 items) which tries to capture the time spent in self-reflection; Need for Self-Reflection (6 items); and Insight (8 items) (the latter being the only one used in this study). All items are scored on a 6-point scale from 1 = "strongly disagree" to 6 "strongly agree". Some scores are reversed scored and these are reversed before summarizing the scores for each subscale. The instructions of the scale do not specify a time-frame for respondents to adhere to. We translated the scale into Swedish, again adhering to the WHO guideline (WHO, n. d.). The English-language (original) version of the scale has been shown to possess satisfactory psychometric qualities (Grant et al., 2002). Cronbachs alphas for the subscales in this study were α = .81 for Engagement in SR, α = .90 for Need for SR and α = .86 for Insight, which were similar to the values reported for the scale in the original validation study (Grant et al., 2002).

Health related quality of life (HR-QoL). As stated in the introduction, HR-QoL was assessed with a Swedish-language version (Sullivan, Karlsson & Taft, 1997) of the 12-item SF-12 (Ware et al., 1996). This scale provides information on eight HR-QoL subdomains: general health (one item), physical functioning (two items), role physical (two items), bodily pain (one item), vitality (one item), social functioning (one item), role emotional (two items) and mental health (two items). All of the domains except for general health, for which the time-frame is not specified, are rated for the past 4 weeks and the domains can be divided into summary scales for mental (MCS) and physical health (PCS) where higher scores reflect better HR-QoL. We followed recommended scoring procedures wherein the scores obtained in this study is weighted and transformed into standardized scores with a mean of 50 and standard deviation of 10, according to norms from a sample representative of the general population in the U.S.A. (Gandek et. al. 1998). In the present sample, the observed mean for the mental health component (MCS) was 39.8, (SD = 13.4) and for 50.3 (SD = 9.6) for the physical health component. Thus, the present sample had slightly poorer mental-health specific QoL than the normative sample, while physical symptom-specific QoL was in the normal range. This is consistent with nearly half the sample reporting a current psychiatric diagnosis. The internal consistency coefficients for the SF-12 subscales in the present sample

ranged from α =.74 to α = .85, which was consistent with the internal consistency coefficients reported for the Swedish and English-language versions (Sullivan et al., 1997, Ware et al., 1996).

Satisfaction with life. As stated in the introduction, this construct was measured using a Swedish-language version (Hultell & Gustavsson, 2008) for the 5-item, Satisfaction with life scale (SWLS; Diener, 1985). The SWLS asks respondents to rate their degree of agreement on a 7 point scale (1 ="strongly disagree", 7 ="strongly agree") with five statements: 1) in most ways my life is close to ideal; 2) the conditions of my life are excellent; 3) I am satisfied with my life; 4) So far I have gotten the important things I want in life; and 5) If I could live my life over, I would change almost nothing. A total score is obtained for the whole scale. A time frame for respondents to adhere to is not specified. The measure has found to possess satisfactory psychometric properties in different populations in both Swedish and English samples (Diener, Inglehart & Tay, 2013; Hultell & Gustavsson, 2008; Jörgensen, Iwarsson & Lexell, 2017). In the present study, the Cronbach's alpha was .88 for the whole scale, which is similar to the α value reported in studies employing Swedish samples (Jörgensen, Iwarsson & Lexell, 2017).

Translation process and pilot test of translated measures

The three measures that where translated for the study (AS, ECR-RD12 and SRIS) were translated by the authors, a native Swedish speaking PhD-student, two native Swedish speaking master's students and our supervisor, a native English speaking professor in clinical psychology. As mentioned earlier the translations were carried out in accordance with recommendations from the World Health Organization (WHO, n. d.). This means that the measures were first translated to Swedish by the authors and then back-translated to English by either the PhD-student or the two master's students who were all blind to the original English versions. The back-translated english items were then compared to the original English items by our supervisor in order to determine whether sameness of meaning had been achieved. For the ECR-RD12 (Brenk-Franz et al. 2018), which is originally in German, we used the corresponding items from the longer ECR-R (Fraley et al., 2000) which has the same items but is available in English in order to be able to translate from English instead of German. In all cases, sameness of meaning was achieved according to our supervisor. The measures were then administered to native Swedish speakers of different ages (n=32) to correct any ambiguity and to receive feedback on the items. Overall, the items were considered understandable and unambiguous by the pilot sample and only one item on the

ECR-RD12 was changed from pluralis to singularis in order to better match the other items in the scale who are all in singularis.

Ethical considerations

During the conduct of this study, the rules for research with humans as set forth by the Swedish Research Council (Vetenskapsrådet, 2017) were followed. Participants were informed about the conditions of the study and that participation is voluntary, their data anonymous, that their data will be treated confidentially, and that they are free to withdraw at any point during completion of the survey. Before participants could enter the survey, they had to read about the purposes of the study and actively consent to the study conditions. The survey consisted of questions from widely used self-report measures as well as questions regarding demographics and health history that are commonly used in research utilizing those measures. There is no published evidence that participation in these kinds of anonymous survey studies cause any harm to the participants and thus participation was assumed to constitute an extremely low risk of harm. Nevertheless, participants were given contact information to the authors and advised to contact us for further guidance if any concerns or distress was caused by participation.

Regarding the security of participant data, only us, the authors of this paper, and our supervisor had access to the data set. Even so, the data did not contain any information that could be used to identify any of the participants. The two Facebook groups where the link to the survey was posted were closed groups, requiring membership to view the link. Members of the group were not able to see other group members' responses, neither could they tell whether any other member of the group had participated or not, unless the member chose to share it themselves with the group. This is also true for the emails sent out to students and the links posted on our private Facebook pages. In conclusion, the study meets the ethical objective of increasing knowledge for the benefit of participants and non-participants while at the same time causing no harm.

Data analysis

All statistical analyses were performed using IBM's SPSS 24. Prior to any further analyses to address the research questions, the SPSS Frequencies function was used to identify any out of range or missing values and to examine the distributions on the standardized measures by inspecting the mean, standard deviation, skew and kurtosis, histograms and Q-Q plots of the measures. The total scores and means on the standardized

questionnaires deviated slightly from the normal distribution in the sample as a whole and in each of the different subgroups (i.e., based on where participants were recruited) from which they were obtained. However, since correlations, t-tests and linear regressions generally are very robust to deviations from the normal distribution, especially with sample sizes >100, and tend to generate valid estimates of the parameters, no transformation of the data was undertaken as to do so would risk losing valuable information in an exploratory study (Pallant, 2010; Shaffer, 1991; Williams, Gomez Grajales & Kurkiewicz, 2013).

The total number of participants that responded to the survey was 193. Out of these, 2 were excluded due to reporting an age below 18, leaving a total of 191 participants with 70 (37%) participants being recruited from the extended network, 54 (28%) from the student group, 45 (23%) from the support groups and 22 (12%) from the mailing list. Before combining participants from the different data sources into one group, a set of screening analyses (i.e., independent t-tests and chi-square tests) were performed to see if the groups had approximately the same sex and age distributions and that there were no large and statistically significant differences on the standardized measures. During this procedure, it was found that the sex proportions were almost identical in all the different data sources. There were a few differences between the different sources with regards to age and scores on the standardized measures. Notably, there was a pattern of similarity between the extended social network of the authors and the student group, and between participants recruited from the anxiety/depression support groups and the mailing, with t-tests showing no significant differences on any of the measures between these two pairs.

With regards to independent t-tests between the pairs (i.e. comparisons between extended network or students with support groups or mailing list) significant differences were observed for age and scores on a majority of the standardized measures, with the support groups and mailing list tending to be older and to report lower satisfaction with life, health-related quality of life, insight and authenticity, and higher symptoms of anxiety and depression, and attachment-related anxiety and avoidance. Furthermore, participants from the student and extended social network groups reported higher certainty and lower uncertainty with regards to reflection on mental states (RFQ-8) than the participants from the support groups and the mailing list.

Other than this, there was substantial skewness in the distribution of data in both groups (student/social network vs support/mailing list) that upon combination of the data created a less skewed distribution for the sample as a whole. Therefore, the decision was taken that it was better to combine the data from the various participant groups (recruitment

sources) as this would better approximate a normal distribution, generate more valid parameter estimates, and increase power than would be achieved by stratifying all analyses by recruitment source (Shaffer, 1991). To further ensure that the combination of data was appropriate for this study, a partial correlation analysis was undertaken with recruitment source as a control variable, the results of this analysis was then compared to the results of the pairwise correlation analysis reported in Table 4 (see below in Results). This comparison showed that all the pairwise correlations remained significant with only small changes in absolute size, and no change in direction, when controlling for recruitment source. In conclusion, although there were differences in the variables under study between the different sources of recruitment, the relationships between variables showed approximately equal strengths and directions regardless of recruitment source, and combining the sources generated a larger sample with a distribution closer to normal.

Outlier's were defined in line with the recommendations of Hoaglin and Iglewicz (1987) with 2.2 as the multiplier used in an outlier labelling rule. Specifically, for a case to be considered an outlier, scores on one each of the independent and dependent variables had to deviate with a multiplier of 2.2 from the nearest quartile. Using this definition, no outliers were found in the present study.

There were some missing values on two of the standardized measures, HADS and SF-12, which were the only standardized measures in the survey where participants were allowed to "skip" individual items without completing them. We assessed whether these values were missing at random using Little's (1998) Missing Completely at Random (MCAR) test in SPSS. It tests the null-hypothesis that missing data are missing completely at random (or for ignorable reasons) and is used as a guide for researchers as to the appropriateness of using statistical imputation procedures to replace missing values without biasing or creating unreliable parameter estimates (Sterne et al., 2009). A p-value less than .05 suggests that missing data are missing for non-ignorable (non-random) reasons and one should proceed with extreme caution with any imputation procedure. The results of Little's MCAR test yielded p-values of .26 for the HADS and .10 for the SF-12 and thus the null hypothesis was not rejected. Following Sterne et al. (2009) missing data for the HADS and SF-12 were then imputed using an expectation maximization algorithm (EM). This was carried out using the multiple imputation (MI) function in SPSS.

Following report of the sample characteristics, and for clarity's sake, the results are organized according to the research questions provided at the end of the introduction.

Sample characteristic

Sociodemographics. A total of 193 individuals responded to the survey across the various recruitment sites. Two participants were excluded as they indicated they were below the age of 18 leaving a final sample of 191 participants. Table 1 provides data on the sociodemographic characteristics of this final sample. Not reported in the table, the age range for the final sample was 18-88 years with a mean of 33.9 (SD = 12.9). As can be seen in Table 1, the majority of participants identified as women, and over half stated that they were in a relationship and had no children. Consistent with the sample being comprised mainly of Lund University students and members of the authors' extended social network, nearly half had completed gymnasium and/or further levels of education, and less than half were employed on either a full- or part-time basis (Table 1).

Table 1

Demographic characteristics in proportions for the final sample (N=181).

Variable		N (%)
Gender	*Man*	45 (23.6%)
	Woman	142 (74.3%)
	Non-binary	3 (1.6%)
	Do not want to answer	1 (0.5%)
Relationship status	*Single*	74 (38.7%)
	In a relationship, not living together	28 (14.7%)
	In a relationship, living together	89 (46.6%)

Children	*No children*	118 (61.8%)
	1 child	22 (11.5%)
	2 children	34 (17.8%)
	3 or more children	17 (8.9%)
Employment	*Full-time*	58 (30.4%)
	Part-time	17 (8.9%)
	Unemployed	4 (2.1%)
	Student	58 (30.4%)
	Parental leave	3 (1.6%)
	Sick leave	21 (11%)
	Retired	7 (3.7%)
	Other	22 (11.5%)
	Do not want to answer	1 (0.5%)
Education	*Primary school*	9 (4.7%)
	Gymnasium	66 (34.6%)
	Post-Gymnasium	42 (22%)
	University degree	56 (29.3%)
	Masters or Phd	18 (9.4%)

Research question 1: To what extent does participants report having received a mental health diagnosis from a mental health professional and how do these participants differ from participants who do not report having been diagnosed (in terms of scores on all of the included standardized measures)?

Table 2 presents data on the proportion of participants reporting different (common) psychiatric conditions and the proportions who were or were not currently receiving treatment for this condition. Slightly less than half of all respondents reported a current psychiatric disorder and all but one of these participants indicated that the diagnosis was made by a mental health professional. Anxiety disorder (any) was the most common diagnosis followed by depression (Table 2). Table 3 presents the results of independent sample T-tests comparing mean scores (totals) on the standardized measures for participants who reported any current diagnosis (n=84) versus participants who reported having no current diagnosis (n=107). The group reporting any current diagnosis scored significantly higher on the anxiety and depression measures, and significantly lower on the HR-QoL and satisfaction with life measures. The current diagnosis group also scored significantly lower than the non-diagnosis group on the measures of authenticity, reflective functioning, and romantic attachment. Where significant differences between the two groups emerged, effect sizes (Cohen's *d*) were in the medium to large range (see Table 3).

The proportion of participants who scored above the recommended cut-off (i.e., total score ≥ 11 on either subscale) of the Hospital Anxiety and Depression Scale revealed that 41% (n= 79) of the sample scored above the clinical cut-off for anxiety and 17% (n= 33) for depression. These proportions are close to the 39% (n= 75) of participants that self-reported a current anxiety diagnosis but lower than the 32% (n=61) who reported a current diagnosis of depression (see Table 2).

Table 2

Proportions of participants reporting mental health problems and treatment

Variable	Disorder/problem present + Receiving treatment for the same N (%)	Disorder/problem present + Not receiving treatment for the same N (%)	Proportion of sample reporting disorder irrespective of treatment N (%)
Anxiety	38 (19.9)	37 (19.4)	75 (39.3)
Depression	41 (21.5)	20 (10.5)	61 (31.9)
Burnout	28 (14.7)	17 (8.9)	45 (23.6)
PTSD	13 (6.8)	10 (5.2)	23 (12.0)
OCD and related	7 (3.7)	10 (5.2)	17 (8.9)
ADHD	9 (4.7)	7 (3.7)	14 (7.3)
Learning Difficulties	2 (1.0)	7 (3.7)	9 (4.7)
Personality Disorder	3 (1.6)	6 (3.1)	9 (4.7)
Bipolar Disorder	3 (1.6)	2 (1.0)	5 (2.6)
Autistic Spectrum Disorder	1 (0.5)	2 (1.0)	3 (1.6)
Other	8 (4.2)	9 (4.7)	17 (9.0)

Note: Anxiety includes Generalized Anxiety Disorder, Panic Disorder, Agoraphobia, Social Anxiety Disorder and Specific Phobias. OCD and related includes Obsessive Compulsive Disorder (OCD), Dysmorphophobia, Hoarding, Tics/Tourettes Syndrome, Dermatillomania and Trichotillomania.

Table 3

Result of independent samples t-test on standardized measures by the presence versus absence of a current psychiatric disorder

Measure	Diagnostic groups						Group differences		
	Diagnosis present			No diagnosis present					
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*df*	*d*
Outcome measures									
HADS-A	12.99	4.51	84	6.43	3.84	107	10.84**	189	1.57
HADS-D	9.37	5.04	84	2.86	2.47	107	10.86**	114	1.64
SF12-M	27.39	11.32	84	44.17	9.91	107	10.91**	189	1.58
SF12-P	46.67	10.60	84	53.15	7.68	107	4.71**	146	0.70
SWLS	14.24	6.43	84	24.53	5.67	107	11.75**	189	1.70
Candidate moderator measures									
AS	45.08	13.95	84	56.75	11.35	107	6.22**	158	0.92
ECR-Avo	20.31	7.67	84	16.63	6.26	107	-3.56**	159	0.52
ECR-Anx	24.15	10.39	84	17.00	7.86	107	-5.24**	151	0.78
RFQc	0.93	0.76	84	1.51	0.81	107	5.05**	189	0.74
RFQu	0.95	0.79	84	0.44	0.49	107	-5.14**	130	0.77
SRIS-I	30.12	8.70	84	36.81	7.13	107	-5.71**	159	0.84

Note: HADS-A = Hospital Anxiety and Depression, anxiety subscale, HADS-D = depression subscale, SF12-M = 12-item Short Form Health Survey, mental component scale, SF12-P = physical component scale, SWLS = Satisfaction With Life Scale, AS = Authenticity Scale, ECR-Avo = Experiences in Close Relationships RD12, avoidance subscale, ECR-Anx = Experiences in Close Relationships RD12, anxiety subscale, RFQc = Reflective Functioning Questionnaire, certainty subscale, RFQu = Reflective Functioning Questionnaire, uncertainty subscale, SRIS-I = Insight subscale, **p=<.001. *d* = effect size measured by Cohen's d.

Research Question 2: To what extent is authenticity correlated with reflective functioning, insight, adult romantic attachment, anxiety, depression, HR-QoL, and life satisfaction in a convenience sample of Swedish adults?

Pairwise Pearson correlations between all standardized measures is presented in Table 4. As expected, authenticity was correlated with anxiety, depression, and life satisfaction. The correlations were significant and mostly in the moderate range. This is, to our knowledge the first study to report the correlations between authenticity and HR-QoL, which again was in the moderate range and positive. As mentioned in the introduction, little research has been undertaken to see how the other candidate moderator variables (reflective functioning, insight, romantic attachment) relate to anxiety, depression, HR-QoL, and life satisfaction. As can be seen in Table 4, these candidate moderator variables correlated significantly with these indices of outcome in the moderate range and expected direction.

Table 4

Pairwise Pearson correlation coefficients between all standardized measures

Variable	SWLS	SF12(P)	SF12(M)	HADSd	HADSa	AS	ECR-X	ECR-A	RFQc	RFQu	SRIS-I
SWLS	1										
SF12(P)	.373**	1									
SF12(M)	.714**	.052	1								
HADSd	-.753**	-.338**	-.794**	1							
HADSa	-.689**	-.229**	-.781**	.720**	1						
AS	.518**	.134	.479**	-.461**	-.528**	1					
ECR-X	-.455**	-.123	-.439**	.685**	.463**	-.407**	1				
ECR-A	-.456**	-.115	.-.400**	.415**	.279**	-.429**	.227**	1			
RFQc	.372**	.180*	.353**	-.341**	-.490**	.486**	-.334**	-.196**	1		
RFQu	-.406**	-.217**	-.333**	.401**	.489**	-.619**	.423**	.307**	-.660**	1	
SRIS-I	.490**	.258**	.419**	-.460**	-.530**	.623**	-.362**	-.412**	.623**	-.685**	1

Note: SWLS = Satisfaction With Life Scale, SF12(P) = Short Form 12-item health survey, physical component subscale, SF12(M) = Short Form 12-item health, survey mental component subscale, HADSa = Hospital Anxiety and Depression Scale, anxiety subscale, HADSd = Hospital Anxiety and Depression Scale, depression subscale, AS = Authenticity Scale, ECR-X = Experiences in Close Relationships, anxiety subscale, ECR-A = Experiences in Close Relationships, avoidance subscale, RFQc = Reflective Functioning Questionnaire, certainty of mental states subscale, RFQu = Reflective Functioning Questionnaire, uncertainty of mental states subscale, SRIS-I = Self-Reflection and Insight Scale, insight subscale, SRIS-N = Self-Reflection and Insight Scale, need for self-reflection subscale, SRIS-E = Self-Reflection and Insight Scale, engagement in self-reflection subscale. * = p < .05. ** = p < .01. Questionnaire, certainty of mental states subscale, RFQu = Reflective Functioning Questionnaire, uncertainty of mental states subscale, SRIS-I = Self-Reflection and Insight Scale, insight subscale* = p < .05. ** = p < .01.

Research Question 3: How much of the variance in anxiety and depression (separately) is explained by authenticity after controlling for reflective functioning, insight and adult romantic attachment (separately and in the order specified in this sentence)?

Two hierarchical multiple regression was performed to explore the contribution of reflective functioning, insight, adult romantic attachment and authenticity to the variance in anxiety and depression. As each regression analysis was conducted, we generated the appropriate plots (scatterplot, p-p plot, histograms of standardized residuals) and generated the appropriate statistics (correlation matrix, tolerance statistic, variance inflation factor) in order to determine whether the assumptions (linearity, no multicollinearity, homoscedasticity, independence of errors, normality of errors) of linear regression were met. It was found that the assumptions were met for each of the analyses.

For the two regression analyses with anxiety and depression (HADS-A and HADS-D, respectively) as the dependent variables, total or standardized scores on the measures of certainty and uncertainty in reflective functioning (RFQ-8), insight (SRIS), avoidance and anxiety in romantic attachment (ECR-RD12) and authenticity (AS) were entered in separate blocks (in the order specified in this sentence). This order of entry is theoretically driven by the assumption that reflective functioning and insight are assumed to be similar to each other and underlying the other constructs in that insight and reflective functioning is subsumed in the definition of authenticity outlined above as well as a necessary prerequisite in adaptive romantic attachment. For these reasons, it is important to control for reflective functioning and insight when assessing the relationships between adult romantic attachment and authenticity with the dependent variables. For the two regression analyses with HR-QoL and life satisfaction as (separate) dependent variables, the first block was total scores on the depression scale, followed by the anxiety scale, and the candidate moderator variables separately, and in the order specified in the preceding sentence. Results for these two analyses are presented in tables 5 and 6, respectively.

Table 5

Results of hierarchical multiple regression analysis showing contributions of reflective functioning, insight, adult romantic attachment and authenticity to observed variance in depression as measured by HADS-D

Independent Variable	Model 1			Model 2			Model 3			Model 4			Model 5			Model 6		
	B	SE B	β	B	SE B	β	B	SE B	B	B	SE B	β	B	SE B	β	B	SE B	β
RFQc	-2.03	.408	-.341**	-.813	.528	-.136	-.199	.539	-.033	-.431	.521	-.072	-.308	.500	-.051	-.271	.499	-.045
RFQu				2.26	.645	.311**	1.07	.706	.147	.852	.681	.117	.258	.668	.035	-.039	.688	-.005
SRIS-I							-.199	.055	-.339**	-.130	.055	-.222*	-.118	.053	-.201*	-.096	0.54	-.163
ECR Avo										.192	.048	.274**	.174	.046	.248**	.155	.047	.222**
ECR Anx													.143	.034	.278**	.134	0.34	.260**
AS																-.051	.030	-.140
R^2		.116			.171			.226			.287			.349			.359	
R^2 change		.116			.054			.055			.061			.062			.010	
F for change		24.907**			12.348**			13.297**			15.983**			17.623**			2.770	

Note: SRIS-I = Self-Reflection and Insight Scale, insight subscale, AS = authenticity scale, RFQc = Reflective Functioning Quetionnaire, certainty subscale, RFQu = Reflective Functioning Questionnaire, uncertainty subscale, ECR Anx = Experiences in Close Relationships RD12, anxiety subscale, ECR Avo = Experiences in Close Relationships, avoidance subscale. ** = $p < .001$, * = $p < .05$.

Table 6

Results of hierarchical multiple regression analysis showing contributions of reflective functioning, insight, adult romantic attachment and authenticity to observed variance in anxiety as measured by HADS-A

Independent Variable	Model 1			Model 2			Model 3			Model 4			Model 5			Model 6		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
RFQc	-3.09	.399	-.490**	-1.87	.516	-.297**	-1.291	.527	-.205*	-1.367	.530	-.217*	-1.24	.508	-.197*	-1.18	.500	-.187*
RFQu				2.252	.630	.293**	1.125	.691	.146	1.054	.692	.137	.445	.678	.058	-.041	.690	-.005
SRIS-I							-.187	.053	-.303**	-.165	.056	-.266*	-.152	.054	-.245*	-.115	.055	-.187*
ECR Avo										.063	.049	.085	.045	.047	.060	.014	.047	.019
ECR Anx													.146	.035	.270**	.132	.034	.242**
AS																-.083	.030	-.217*
R^2		.240			.288			.332			.338			.397			.420	
R^2 change		.240			.048			.044			.006			.058			.023	
F for change		59.732**			12.774**			12.288**			1.663			17.914**			7.400*	

Note: SRIS-I = Self-Reflection and Insight Scale, insight subscale, AS = authenticity scale, RFQc = Reflective Functioning Quetionnaire, certainty subscale, RFQu = Reflective Functioning Questionnaire, uncertainty subscale, ECR Anx = Experiences in Close Relationships RD12, anxiety subscale, ECR Avo = Experiences in Close Relationships RD12, avoidance subscale. ** = $p < .001$, * = $p < .05$.

Research question 4: How much of the variance in HR-QoL and life satisfaction (separately) is explained by authenticity after controlling for depression, anxiety, reflective functioning, insight and adult romantic attachment (separately and in the order specified in this sentence)?

Two hierarchical multiple regression was performed to explore the contribution of depression, anxiety, reflective functioning, insight, adult romantic attachment and authenticity to the variance in HR-QoL and life satisfactions. Again, as each regression analysis was conducted, we generated the appropriate plots (scatterplot, p-p plot, histograms of standardized residuals) and generated the appropriate statistics (correlation matrix, tolerance statistic, variance inflation factor) in order to determine whether the assumptions (linearity, no multicollinearity, homoscedasticity, independence of errors, normality of errors) of linear regression were met. It was found that the assumptions were met for each of the analyses.

For these two regression analyses, total or standardized scores on the measures of depression (HADS-D), anxiety (HADS-A), certainty and uncertainty in reflective functioning (RFQ-8), insight (SRIS), avoidance and anxiety in romantic attachment (ECR-RD12) and authenticity (AS) were entered in separate blocks (in the order specified in this sentence). For the two regression analyses with HR-QoL and life satisfaction as (separate) dependent variables, the first block was total scores on the depression scale, followed by the anxiety scale, and the candidate moderator variables separately, and in the order specified in the preceding sentence. Results for these two analyses are presented in tables 7 and 8, respectively.

Table 7

Results of hierarchical multiple regression analysis showing contributions of depression, anxiety, reflective functioning, insight, adult romantic attachment and authenticity to observed variance in life satisfaction, (blocks 1 to 4)

Independent variable	Model 1			Model 2			Model 3			Model 4		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
HADS-D	-1.188	.076	-.753**	-.840	.103	-.533**	-.843	.103	-.534**	-.835	.104	-.529**
HADS-A				-.457	.098	-.305**	-.416	.106	-.278**	-.408	.107	-.273**
RFQc							.506	.492	.054	.300	.593	,032
RFQu										-.453	.726	-.039
SRIS-I												
ECR-Avo												
ECR-Anx												
AS												
R^2		.566			.611			.613			.614	
R^2 change		.566			.045			.002			.001	
F for change		246.888**			21.691**			1.058			.389	

Note: HADS-D = Hospital Anxiety and Depression Scale, depression subscale, HADS-A = Hospital Anxiety and Depression Scale, anxiety subscale, SRIS-I = Self-Reflection and Insight Scale, insight subscale, AS = authenticity scale, RFQc = Reflective Functioning Questionnaire, certainty subscale, RFQu = Reflective Functioning Questionnaire, uncertainty subscale, ECR-Anx = Experiences in Close Relationships RD12, anxiety subscale, ECR-Avo = Experiences in Close Relationships RD12, avoidance subscale. ** = p < .001, * = p < .05

Table 7 (cont.)

Results of hierarchical multiple regression analysis showing contributions of depression, anxiety, reflective functioning, insight, adult romantic attachment and authenticity to observed variance in life satisfaction, (blocks 5 to 8)

Independent variable	Model 5			Model 6			Model 7			Model 8		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
HADS-D	-.811	.105	-.514**	-.712	.106	-.451**	-.685	.107	-.434**	-.684	.107	-.433**
HADS-A	-.387	.107	-.259**	-.425	.105	-.284**	-.396	.105	-.265**	-.371	.106	-.248**
RFQc	.005	.611	.001	.196	.599	.021	.182	.596	.019	.173	.593	.018
RFQu	.135	.790	.012	.278	.772	.024	.538	.781	.047	.858	.805	.075
SRIS-I	.115	.063	.124	.062	.064	.067	.064	.063	.069	.043	.064	.047
ECR-Avo				-.182	.057	-.164*	-.179	.056	-.162*	-.160	.057	-.145*
ECR-Anx							-.076	.042	-.093	-.069	.042	-.085
AS										.056	.036	.099
R^2		.621			.641			.647			.652	
R^2 change		.007			.020			.006			.005	
F for change		3.325			10.329*			3.211			2.423	

Note: HADS-D = Hospital Anxiety and Depression Scale, depression subscale, HADS-A = Hospital Anxiety and Depression Scale, anxiety subscale, SRIS-I = Self-Reflection and Insight Scale, insight subscale, AS = authenticity scale, RFQc = Reflective Functioning Questionnaire, certainty subscale, RFQu = Reflective Functioning Questionnaire, uncertainty subscale, ECR-Anx = Experiences in Close Relationships RD12, anxiety subscale, ECR-Avo = Experiences in Close Relationships RD12, avoidance subscale. ** = p < .001, * = p < .05.

Table 8

Results of hierarchical multiple regression analysis showing contributions of depression, anxiety, reflective functioning, insight, adult romantic attachment and authenticity to observed variance in health-related quality of life (mental component, blocks 1 to 4)

Independent variable	Model 1			Model 2			Model 3			Model 4		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
HADS-D	-2.134	.119	-.794**	-.1.292	.149	-.480**	-1.290	.150	-.480**	-1.324	.149	-.493**
HADS-A				-1.109	.142	-.435**	-1.150	.153	-.451**	-1.89	.153	-.466**
RFQc							-.513	.710	-.032	.489	.847	,030
RFQu										2.205	1.037	.112*
SRIS-I												
ECR-Avo												
ECR-Anx												
AS												
R^2		.630			.721			.722			.729	
R^2 change		.630			.091			.001			.007	
F for change		322.003**			61.347**			.522			4.519*	

Note: HADS-D = Hospital Anxiety and Depression Scale, depression subscale, HADS-A = Hospital Anxiety and Depression Scale, anxiety subscale, SRIS-I = Self-Reflection and Insight Scale, insight subscale, AS = authenticity scale, RFQc = Reflective Functioning Questionnaire, certainty subscale, RFQu = Reflective Functioning Questionnaire, uncertainty subscale, ECR-Anx = Experiences in Close Relationships RD12, anxiety subscale, ECR-Avo = Experiences in Close Relationships RD12, avoidance subscale. ** = p < .001, * = p < .05.

Table 8 (cont.)

Results of hierarchical multiple regression analysis showing contributions of depression, anxiety, reflective functioning, insight, adult romantic attachment and authenticity to observed variance in health-related quality of life (mental component, blocks 5 to 8)

Independent variable	Model 5			Model 6			Model 7			Model 8		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
HADS-D	-1.322	.151	-.492**	-1.195	.154	-.445**	-1.165	.156	-.433**	-1.164	.155	-.433**
HADS-A	-1.187	.154	-.465**	-1.235	.152	-.484**	-1.205	.153	-.473**	-1.167	.155	-.458**
RFQc	.462	.881	.029	.709	.869	.044	.694	.867	.043	.681	.864	.042
RFQu	.2.259	1.139	.115*	2.444	1.120	-.125*	2.724	1.137	.139*	.3.191	1.171	.163*
SRIS-I	.011	.091	.007	-.057	.092	-.036	-.056	.092	.035	-.086	.094	-.054
ECR-Avo				-.235	.082	-.125*	-.232	.082	-.123*	-.204	.084	-.108*
ECR-Anx							-.081	.061	-.059	-.072	.061	-.052
AS										.082	.053	.085
R^2		.721			.732			.733			.735	
R^2 change		.000			.012			.002			.003	
F for change		.013			8.201*			1.759			2.444	

Note: HADS-D = Hospital Anxiety and Depression Scale, depression subscale, HADS-A = Hospital Anxiety and Depression Scale, anxiety subscale, SRIS-I = Self-Reflection and Insight Scale, insight subscale, AS = authenticity scale, RFQc = Reflective Functioning Questionnaire, certainty subscale, RFQu = Reflective Functioning Questionnaire, uncertainty subscale, ECR-Anx = Experiences in Close Relationships RD12, anxiety subscale, ECR-Avo = Experiences in Close Relationships RD12, avoidance subscale. ** = p < .001, * = p < .05.

Discussion

As put by Thoreau (1841), *"we are constantly invited to be who we are"*, that is to say that life puts us to constant test and in every instance, we have the choice of being true to ourselves or not. Alluded to here is the notion that adversity is an inevitable part of existence and that human beings reach their full potential by rising to the challenges that life puts us up against by keeping the focus on what is truly important to us; a way of life characterized by courage, self-knowledge and determination, sometimes referred to as authentic living (May, 1981; Rogers, 1959, 1964, 1980; Winnicott, 1965). This study has focused on the role of authenticity in symptoms of anxiety and depression as well as in health-related quality of life (HR-QoL) and satisfaction with life. In addition, the study also investigated the role of authenticity in these outcomes when considering other variables of potential relevance, namely adult romantic attachment, reflective functioning, and insight. Overall, the results of the study add to a small body of evidence that higher levels of authenticity (as measured by self-report) are associated with fewer symptoms of anxiety and depression and higher satisfaction with life. Our finding that authenticity was moderately correlated with HR-QoL is an addition to the literature. While not a primary aim of the study, this is the first study to our knowledge to report on the relationships between authenticity and reflective functioning, insight, and romantic attachment. We observed moderate to strong correlations between authenticity and these variables; the strongest between authenticity and insight. We now discuss the findings in greater detail in the order of the research questions.

Before proceeding to the main findings, we would like to address the characteristics of the recruited sample. Our initial plan was to recruit participants that we thought would have a high likelihood of mental health difficulties and so we posted the survey on websites providing support to adults with anxiety and depression. However, the response rate was extremely low. Upon further reflection, and discussion with our supervisor, we decided that it would make sense to also recruit participants from the general population. This would allow us to assess whether authenticity was important to the frequency of anxiety/depressive symptoms and HR-QoL and life satisfaction in individuals who might have fewer symptoms and generally higher level of functioning than individuals who seek actively seek social support from a website for people with anxiety and depression. The gender proportions among participants recruited from each source were almost identical, approximately 75% identifying as women. After a set of initial screening analyses, participants from the different sources were merged into a single group, primarily to increase the statistical validity of the study but this does warrant comment regarding the external validity of our findings.

In the merged group 44% reported having received a mental health diagnosis by a mental health professional, which was also corroborated by scores on measures of symptoms of anxiety and depression where 41% scored over the clinical cut-off for anxiety and 17% scored over the clinical cut-off for depression. This is higher than the estimated 12-month prevalence of anxiety and mood disorders from epidemiological studies conducted in Europe and vastly higher than the point-prevalence of depression and anxiety in the Swedish general population (10.8% for depression and 14.7% for anxiety) (Johansson et al., 2013; Wittchen et al., 2011). Furthermore, mean scores for the present sample on the mental component of health-related quality were lower compared to the means of the general US-population from the original survey (Gandek et al., 1998).

As the recruitment procedure used heterogeneous sources ranging from support groups and potential participants in clinical trials to Lund university students and their friends, caution is warranted regarding the generalizability of these findings. The fact that the correlations between the study variables remained a similar order of magnitude and statistically significant after controlling for recruitment source argues in favour of our combining the data sources and that some tentative inferences can be drawn from our analyses. Furthermore, the size of the observed correlations were consistent with those reported in previous studies, which also drew upon quite heterogenous samples (including university students) (Boyraz & Kuhl, 2015; Brunell et al., 2010; English & John, 2013; Fonagy et al., 2016; Grant et al., 2002; Grégoire, Baron, Ménard & Lachance, 2014; Heppner et al., 2008; Stanton & Campbell, 2014). We were further encouraged by the fact that that compared to participants who did not report any current psychiatric diagnosis, those who did tended to report, not only higher symptoms and lower health-related quality of life and satisfaction with life, but also reported substantially less authenticity, less insight, and being more uncertain when it comes to reflecting on their own and other's mental states, while also reporting more attachment-related avoidance and anxiety in romantic relationships than individuals who do not report having been diagnosed with a mental health disorder. As such the relationships among the study variables performed similarly to previous studies, suggesting that the employed methodology might have been valid for addressing our research questions.

Research question 1: To what extent does participants report having received a mental health diagnosis from a mental health professional and how do these participants differ from participants who do not report having been diagnosed (in terms of scores on all of the included standardized measures)?

Nearly half (43.9%) of the participants reported having been diagnosed with a mental health diagnosis by a mental health professional. This was further corroborated by self-reported symptoms of anxiety and depression (as measured by the HADS) with 41% scoring above the clinical cut-off for anxiety and 17% scoring above the clinical cut-off for depression. The group who self-reported having a mental health diagnosis differed from the group who didn't by medium to large effect sizes on all of the independent variables ($d=0.52$ to $d=0.92$) and large effect sized for all of the dependent variables ($d=1.57$ to $d=1.70$). For authenticity the effect size difference was $d=0.92$, indicating a 74% chance that a person picked at random from the diagnosis group will have reported lower authenticity than a person picked at random from the non-diagnosis group. To our knowledge this is the first study that has reported group differences in self-reported authenticity between a clinical and a non-clinical group. These findings should be considered with caution as the diagnoses were self-reported and not assessed via structured clinical interviews, however the similar levels of self-reported symptoms of anxiety and depression give some encouragement regarding the validity of the self-reported of the self-reported diagnoses. While tentative, our results lend preliminary support to the relevance of the included constructs in psychological health. However, further research is needed in order to further establish these relationships.

Research question 2: To what extent is authenticity correlated with reflective functioning, insight, adult romantic attachment, anxiety, depression, HR-QoL, and life satisfaction in a convenience sample of Swedish adults?

Consistent with expectation, and where previous research was available, we obtained moderate and statistically significant correlations between authenticity and symptoms of anxiety and depression, as well as with HR-QoL and satisfaction with life. The size of the correlations between authenticity and anxiety and depression were the same size and direction as reported by Bryan et al. (2017) in their study of undergraduates and as found by Woods et al. (2008) in adults recruited from the community. Given that the present sample recruited Swedish participants and the two previous studies recruited Americans, it appears that the relationship between authenticity and anxiety/depression is similar across these two cultures and a across a wide age-range of adults.

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Again, this is the first study to report on the relationship between authenticity and HR-QoL. In the present study, only the impact of emotional symptoms on everyday functioning (MCS score from the SF-12), and not the impact of physical symptoms, was significantly correlated with authenticity. This is consistent with studies cited in the introduction which found that the number of and severity of physical health problems was not related to authenticity while emotional symptoms were. These findings require further investigation and replication but suggest that authenticity may exert its influences primarily on emotional functioning and mental health.

While not a primary aim of the present study, this is the first to report on the bivariate correlations between authenticity, reflective functioning, insight and romantic attachment. The correlations were all in the expected direction, significant (p<.01) and of moderate size (r = -.41 to -.49), except for insight which correlated in the strong range with authenticity (r = -.62). These results can be interpreted in a couple of non-exclusive ways. One is that the size of the correlations suggest that they are reasonably distinct constructs, i.e. that they measure different things. The other, and particularly for authenticity and insight, is that they are overlapping constructs either in terms of their phenomenology (structural components) or that they share similar underlying mechanisms. Especially as authenticity can be conceptualized as (1) the degree to which the individual's true physiological states, emotions and deep-level cognition are allowed into conscious awareness and (2) the degree to which this awareness can be converted into action (Rogers, 1959; Wood et al., 2008). The first part of this conceptualization, known by writers on authenticity as *self-alienation* is also a common conceptualization of insight, both in the literature more broadly as well as by the developers of the measure used in current study (Castonguay & Hill, 2007; Grant et al., 2002). Furthermore, some writers on authenticity argue that self-knowledge or insight (as opposed to self-alienation) has an embodied component to it, i.e. an individual who rarely or never acts according to his/her true self-knowledge will in the long-term develop a false self, leading the individual to feel out of touch with him-/herself (Winnicott, 1965). Taken together, these theoretical accounts imply both overlap and a bi-directional broaden-and-build relationship between authenticity and insight.

Again, further study is needed, with larger/different samples, and different measures of the study variables. Nevertheless, the size of the correlations among the candidate moderator variables, and the fact that authenticity, reflective functioning, insight and romantic attachment all showed similar-sized correlations with HR-QoL and life satisfaction, is important for understanding the results of the regression analyses that are now discussed.

Research Question 3: How much of the variance in anxiety and depression (separately) is explained by authenticity after controlling for reflective functioning, insight and adult romantic attachment (separately and in the order specified in this sentence)? And Research Question 4; How much of the variance in HR-QoL and life satisfaction (separately) is explained by authenticity after controlling for depression, anxiety, reflective functioning, insight and adult romantic attachment (separately and in the order specified in this sentence)?

Research question three and four was addressed through four hierarchical multiple regression analyses, one for each of the four dependent variables; symptoms of anxiety and depression, HR-QoL and life satisfaction. In relation to depression, (mental) health-related QoL, and life satisfaction, authenticity did not make a significant contribution to the variance in these outcomes after controlling for reflective functioning, insight and romantic attachment. This may be the result of the moderately high correlations between authenticity and the other independent variables in the regression equations or that authenticity simply does not add anything beyond these variables. A close look at the results suggest that for HR-QoL and life satisfaction, almost all of the variance is accounted for by anxiety and depression and the other candidate moderator variables are not significant or contribute very little to the observed variance. Only attachment-related avoidance and uncertainty about mental states (hypo-mentalisation) played a significant but small role over and above the influences of anxiety and depression for HR-QoL and for life satisfaction, only attachment-related avoidance played a significant but small role. These results should however be interpreted with caution as the present study did not test for moderation or moderated mediation and it is possible that other variables, including authenticity, could play a role in HR-QoL and life satisfaction through an indirect effect with symptoms as a mediator or by moderating the relationship between symptoms of anxiety and depression with life satisfaction and HR-QoL. The most parsimonious conclusion based on this single study is that authenticity may have direct effects upon the individual outcome variable studied here (as suggested by the pairwise correlation analyses) but may not actually act as moderator or buffer of the relationship between anxiety/depression and HR-QoL and life satisfaction (as suggested by the regression analyses).

By way of contrast, our regression analysis suggested that authenticity was a contributor to symptoms of anxiety after reflective functioning, insight and romantic attachment have been accounted for. Again, caution is warranted as the interrelationships

between these constructs are likely complex and they are, at least in part, overlapping constructs.

Summary. The models including all of the candidate moderator variables predicted 42% of the variance in anxiety symptoms and 34.9% of depression symptoms. The models containing anxiety and depression and then the candidate moderator variables predicted 64.1% of the variance in life satisfaction and 73.2% of the variance mental health-related QoL. Regarding the contribution of our different candidate moderator variables to these models; authenticity has a unique contribution to symptoms of anxiety but not depression after accounting for the effects of adult romantic attachment, reflective functioning and insight. We also saw a contribution made by insight, certainty about mental states (hyper-mentalising) and attachment-related anxiety to the severity of anxiety symptoms, as well as a notable contribution of adult romantic attachment, primarily the avoidance subscale, to the variance in anxiety, depression, HR-QoL and life satisfaction. Indeed, the results from the analysis with depression as the dependent variable showed that the two subscales of the adult romantic attachment measure (ECR-RD12) had the strongest influences on depression out of the studied variables, with insight making a slightly more modest, but significant, contribution in every model it was entered, except the final one where only the two adult romantic attachment subscales remained significant contributors to the model.

Reflective functioning only made a significant contribution to the variance in symptoms of anxiety in terms of the certainty subscale and HR-QoL in terms of the uncertainty subscale. This might be due to conceptual issues in the operationalization of the construct with the measure used in the current study as the certainty subscale is supposed to measure a tendency toward hyper-mentalisation, i.e. higher scores indicating being *too* certain about the mental states of others (Fonagy et al, 2016). Since the certainty subscale was strongly correlated with insight and negatively correlated with symptoms of anxiety and depression, the validity of the measure in the context of the current study can be questioned and interpretations with regards to the role of reflective functioning and/or mentalisation should be made with this in consideration. Two possibilities is that either the certainty subscale in this study has been an indicator of good mentalization as opposed to hyper-mentalisation or the results indicate that being certain about the mental states of others might have an anxiety reducing effect.

Again, caution is warranted due to the lack of testing of moderation and/or mediation, especially as the variables included in these analyses are theoretically related constructs. Thus, the lack of contribution of some of the variables to the models might be due to complex

relationships between the variables. It is for example reasonable to assume that that individuals with secure attachments tend to report lower attachment-related avoidance and anxiety. Also, since a secure attachment is also theoretically related to better reflective functioning and likely also insight (Fonagy, Gergely & Target, 2007; Fonagy, Gergely, Jurist & Target, 2002) and securely attached individuals are likely to feel more confident and safe in expressing their innermost thoughts and feels, not being as likely to expect rejection and/or criticism (Brennan, Clark & Shaver, 1998), thus likely being more authentic, it is reasonable to assume that some of the relationships that have been investigated in the present study have been obscured by one another.

Finally, the purpose of this study was to conduct an exploratory analysis of the significance of authenticity in outcomes relevant to mental health in the context of theoretically related constructs. As such, the results of our analyses adds to the evidence supporting that authenticity might play a role in symptoms of anxiety and depression as well as health-related quality of life and satisfaction with life, and, that this role might be meaningful even after accounting for already established variables such as adult romantic attachment, reflective functioning and insight, however the results only provide a low level of insight into, the likely complex, relationships between these variables. A possible implication of this is that in overcoming anxiety, not only knowledge of our true self is important, but that also acting on that knowledge plays an important role. Still, these findings are to be regarded as highly tentative.

Limitations of the study and suggestions for future research

Apart from the already discussed limitations in terms of external validity, recruitment procedure and statistical analysis, the cross-sectional design of the study means that no causal inferences can be made from the results of the current study. In addition to this, the recruitment procedure and sample characteristics warrant even further comments. Both the recruitment with its low level of control, lack of matching or random sampling, and the characteristics of the participants recruited, suggest that the sample may not representative of either a clinical population or the general population. This means that the results of this study should be interpreted with caution and future studies should make effort to recruit participants from less obscure sources, i.e. use clinical populations, or employ random sampling.

It should also be mentioned that three of the measures used in this study were translated by us primarily with the help of our supervisor and a clinician with long experience of carrying out psychodynamic therapy, supervision and training, and who is currently

undertaking a PhD studying mechanisms of change in psychotherapy for anxiety and depression. While we adhered to international norms for translating measures, it is possible that our translations reduced the sensitivity of the original measures. We draw some confidence in our translations in that we observed similar-sized correlations between these translated measures and previously validated, Swedish-language questionnaires.

Another limitation, as discussed above, is the lack of tests of mediation and/or moderation. In our view researchers interested in any of the theoretical constructs investigated in this study would do well to test for mediation and/or moderation in future research. In particular, in the light of our results, we want to encourage future investigators to test a model of parallel mediation with adult romantic attachment as an independent variable and authenticity and insight as mediators with similar dependent variables. Another important issue for future investigators to address is that the data on authenticity thus far has been correlational, highlighting the need for longitudinal and experimental studies of authenticity. Finally, a limitation of the current study is the fact that most of the included measures have not been validated in a Swedish context with sufficient cultural similarity between Sweden and other Western European countries such as England and France having been assumed by the researchers. However, all of the measures used showed satisfactory internal consistency and, with RFQ-8 as an exception, correlated with the other constructs in an expected manner in the current study.

Conclusions

This study adds to emerging evidence indicating that authenticity is related to symptoms of anxiety and depression as well as health-related quality of life and life satisfaction. Further, the findings add to the already existing research indicating that symptoms of anxiety and depression likely play a large role in health-related quality of life and satisfaction with life. In addition, the present study adds the following findings to the literature; (1) that individuals who report having received a mental health diagnosis from a mental health professional also tend to report substantially lower levels of authenticity (d=0.92), indicating that authenticity may be a clinically relevant construct for psychological treatments and preventive efforts to take into account, however this should be studied further in experimental and longitudinal designs, (2) that the role of authenticity in symptoms of anxiety is likely meaningful even after theoretically implied concepts such as insight and reflective functioning have been taken into account, and (3) that adult romantic attachment plays a role in all of the studied outcomes. A possible poetic interpretation of these results is

that, while being true to yourself is important – it's being true with your loved ones that really matter.

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