Default defenses: the character defenses of attachment-anxiety and attachment-avoidance

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Abstract

Contemporary attachment researchers claim that attachment-anxiety is associated with a hyperactivating defense strategy while attachment-avoidance is associated with a deactivating defense strategy. However, to date, no study has comprehensively examined the basic patterns of specific defense expression in the two dimensions of attachment insecurity (anxiety/avoidance). To address this research gap, the current study aimed to assess the character defenses associated with attachment-avoidance and attachment-anxiety, incorporating a broad spectrum of psychological defenses. The main objective was to understand what differentiates attachment-avoidance and attachment-anxiety in defensive functioning. In this study of online questionnaire design ($N = 250$), university undergraduates aged between 17 to 65 completed the Experiences in Close Relationship Scale (ECR) and the Defense Style Questionnaire (DSQ-60). The results show that the two dimensions of insecure attachment exhibit different defensive patterns. Regarding the main findings, attachment-avoidance uniquely predicted defensive *isolation,* and attachment-anxiety uniquely predicted the defenses *splitting, projective identification, anticipation, acting out*, *passive-aggression, reaction formation,* and *undoing*. Overall, the results indicate that attachment-anxiety is a significant predictor of global defensive functioning, over and above that of attachment-avoidance. One implication of this study is that the two-dimensional model of adult attachment may offer a promising framework for organizing psychological defenses. We discuss the significance of this concerning the future of the empirical study of psychological defenses. The discussion also considers the clinical application and relevance to attachment-based psychotherapy.

Keywords Attachment-anxiety · Attachment-avoidance · Character defenses · Deactivating defenses · Hyperactivating defenses · Insecure working models

Introduction

Traditionally, psychological defenses are patterns of emotions, thoughts, or behaviours that are relatively involuntary, "unconscious" coping processes (Cramer, 2015; Vaillant, 2020). The concept of psychological defense mechanisms emerged from the psychoanalytic literature in the late nineteenth century, beginning with Sigmund Freud (1894), and followed by Anna Freud (1937/2018). Bowlby (1980), in turn, developed a model of defense within the framework of his attachment theory. Over time, the study of defense mechanisms has remained an important topic in behavioural science, particularly in personality and interpersonal behaviour (Cramer, 1998). Psychological defenses are now typically defined as mechanisms that mediate the individual's response to emotional conflicts and external stressors (DSM-5, APA, 2013). Contemporary researchers also generally regard defense mechanisms as individuals' relatively stable, enduring characteristics (Prunas et al., 2019).

The construct of defense mechanisms is a relevant study topic in both subclinical and clinical populations. Several recent studies have demonstrated defenses' clinical usefulness and extensive predictive value. Within the subclinical population, defenses are a significant indicator of everyday escapism behaviour. For example, defenses predict problematic internet use (Vally et al., 2020). In the clinical realm, research has also shown clear relationships between certain defenses and personality disorders (Perry et al., 2013). For example, defenses that act by distorting one's image of self and others (e.g., splitting) and preventing experiences from being connected to one another or known (e.g., dissociation

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and repression) characterize borderline personality. On the other hand, defenses that target the self, either by providing a sense of omnipotence and devaluating others characterize a narcissistic personality. In addition, there is a growing body of studies on defenses such as repressive coping in response to medical conditions (e.g., cancer, Di Guiseppe et al., 2021).

Understanding defenses is also relevant for treatment purposes. In terms of diagnosis, defense styles can help identify personality pathology. Concerning intervention, defenses can predict treatment response in depressed patients (de Roten et al., 2021). A systematic assessment of defense mechanisms can also help therapists monitor changes during treatment. For example, there is evidence that focusing upon improving defensive functioning within psychotherapy mediates improvement in other aspects of experience and psychosocial functioning (Perry & Bond, 2017).

A psychodynamic perspective holds that fully evaluating defensive patterns requires understanding a person's overall personality structure, including the attachment style adopted by the person (Weinberger, 1998). Attachment style is one's pattern of relational behaviour derived from early childhood experience with attachment figures (Hazan & Shaver, 1987). Attachment-related differences in emotion regulation are relevant to understanding defensive functioning (Mikulincer & Shaver, 2019). According to Mikulincer et al. (2009), the type of defenses a person employs can indicate attachment-related sources of pain and suffering. Furthermore, there is evidence that attachment can predict defense mechanisms (e.g., Laczkovics et al., 2020). From this view, we argue that there is value in using attachment style as a guiding principle for studying defense mechanisms.

Internal working models of attachment, attachment style and defenses

Laczkovics et al. (2020) theorize that attachment processes influence the expression of psychological defenses via internal working models. Based on Bowlby's (1973) work, internal working models are mental representations (beliefs) about self and others that influence how people manage their emotions (Schore, 2016). Internal working models develop from experiences with the primary caregiver, whereby a child learns about both their self-worth and the reliability and responsiveness of their caregivers in situations of distress and need (referred to as self- and other- internal working models, respectively). The self- and other-model represent general expectations about both the child's sense of worthiness and others' availability. Such internal models become script-like representations of attachment-related experiences that help guide adult behaviour and emotional regulation (Waters et al., 2021).

Internal working models give rise to a person's attachment orientation or style. As Fraley and Roisman (2019) explain, the term 'adult attachment style' refers to a constellation of knowledge, expectations, and possible insecurities that people hold about themselves and their close relationships. According to Raby et al. (2021), current personality research best captures individual differences in insecure attachment using the dimensions of insecure-attachment-*avoidance* and insecure-attachment-*anxiety*. Attachment-avoidance represents discomfort with closeness and dependency, whereas attachment-anxiety represents the fear of abandonment and preoccupation with closeness (Brennan et al., 1998). Based on these dimensions, Griffin and Bartholomew (1994) identify a *dismissing* attachment pattern involving high avoidance and low anxiety based on a positive sense of self (positive self-model) and a negative view of others (negative other-model). In contrast, the preoccupied attachment pattern (high anxiety, low avoidance) is defined by a negative view of self (negative self-model) and a positive view of others (positive other-model) (Fig. 1).

Theory on attachment-related defensive processes and insecure working models

Adverse events and distress activate the motivational bases of attachment (the attachment system) (Simpson & Rholes, 2017). Such events include negative external events (e.g., dangerous or threatening situations, such as war or the pandemic), negative relational events (e.g., relationship conflict, separation, abandonment), and experiences such as ruminating about adverse events. To cope with such adverse events,
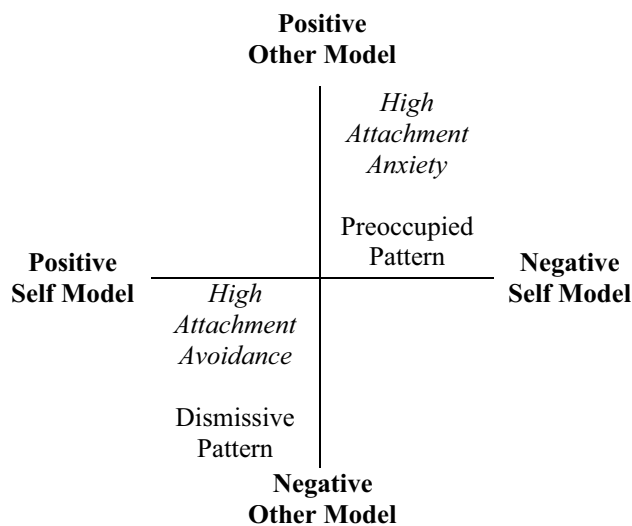

Fig. 1 Self-image mental model and expectations-of-others mental models applied to insecure attachment (adapted from Griffin & Bartholomew, 1994)

Bowlby's (1980) that insecurely attached individuals will filter attachment-related information associated with psychological pain (the defensive exclusion hypothesis). Here Bowlby postulates that excluding knowledge of threatening information acts to prevent additional attachment distress. According to Bowlby (1980), defensive exclusion can occur across a spectrum of dissociation (which he termed segregation) and can have two main effects, *deactivation,* and *cognitive disconnection*. Bowlby (1980) inferred that deactivation could be likened to repression (preventing mental content from becoming known) and cognitive disconnection involving a disconnection between mental content.

Since Bowlby's contribution, two main classes of attachment threat responses have been identified that develop as a response to frustrated attachment needs (deactivating and hyperactivating strategies). As Mikulincer and Shaver (2016) explain, a child's primary response is to seek comfort from the caregiver when feeling threatened or distressed (proximity seeking). However, under such circumstances, if the caregiver cannot meet the child's need such that the child remains distressed, then the child will develop alternative (secondary) means of dealing with the distress (Main, 1990). With respect to these alternate strategies, individuals with attachment-anxiety typically adopt hyperactivating strategies to manage attachment system activation, whereas individuals with attachment-avoidance typically adopt deactivating strategies (Shaver & Mikulincer, 2002).

In the context of attachment-avoidance, the deactivation strategy consists of attempts to cope with threatening events through diverting attention from emotional material (cognitive distancing) and blocking the experience of negative emotions (emotional detachment) (Mikulincer & Shaver, 2019). According to Mikulincer et al. (2009), the deactivating defense processes that characterize attachment-avoidance entail *suppression* of attachment-related emotions, thoughts, and memories, as well as promoting a sense of independence (self-enhancement) and devaluating the value of others. Simpson and Rholes (2017) here suggest that the underlying motivation of attachment-avoidance is to curb any distress by being self-reliant, which allows the individual to experience a sense of autonomy and personal control. Consequently, individuals with high attachment-avoidance keep others at a comfortable distance and on terms that they dictate. Ein-Dor et al. (2011) found that people with attachment-avoidance were speedier in escaping from the simulated danger scenario due to their apparent independent coping and emotion suppression. In addition, evidence suggests that those with attachment-avoidance employ 'preemptive defenses' as part of the deactivating strategy (Fraley & Brumbaugh, 2007; Fraley et al., 2000). Preemptive defenses minimize attention to events that could trigger unwanted feelings or thoughts by limiting vulnerable content from being registered in the first place.

Although deactivating strategy discussed above conform to the more traditional sense of defense that helps minimise distress, Mikulincer and Shaver (2016) draw attention to the less obvious defensive strategy associated with anxious hyperactivation. Anxious hyperactivation is viewed as a "fight" protest response that works to exaggerate the threat-appraisal process (Mikulincer & Shaver, 2019). As such, the hyperactivating strategy involves intensifying negative emotions, hyperarousal, and being hypervigilant to possible threats. Additionally, there is heightened recall of negative experiences, which leads to a tendency to ruminate. Although hyperactivating defenses provide counterintuitive mechanisms of distress regulation, they nevertheless make theoretical sense within an attachment framework. According to Simpson and Rholes (2017), when individuals oriented to attachment-anxiety face stressful events, they are motivated to increase proximity with their partners. Mikulincer and Shaver (2019) propose that anxiously attached individuals are thus motivated to elicit security from their caregivers by exaggerating signals of distress.

The hyperactivating defense processes that characterize attachment-anxiety, include amplifying distress, anxiously devaluing one's self (self-devaluation), and poor differentiation between self and other (Mikulincer et al., 2009). A laboratory experiment by Ein-Dor et al. (2011) studied attachment insecurity and behavioural reactions to danger (a room filled with smoke). People high on attachment-anxiety were hypervigilant and quicker to detect the danger than others. These authors concluded that individuals strongly oriented to attachment-anxiety are particularly vigilant in monitoring the environment for threats and are emotionally expressive and desirous of support when a threat is detected.

Although there are specific defenses associated with deactivation and hyperactivation, some defenses may reflect either attachment-avoidance or attachment-anxiety. In such cases, the defenses reflect differing sources of motivation. For example, according to Mikulincer and Horesh (1999), the defense *projection* (the tendency to see parts of oneself in others) occur in both forms of insecure attachment. However, individuals with attachment-anxiety tend to project their actual self-traits, while individuals with attachment-avoidance project unwanted self-traits. This occurs because with attachment anxiety, projection entails a search for closeness and the desire to minimize the mental distance from others. In this respect, projective mechanisms based on attachment-anxiety help increase the sense of similarity and commonality with others. For attachment-avoidance, however, projection helps by suppressing negative aspects of self and maintaining a positive self-view, while maximizing cognitive distance from others. Thus, individuals with

attachment-avoidance deny self-other similarities and disown their unfavourable parts only to judge them in others.

The current study was interested in the connection between insecure attachment and psychological defenses. Ciocca et al. (2020) suggest that psychological defense mechanisms and attachment styles can be viewed sequentially as processes that mediate the relationship between attachment styles and psychological and behavioural outcomes. Laczkovics et al. (2020) also report that attachment style is an important determinant of the type of defense mechanisms expressed. Furthermore, the results of Laczkovics et al. (2020) demonstrate connections between internal working models of the self and intrapsychic (internally focused) defense mechanisms and internal working models of others and interpersonal (relational) defense mechanisms. Other studies have also found such connections. For example, in terms of specific individual defenses and attachment styles, Prunas et al. (2019) found that *splitting* (where mental content are disconnected from one another) and *repression* (where knowing certain mental content is prevented) emerged as mechanisms that characterized the avoidant dimension. In contrast, projection and engaging in fantasy were associated with the anxious dimension of attachment.

There is broad agreement that defense theory could benefit from a better underlying theoretical framework (Mihalits & Codenotti, 2020). There is a clear argument for studying defenses through the lens of attachment theory given that the connection between attachment and psychological defenses has long been theorized (Bowlby, 1980). Although progress has been made toward an attachment conceptualization of defense model (see Mikulincer & Shaver, 2016), the challenge of empirically measuring the concept of psychological defense through the self-report method is recognised (Davidson & MacGregor, 1998). An attachment-based model of defense may provide a solution to this challenge.

As Mikulincer and Shaver (2019) point out, more research is needed if we are to understand better the specific strategies and defenses that people with attachment-anxiety and those with attachment-avoidance use in certain situations. No studies to date have examined the basic patterns of specific defense expression in the two dimensions of attachment insecurity (anxiety and avoidance). Consequently, there remains a need to examine the relationship between attachment and individual defenses. A deeper understanding of these patterns is required to fill a research gap for advancing the theory of attachment-based psychological defenses. The present study aimed to assess whether attachment orientation can predict character defenses based on the conceptualization of attachment characteristics applied to threat response (Shaver & Mikulincer, 2002).

Research questions

1. What differentiates attachment-avoidance and attachment-anxiety, in terms of associations with defensive functioning?
2. What individual defenses does attachment-anxiety uniquely predict (and not avoidance), and which are uniquely predicted by attachment-avoidance (and not anxiety)?
3. What defenses are shared by both attachment-anxiety and attachment-avoidance?

For a glossary of specific defenses, see Table 1.

Hypotheses about Attachment-Anxiety

It was hypothesized that attachment-anxiety will be associated with defenses that are characterized by hyperactivating mechanisms which involve maximising closes based on a positive view of others and a negative self-view. Therefore, positive associations between attachment-anxiety and the following defenses were expected*: acting out, affiliation, altruism*, *anticipation, devaluation-self, displacement, dissociation, fantasy, help-rejecting complaining, passive-aggression, projection, projective identification*, *reaction formation, splitting,* and *undoing.* A negative relationship with *suppression* was expected. As a point of distinction, it is hypothesized that attachment-anxiety will uniquely predict *acting out, anticipation, displacement, passive aggression, projective identification, reaction formation, splitting* and *undoing.* We also expect that the *image distortion style* will be more strongly predicted by attachment-anxiety.

Hypotheses about Attachment-Avoidance

It was hypothesized that attachment-avoidance will be associated with the defenses characterized by deactivating mechanisms, based on a negative view of others (based on lack of trust in the availability of others), and a positive view of self. Therefore, positive associations between attachment-avoidance and the following defenses were expected*: denial, devaluation-other, help-rejecting complaining, intellectualization, isolation, omnipotence, projection, self-assertion, suppression and withdrawal.* In addition, negative associations between attachment-avoidance and the defenses of *affiliation* and *altruism* were expected. As a distinguishing feature (distinct from attachment-anxiety), it was hypothesized that attachment-avoidance will uniquely predict the defense isolation.

Table 1 Glossary of specific defense mechanisms based on definitions from DSM-IV and descriptions in the encyclopedia of personality and individual differences (2020)

Acting out	Responding to conflict or stressors with the tendency to express oneself by acting rather than by verbalizing their inner state. It is used to describe impulsive behaviours that substitute thought and verbal expression
Affiliation	Responding to conflict or stressors by turning to others for help or support. There is a high need for contact. Defensive affiliation can also entail fear of rejection and solitude
Altruism	Responding to conflict or stressors by dedication to meeting the needs of others, which is ultimately rewarding for the helper. Through defensive altruism, one can receive gratification vicariously
Anticipation	Responding to conflict or stressors by anticipating consequences and making preparations. It is a form of preemptive problem solving. Defensive anticipation gives the person more time to prepare and plan a response
Fantasy	Responding to conflict or stressors through excessive daydreaming as a substitute for human relationships or more effective action
Denial	Responding to conflict or stressors by not acknowledging reality or its consequences. Denial may be more a class of defenses than a single defense mechanism
Devaluation	Responding to conflict or stressors by attributing exaggerated negative qualities to self or others
Displacement	Responding to conflict or stressors by transferring emotions about a stressor onto other objects or activities that are less psychologically threatening, for example, comfort eating to avoid the awareness of difficult personal relations or aggressiveness toward one person replacing original hostility towards another
Dissociation	Responding to conflict or stressors by "spacing out" or freezing, disengaging from the present, and detaching from disturbing emotional states. Dissociation is a mental process and sensory/perceptual experience that causes a lack of connection in one's thoughts, memory, and sense of identity. In depersonalization, there is a disconnect between one's body and identity. In derealization, there is a disconnect with the surrounding world. Everyday examples of dissociation can range from zoning out, to daydreaming, to having a mind-blank moment, to having an out-of-body experience. More intense dissociation may occur as an "overload" response to trauma
Help-rejecting Complaining	Responding to conflict or stressors by complaining or making repetitive requests for help that disguise covert feelings of hostility which are then expressed by rejecting the suggestions, advice, or help that others offer
Humour	Responding to conflict or stressors by emphasizing the amusing or ironic aspects of the situation
Idealization	Responding to conflict or stressors by attributing overly positive qualities to others or situations. A common expression for this is to put someone on a pedestal
Intellectualization	Responding to conflict or stressors with an intellectual focus on facts, logic, and abstract/cerebral thinking to control or minimize disturbing emotions
Isolation of affect	Responding to conflict or stressors by separating the emotional component of a situation from the cognitive elements (e.g., descriptive details) and losing touch with the feelings
Omnipotence	Responding to conflict or stressors by feeling or acting as if one has special powers or abilities and is superior to others
Passive aggression	Responding to conflict or stressors by indirectly expressing aggression toward others. There is a facade of overt compliance masking covert resistance, resentment, or hostility
Projection	Responding to conflict or stressors by misattributing one's unacceptable feelings, impulses, or thoughts to another
Projective Identification	Responding to conflict or stressors by evoking in others inner experiences that mirror one's own unacceptable feelings, impulses, or thoughts—making it difficult to clarify who did what to whom first
Rationalization	Responding to conflict or stressors by devising reassuring or self-serving, biased explanations, thereby obscuring the true motivations for one's thoughts, actions, or feelings
Reaction formation	Responding to conflict or stressors by substituting behaviour, thoughts, or feelings diametrically opposed to one's unacceptable thoughts or feelings
Repression	Responding to conflict or stressors by expelling disturbing wishes, thoughts, or experiences from conscious awareness. The feeling component may remain conscious, detached from its associated ideas
Self-assertion	Responding to conflict or stressors by expressing one's feelings and thoughts in a direct and assertive manner
Self-observation	Responding to conflict or stressors by reflecting on one's thoughts, feelings, motivation, and behaviour, and responding appropriately
Splitting	Responding to conflict or stressors by compartmentalizing contradictory attitudes. A dichotomized, black-and-white way of thinking dominates. There is a failure to integrate positive and negative parts of the self or others into a cohesive image. As a defense, splitting allows individuals to maintain contradictory attitudes towards self and others simultaneously
Sublimation	Responding to conflict or stressors by channelling potentially maladaptive feelings or impulses into socially acceptable behaviour. This activity is often creative and can be productive
Suppression	Responding to conflict or stressors by intentionally avoiding thinking about the issue. Distraction is an example of a strategy that can be used to suppress a thought
Undoing	Responding to conflict or internal or external stressors with words or behaviour designed to negate or symbolically redeem unacceptable thoughts, feelings, or actions

Hypotheses about shared defenses

It was hypothesized that global defensive functioning is associated with attachment-anxiety and attachment-avoidance and is more strongly predicted by attachment-avoidance. We expected both attachment-anxiety and attachment-avoidance to be associated with the affect regulation defense style. Regarding specific defenses and similarities, we hypothesized that the defense *projection* would be common to both attachment-anxiety and attachment-avoidance.

Method

Ethics, participants, and recruitment

The ethical aspects of this study were approved by the Macquarie University Human Research Ethics Committee. The participants were psychology undergraduate students recruited via an online advertisement posted to the research database where students self-select into a study of their choice. Participants received information about the study and the terms of participation. Informed consent was obtained. A total of 250 people took part in the study, 63% female, aged 17–65 ($M = 22.30$, $SD = 8.36$). Regarding the ethnic group, participants identified as Caucasian (58.4%), Asian (24.8%), Other (9.2%), Middle Eastern (3.2%), African-American (1.6%), Indigenous (1.2%), Hispanic (1.2%), and Native Hawaiian/ Pacific Islander (0.4%). Participants were rewarded with course credit. Following both Schönbrodt and Perugini, (2013), Bujang and Baharum (2016), and Khalilzadeh and Khodi (2021), we determined that a sample size of 250 was sufficient for the objective of this study.

Study design and procedure

The study employed a quantitative approach using a survey design via Qualtrics Survey Software. Questionnaires in Likert scale format were used for data collection. Two main instruments were used, the *Experiences in Close Relationships* Scale, ECR (Brennan et al., 1998), and the *Defensive Style Questionnaire*, DSQ-60 (Trijsburg et al., 2003). Items were presented in randomised order. Participants had to indicate the extent to which they agreed with a statement. Data were analysed using statistical procedures by examining the relationship among variables.

Measures

Experiences in close relationships scale (ECR; Brennan et al., 1998)

Attachment was measured using the 36-item self-report Experiences in Close Relationships Scale, ECR. The ECR measures individuals on two subscales of attachment: Avoidance (18 items) and Anxiety (18 items). This questionnaire asks to consider statements about how they generally feel in close relationships (e.g., with romantic partners, close friends, or family members). Participants responded to each statement by indicating how much they agreed or disagreed with it on a 7-point Likert scale (i.e., 1 = strongly disagree and 7 = strongly agree). Items measuring *attachment-anxiety* are represented by statements such as "My desire to be very close sometimes scares people away." In contrast, items measuring *attachment-avoidance* are represented by statements such as "I want to get close to others, but I keep pulling back." Scores for each attachment dimension are calculated by averaging the items representing the construct. In this study, Cronbach's alphas were excellent: *attachment-anxiety* $\alpha = 0.91$ and *attachment-avoidance* $\alpha = 0.91$.

Defensive style questionnaire, (DSQ-60; Trijsburg et al., 2003)

Defensive functioning was measured using the Defensive Style Questionnaire, DSQ-60 (Trijsburg et al., 2003), a 60-item self-report scale designed to be congruent with defenses in DSM-IV (APA, 1994). Participants answer on a 9-point Likert scale with anchors of 1 (does not apply to me at all) and 9 (applies to me completely). The scale is designed to measure the conscious derivatives of 30 defense mechanisms, with two items per individual defense. The individual defenses assessed include acting-out, affiliation, altruism, anticipation, denial, devaluation of self, devaluation of other, displacement, dissociation, fantasy, help-rejecting complaining, humour, idealization, intellectualization, isolation, omnipotence, passive-aggressive, projection, projective identification, rationalization, reaction formation, repression, self-assertion, self-observation, splitting of the self, splitting of other, sublimation, suppression, undoing, and withdrawal. See Table 1 for definitions of each defense. The scores for each defense are calculated by taking the mean of the two items representing the defense. The DSQ-60 scales were classified according to the three-factor structure identified by Thygesen et al. (2008), leading to scores on three different subscales (image distorting defenses, affect regulating defenses, and adaptive defenses). An overall defensive functioning score was also determined.

Table 2 Descriptive statistics and gender differences in attachment and defenses	Mean (SD)			*t*	*d*
	Overall (*n* = 250)	Male (*n* = 92)	Female (*n* = 158)		
Attachment					
Avoidance	3.49 (0.99)	3.51 (0.90)	3.48 (1.04)	.24	.03
Anxiety	4.07 (1.03)	3.91 (0.92)	4.16 (1.08)	−1.88	−.25
Defense Style					
Affect regulation	4.26 (1.39)	4.37 (1.26)	4.20 (1.46)	.95	.12
Image distortion	3.66 (1.28)	3.62 (1.15)	3.69 (1.35)	−.44	−.06
Adaptive	5.78 (9.84)	5.78 (1.01)	5.78 (0.97)	.03	.00
Global defensive functioning	4.50 (0.74)	4.50 (0.66)	4.51 (0.78)	−.08	−.01
Intellectualization	4.74 (1.65)	5.05 (1.76)	4.56 (1.56)	2.22*	.30
Dissociation	3.58 (1.65)	3.64 (1.48)	3.54 (1.74)	.45	.06
Isolation	4.22 (1.96)	4.55 (1.89)	4.02 (1.97)	2.12*	.28
Fantasy	4.50 (2.26)	4.23 (1.93)	4.66 (2.43)	−1.45	−.19
Help rejecting complaining	3.61 (1.85)	3.52 (1.70)	3.66 (1.94)	−.58	−.08
Splitting–self	3.46 (1.76)	3.53 (1.74)	3.45 (1.77)	.35	.05
Splitting–other	3.94 (1.80)	3.73 (1.78)	4.06 (1.80)	−1.42	−.19
Projection	3.90 (1.83)	3.85 (1.70)	3.94 (1.90)	−.37	−.05
Projective Identification	3.38 (1.50)	3.46 (1.33)	3.34 (1.59)	.60	.08
Self–Observation	6.49 (1.49)	6.50 (1.46)	6.48 (1.51)	.10	.01
Self–Assertion	5.44 (1.49)	5.47 (1.34)	5.42 (1.57)	.28	.04
Anticipation	5.56 (1.61)	5.40 (1.50)	5.66 (1.67)	−1.21	−.16
Sublimation	4.91 (2.04)	5.20 (1.86)	4.74 (2.13)	1.70	.22
Humour	6.51 (1.57)	6.35 (1.72)	6.60 (1.48)	−1.22	−.16
Acting Out	4.05 (1.93)	4.25 (1.73)	3.94 (2.03)	1.24	.16
Altruism	6.62 (1.55)	6.46 (1.52)	6.72 (1.57)	−1.30	−.17
Passive–Aggression	2.93 (1.59)	2.82 (1.41)	2.99 (1.69)	−.80	−.10
Suppression	4.97 (1.62)	4.99 (1.62)	4.96 (1.63)	.13	.02
Rationalization	5.47 (1.57)	5.44 (1.58)	5.49 (1.57)	−.23	−.03
Reaction Formation	5.01 (1.81)	4.69 (1.88)	5.20 (1.75)	−2.13*	−.28
Denial	3.67 (1.56)	3.50 (1.48)	3.77 (1.60)	−1.32	−.17
Devaluation–other	2.98 (1.69)	3.42 (1.63)	2.73 (1.67)	3.22**	.42
Omnipotence	3.08 (1.63)	3.59 (1.55)	2.78 (1.61)	3.92**	.51
Devaluation–self	3.78 (2.06)	3.96 (1.89)	3.68 (2.16)	1.09*	.14
Withdrawal	5.75 (1.95)	5.73 (1.85)	5.76 (2.01)	−.09	−.01
Displacement	4.75 (1.90)	4.59 (1.79)	4.85 (1.96)	−1.06	−.14
Repression	4.18 (1.75)	4.05 (1.68)	4.25 (1.80)	−.86	−.11
Idealization	4.27 (2.15)	4.08 (2.15)	4.39 (2.14)	−1.11	−.15
Undoing	4.28 (1.73)	4.27 (1.63)	4.28 (1.79)	−.03	.00
Affiliation	5.05 (1.84)	4.64 (1.83)	5.29 (1.80)	−2.71**	−.36

d is Cohen's *d* for effect size

* $p < .05$, ** $p < .01$

df = 248

In this study, Cronbach's alpha result are as follows: Affect regulating defenses ($\alpha = 0.74$); Image distorting defenses, ($\alpha = 0.79$); Adaptive defenses ($\alpha = 0.62$); Overall defensive functioning ($\alpha = 0.87$).

Results

Preliminary analyses

Table 2 reports the descriptive statistics among the study's main variables. First, to identify any potential gender differences in defenses, descriptive statistics for males and females are presented in Table 2 with independent samples t-test results. Across the 30 different defenses, only 7 displayed statistically significant differences between males and females, with generally weak effect sizes and as expected (see Del Giudice, 2019). As such, gender was not controlled for in subsequent analyses. If data were missing due to opt-out, the participant's data were excluded from the analysis. Normality was assessed visually with histograms, and skewness values of the items were examined to look for outliers. The Shapiro–Wilk test did not show evidence of non-normality for the attachment scales. For attachment-anxiety $W(250) = 0.994$, $p > 0.05$ and for attachment-avoidance $W(250) = 0.993$, $p > 0.05$. The main variables of the DSQ-60 may be normally distributed, global defensiveness $W(250) = 0.997$, $p > 0.05$, affect regulation $W(250) = 0.993$, $p > 0.05$, image distortion $W(250) = 0.990$, $p > 0.05$, and adaptive defenses $W(250) = 0.994$, $p > 0.05$.

Correlational analyses

Pearson correlations tests were conducted set at two-tailed significance. With regard to statistically significant correlations, attachment-anxiety and attachment-avoidance were weakly correlated ($r(248) = 0.25$, $p < 0.001$). The affect regulation defensive strategy correlated with both attachment-anxiety ($r(248) = 0.40$, $p < 0.001$) and attachment-avoidance ($r(248) = 0.43$, $p < 0.001$). The image distorting defensive strategy was correlated with both, but more strongly with attachment-anxiety ($r(248) = 0.48$, $p < 0.001$) than attachment-avoidance ($r(248) = 0.29$, $p < 0.001$). The adaptive defensive strategy was not correlated with attachment-anxiety ($r(248) = 0.01$, $p = 0.99$) and was negatively weakly correlated with attachment-avoidance ($r(248) = -0.17$, $p = 0.01$). Global defensive functioning correlated with attachment-anxiety ($r(248) = 0.46$, $p < 0.001$) and weakly correlated with attachment-avoidance ($r(248) = 0.19$, $p = 0.003$). Table 3 demonstrates the correlations between the attachment dimensions and specific defenses and defense styles.

Consistent with the hypotheses about attachment-anxiety, the strongest association was with the defense

Table 3 Correlations of individual defenses of DSQ-60 and attachment dimensions

	Attachment avoidance	Attachment anxiety
Attachment Avoidance	1	.25**
Attachment Anxiety	.25**	1
Global Defensiveness	.19**	.46**
Adaptive Defense Style	–.17**	.00
Self–Observation	–.11	–.01
Self–Assertion	–.15*	–.03
Anticipation	.08	.22**
Sublimation	–.20**	–.06
Humour	–.12	–.10
Image Distortion Defense Style	.28**	.48**
Projection	.31**	.44**
Splitting–Self	.18**	.27**
Splitting–Other	.14*	.36**
Help–Rejecting Complaining	.29**	.39**
Projective Identification	.10	.30**
Affect Regulation Defense Style	.42**	.40**
Isolation	.47**	.12
Intellectualization	.27**	.27**
Fantasy	.29**	.45**
Dissociation	.22**	.32**
Miscellaneous		
Acting Out	.05	.32**
Altruism	–.09	.19**
Passive–Aggression	.05	.30**
Suppression	.08	–.20**
Rationalization	–.13*	–.02
Reaction Formation	.09	.16*
Denial	.20**	.24**
Devaluation–Other	.08	.14*
Omnipotence	–.08	–.03
Devaluation–Self	.29**	.36**
Withdrawal	.35**	.24**
Displacement	.10	.36**
Repression	.02	.08
Idealization	–.13*	.07
Undoing	.02	.31**
Affiliation	–.47**	.14*

**Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2-tailed)

fantasy ($r(248) = 0.45$, $p < 0.001$), followed by *projection* ($r(248) = 0.44$, $p < 0.001$), *help-rejecting complaining* ($r(248) = 0.39$, $p < 0.001$), *splitting-other* ($r(248) = 0.36$, $p < 0.001$), *devaluation-self* ($r(248) = 0.36$, $p < 0.001$), *displacement* ($r(248) = 0.36$, $p < 0.001$), *acting out* ($r(248) = 0.32$, $p < 0.001$), *dissociation* ($r(248) = 0.32$, $p < 0.001$), *undoing* ($r(248) = 0.31$, $p < 0.001$),

passive-aggression, (r(248) = 0.30, $p < 0.001$), *splitting-self* (r(248) = 0.27, $p < 0.001$),

There were smaller (but still notable) associations between attachment-anxiety and *anticipation* (r(248) = 0.22, $p < 0.001$), *altruism* (r(248) = 0.19, $p < 0.01$), *reaction formation* (r(248) = 0.16, $p < 0.05$), and *affiliation* (r(248) = 0.14, $p = 0.03$). In addition, there was a small significant negative correlation with *suppression* (r(248) = -0.20, $p = 0.001$). In terms of exploratory findings (not initially hypothesized), there were small correlations with *intellectualization* (r(248) = 0.27, $p < 0.001$), *denial* (r(248) = 0.24, $p < 0.001$), *withdrawal* (r(248) = 0.24, $p < 0.001$) and *devaluation-other* (r(248) = 0.14, $p = 0.03$).

Consistent with the hypotheses about attachment-avoidance, the strongest association was with the defense *isolation* (r(248) = 0.47, $p < 0.001$), followed by *withdrawal* (r(248) = 0.35, $p < 0.001$) *projection* (r(248) = 0.31, $p < 0.001$), *help-rejecting complaining* (r(248) = 0.29, $p < 0.001$), *intellectualization* (r(248) = 0.27, $p < 0.01$) and *denial* (r(248) = 0.20, $p < 0.001$). Also as hypothesized, there was a moderate negative correlation with *affiliation* (r(248) = -0.47, $p < 0.001$). Contrary to the hypotheses, correlations between attachment-avoidance and *omnipotence*, *devaluation of others*, *suppression* were non-significant. Furthermore, while we expected a negative association with altruism, the result was non-significant. There was also an unexpected negative relationship between *self-assertion* (r(248) = -0.15, $p < 0.02$) and attachment-avoidance (albeit small and at 0.05 significance level). In terms of exploratory findings (not initially hypothesized), there were significant correlations between attachment-avoidance and *fantasy* (r(248) = 0.29, $p < 0.001$), and *devaluation-self* (r(248) = 0.29, $p < 0.001$). Also, there was a negative correlation between attachment-avoidance and *sublimation* (r(248) = -0.20, $p < 0.001$). At the 0.05 significance level, there were negative correlations between attachment-avoidance and *idealization* (r(248) = -0.13, $p = 0.03$), and *rationalization* (r(248) = -0.13, $p = 0.04$).

Regression analyses

Multiple linear regression analyses were used with the two attachment dimensions as independent variables to determine the unique relationships between each attachment dimension and each defense to answer research question 2. The thirty specific defenses, three defense styles, and global defensiveness were dependent variables in 34 separate regression models. Results are reported in Table 4. Standardized regression coefficients were primarily used for interpretation to directly compare the strength of predictive effects of attachment-anxiety versus avoidance for each defense.

Our first research question investigated how attachment-avoidance and attachment-anxiety differ regarding their relationships with defensive functioning. The findings indicate that there are some key distinctions in the defensive profiles of attachment-anxiety and attachment-avoidance, largely in line with the predictions. A thought-provoking finding that contradicted our expectations was that attachment-anxiety is predictive of global defensive functioning ($\beta = 0.44$), whereas attachment-avoidance is not ($\beta = 0.08$). In support of the hypotheses, our findings indicate that attachment-avoidance is uniquely predictive of the defense *isolation* ($\beta = 0.47$). Also consistent with our hypotheses, attachment-anxiety uniquely predicted *passive aggression* ($\beta = 0.30$), *acting out* ($\beta = 0.33$), *splitting-other* ($\beta = 0.34$), *splitting-self* ($\beta = 0.24$), *projective identification* ($\beta = 0.29$), *anticipation* ($\beta = 0.21$), *displacement* ($\beta = 0.36$), *undoing* ($\beta = 0.32$), and *reaction formation* ($\beta = 0.15$). Regarding different directions, while attachment-avoidance weakly predicts the use of the defense *suppression* ($\beta = 0.14$), attachment-anxiety has a negative relationship with the same ($\beta = -0.24$). While attachment-anxiety predicts the use of the defense *affiliation* ($\beta = 0.27$), attachment-avoidance has a negative relationship with the same ($\beta = -0.53$). This is a similar case with the defense *altruism,* which is positively predicted by attachment-anxiety ($\beta = 0.23$), and negatively predicted by attachment-avoidance ($\beta = -0.14$). In terms of exploratory findings (that were not initially hypothesized and may represent Type 1 errors), it was found that attachment-avoidance was uniquely negatively predictive of *idealization* ($\beta = -0.16$), *rationalization*, ($\beta = -0.13$), *sublimation* ($\beta = -0.20$), and *self-assertion*, ($\beta = -0.16$).

The second research question explored similarities between the two attachment dimensions concerning defensive functioning. The findings illustrate that both attachment-anxiety ($\beta = 0.32$) and attachment-avoidance ($\beta = 0.35$) are predictive of the *affect regulation style* of defenses. Furthermore, the *image distortion style* is significantly predicted by both attachment dimensions but it is more strongly by attachment-anxiety ($\beta = 0.44$), than attachment-avoidance ($\beta = 0.18$).

Regarding the specific defenses, both significantly predict *dissociation* (anxiety $\beta = 0.29$, avoidance $\beta = 0.15$); *fantasy* (anxiety $\beta = 0.41$, avoidance $\beta = 0.19$); *intellectualization*, (anxiety $\beta = 0.22$, avoidance $\beta = 0.22$); *help-rejecting complaining*, (anxiety $\beta = 0.34$, avoidance $\beta = 0.21$), *projection,* (anxiety $\beta = 0.38$, avoidance $\beta = 0.22$); *withdrawal,* (anxiety $\beta = 0.16$, avoidance $\beta = 0.31$); and *devaluation-self* (anxiety $\beta = 0.31$, avoidance $\beta = 0.22$); and *denial* (anxiety $\beta = 0.20$, avoidance $\beta = 0.15$). These findings are mostly in line with our predictions, with some exceptions (e.g., devaluation-self was not expected to be significant for attachment-avoidance) (Fig. 2).

Table 4 Linear regression analyses with attachment dimensions as predictors (IVS) of trait defenses (defensive behaviour)

| Dependent Variables:	Spearman –Brown Coefficient	Attachment–avoidance					R Square	Attachment–anxiety				
		B	SE B	β	t	p		B	SE B	β	t	p
Global Defensiveness (α = .87)		.06	.04	.08	1.37	.17	.22	.32	.04	.44	7.53	.00
Affect regulation style (α = .74)		.49	.08	.35	6.20	.00	.28	.43	.08	.32	5.70	.00
Intellectualization	.14	.36	.10	.22	3.50	.00	.12	.35	.10	.22	3.50	.00
Dissociation	.28	.24	.10	.15	2.37	.02	.12	.46	.10	.29	4.69	.00
Isolation	.49	.93	.11	.47	8.07	.00	.22	.01	.11	.01	.13	.90
Fantasy	.75	.43	.13	.19	3.24	.00	.24	.90	.13	.41	7.14	.00
Image distortion style (α = .79)		.23	.07	.18	3.13	.00	.26	.55	.07	.44	7.81	.00
Help rejecting complaining	.61	.39	.11	.21	3.52	.00	.20	.62	.11	.34	5.84	.00
Splitting–self	.27	.21	.11	.12	1.85	.07	.08	.41	.11	.24	3.80	.00
Splitting–other	.38	.11	.11	.06	.97	.33	.13	.60	.11	.34	5.61	.00
Projection	.72	.40	.11	.22	3.79	.00	.23	.68	.10	.38	6.65	.00
Projective identification	.17	.04	.09	.02	.39	.70	.09	.43	.09	.29	4.70	.00
Adaptive style (α = .62)		−.18	.06	−.19	−2.88	.00	.03	.04	.06	.05	.73	.47
Self–Observation	.54	−.18	.10	−.12	−1.83	.07	.01	.03	.09	.02	.33	.74
Self–Assertion	.04	−.23	.10	−.15	−2.35	.02	.02	.00	.09	.00	.05	.96
Anticipation	.33	.05	.10	.03	.48	.63	.05	.33	.10	.21	3.31	.00
Sublimation	.56	−.41	.13	−.20	−3.09	.00	.04	−.03	.13	−.01	−.20	.84
Humour	.57	−.16	.10	−.10	−1.51	.13	.02	−.12	.10	−.08	−1.18	.24
Unclassified others:												
Acting out	.62	−.06	.12	−.03	−.47	.64	.10	.62	.12	.33	5.30	.00
Altruism	.56	−.22	.10	−.14	−2.23	.03	.06	.34	.10	.23	3.53	.00
Passive–Aggressive	.29	−.04	.10	−.03	−.43	.67	.09	.47	.10	.30	4.86	.00
Suppression	.37	.23	.10	.14	2.24	.03	.06	−.37	.10	−.24	−3.72	.00
Rationalization	.46	−.21	.10	−.13	−2.05	.04	.02	.02	.10	.01	.18	.86
Reaction Formation	.32	.10	.12	.06	.85	.39	.03	.26	.11	.15	2.25	.03
Denial	.30	.24	.10	.15	2.43	.02	.08	.30	.10	.20	3.13	.00
Devaluation–other	.56	.08	.11	.05	.71	.48	.02	.21	.11	.12	1.92	.06
Omnipotence	.39	−.13	.11	−.08	−1.23	.22	.01	−.02	.10	−.01	−.19	.85
Devaluation–self	.62	.45	.12	.22	3.63	.00	.18	.62	.12	.31	5.23	.00
Withdrawal	.75	.60	.12	.31	5.03	.00	.14	.31	.12	.16	2.65	.01
Displacement	.49	.02	.12	.01	.18	.85	.13	.66	.11	.36	5.82	.00
Repression	.16	.00	.12	.00	−.01	.99	.01	.13	.11	.08	1.17	.25
Idealization	.57	−.35	.14	−.16	−2.49	.01	.03	.23	.13	.11	1.70	.09
Undoing	.25	−.10	.11	−.06	−.91	.36	.10	.54	.10	.32	5.13	.00
Affiliation	.54	−1.00	.10	−.53	−9.64	.00	.29	.48	.10	.27	4.81	.00

The Beta values represent how strongly each of the attachment styles is related to the corresponding defense

Discussion

The study aimed to investigate how attachment-avoidance and attachment-anxiety differ in defensive functioning and note any overlap between these dimensions. The psychological defenses unique to each attachment dimension were delineated when examining differences. The results indicate that individuals with high attachment-anxiety are particularly attracted to the defenses *fantasy, splitting*, *acting-out, projective identification, passive-aggression, reaction-formation, anticipation, displacement,* and *undoing*. The breadth of the attachment-anxiety defense profile reflects a

Fig. 2 Venn diagram depicting character defenses and common defenses. (-)=negative association. * the defenses that are unique to that attachment dimension
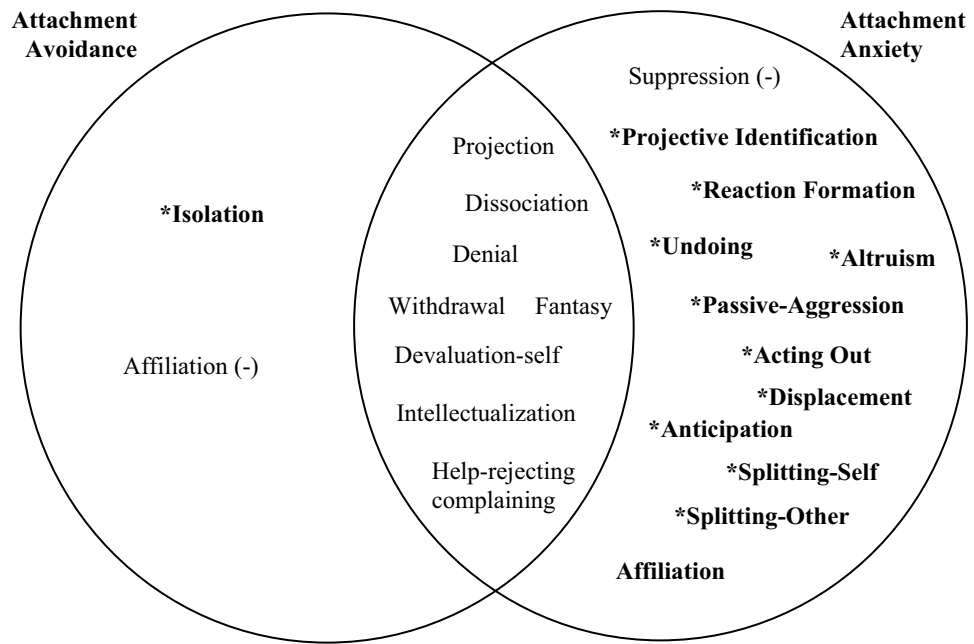
point in itself of distress-amplification involved in the hyper-activating strategy. In contrast to attachment-anxiety, individuals with attachment-avoidance specialize in the defense *isolation*. Furthermore, both dimensions have associations with *altruism* and *affiliation* but, interestingly, in opposite directions.

The differences fit with the theory about the underlying goals and motives of the different dimensions of attachment (Brennan et al., 1998; Shaver & Mikulincer, 2002; Simpson & Rholes, 2017). The goals of maintaining interpersonal distance and personal control and avoiding the experience of vulnerability and interpersonal needs seem to dominate those who display high levels of attachment-avoidance. In contrast, the goals of maintaining extreme closeness, gaining security, unrelenting support-seeking, and retaining proximity to an attachment figure at all times seem to motivate those with high attachment-anxiety.

Character defenses of attachment-anxiety

Consistent with expectations, the hypothesis was supported that attachment-anxiety predicts defenses that have a hyper-activating theme (i.e., involving the amplification of distress, self-devaluation, and poor self-other differentiation) and that reflect cognitive disconnection. Furthermore, the positive association with the defense, *acting out* (impulsive displays of emotion) corresponds with previous research showing an association with attachment-anxiety and exaggerated distress, manifesting in protest behaviour such as excessive crying (Drenger et al., 2017).

The positive association between attachment-anxiety and the defense mechanisms of *altruism*, *affiliation,* and *fantasy* is consistent with attachment-anxious people's heightened need for others' proximity and support (Mikulincer et al., 2009). According to DSM-IV (APA, 1994), defensive *affiliation* entails dealing with perceived threats by turning to others for help or support. Given the intense need for deep interpersonal connection accompanying attachment-anxiety, *affiliation* as a defense can manifest in stalking behaviour or an obsessive relationship via communicative technology (e.g., repeatedly seeking assurances from someone via a mobile phone). The defense *fantasy* can also reflect obsession, possibly as a means to entertain separation anxiety and achieve a fantasised sense of closeness (i.e., if not in reality, then achieving the feeling mentally).

At the higher factor level, *the image-distortion defense style* stands out for attachment-anxiety. These items include: *"I often change my opinion about people; at one time I think highly of them, at another time I think they're worthless,"* and *"when dealing with people, they often end up feeling what I feel."* This finding is in line with other studies examining the associations between attachment-anxiety and projective mechanisms (Mikulincer & Horesh, 1999; Prunas et al., 2019) and the characteristic use of identification, seen in an illusory sense of similarity and blurring of boundaries between self and other (Cramer & Kelly, 2010). In the close relationship between a person with attachment-anxiety and a person with secure attachment, image-distorting mechanisms such as projective identification can support the mimicking of secure-attachment behaviours. This could be conceived as a long-term defense strategy to earn attachment-security.

Furthermore, the negative relationship between attachment-anxiety and *suppression* is consistent with previous research (Mikulincer et al., 2004). These researchers suggest that people with high attachment-anxiety keep painful thoughts active in working memory. Therefore, they may have difficulty defusing from difficult thoughts and feelings. In addition, the positive associations found here with the defenses *anticipation* (anticipating threats) and *fantasy* are consistent with the data that individuals with high attachment-anxiety are prone to rumination (Garrison et al., 2014).

This pattern of defensive functioning fits well with Shaver and Mikulincer's (2002) conceptualization of the hyperactivating strategy, which aims to keep the attachment system in a chronically activated state by exaggerating perception of threats and intensifying the experience of stress. Our findings also agree with Griffin and Bartholomew's (1994) model of the preoccupied pattern (high attachment-anxiety), defined by a negative self-image and a positive other-image. This is reflected in *splitting-self* and *splitting-other,* in conjunction with *devaluation-self* as character defenses of attachment-anxiety.

Character defenses of attachment-avoidance

On the other hand, it was hypothesized that attachment-avoidance predicts the defenses that entail a deactivating theme and will also correspond with mechanisms of suppression, isolation, repression, self-enhancement, and devaluation of others. This hypothesis turned out to be accurate in part. For example, *isolation* emerged as a character defense, but *suppression, repression* and *devaluation of others* did not. As such, some results contradicted both our expectations and theory.

Given the theory that attachment-avoidance is represented by a positive self-model (Griffin & Bartholomew, 1994), we thought that this would imply the use of adaptive defenses. However, our findings indicate that attachment-avoidance negatively predicted the adaptive defense style. This suggests that a positive others-model is fundamental to an adaptive defense style, something which, according to Griffin and Bartholomew (1994), attachment-avoidance lacks. Furthermore, the exploratory finding that attachment-avoidance negatively predicts *idealization*, *rationalization*, and *sublimation* may indicate a general pessimistic mentality.

Concerning individual defenses that characterise attachment-avoidance, *isolation* uniquely stands out. This is represented by the items *"often I find that I don't feel anything when the situation would seem to warrant strong emotions"* and *"I'm often told that I don't show my feelings."* This is consistent with other research showing associations between attachment-avoidance, a restrictive and negative experience of crying (Drenger et al., 2017), and emotional inhibition schemas (McLean et al., 2014).

Contrary to our hypothesis, the defense *repression* showed no significant correlation with attachment-avoidance. This aspect of our results conflicts with Bowlby's (1980) view of the deactivation of the attachment system involving repression. Furthermore, this conflicts with Prunas et al. (2019), who found an association between repression and attachment-avoidance but used a different defense measure than we did, albeit using still the self-report method (The REM-71; Steiner et al., 2001). However, the nature of what repression entails (i.e., unconscious blocking) may possibly better explain the present finding of lack of connection. If there is an unconscious blockage or inhibition with memory retrieval, any test items that tap into this will likely be quickly rejected. As such negatively worded items with reverse valuation may thus have a better chance of accessing this defense. Another possibility is that the two items that measure the construct repression in the DSQ-60 lack face validity.

Although we expected a connection between attachment-avoidance and the defenses *devaluation of other* and *omnipotence*, this was not observed in our results. While this finding contradicts expectations, previous findings that attachment-avoidance is associated with positive impression management (Mikulincer & Orbach, 1995) suggest that relationships' value is sometimes denied but also actually valued. Negative associations with *altruism* and *affiliation* are consistent with the original literature showing compulsive self-reliance and a tendency to shun support (Bowlby, 1980).

Another consideration is that Griffin and Bartholomew's (1994) model did not fully translate to our findings on the defensive functioning of attachment-avoidance. Given the assertion that the dismissing pattern (high attachment-avoidance) is defined by a positive self-model and a negative other-model, we expected connections with interpersonal/intrapersonal themed defenses corresponding with these self/other models. Considering the expectation that negative-interpersonal defenses would link with attachment-avoidance, there was an association with *withdrawal* and negative associations with *altruism* and with *affiliation,* but no association with *devaluation of others.* We also expected a link between attachment-avoidance and positive intrapersonal defenses. However, contrary to these expectations, there was no association with *omnipotence* and a negative association with the defense *self-assertion* (albeit weak) and *devaluation of self.* It is conceivable that the positive self-model of attachment-avoidance is actually a reflection of vulnerable narcissism, and future research could attempt to address that question.

Similarities and shared defenses

Regarding the results on shared psychological defenses, our hypotheses supported the position that both attachment dimensions are linked to the affect regulation style of defenses. Common individual defenses included: *help-rejecting complaining*, *devaluation of self, denial, projection, intellectualization, dissociation, fantasy,* and *withdrawal.* Both attachment orientations were positively correlated with *splitting*. However, when examined in the regression model, it emerged that *splitting* is unique to attachment-anxiety. We speculate that although both dimensions share some defenses, the motivation and function of the same defenses may differ. This is a topic that could be investigated in future research. For example, for attachment-avoidance the defense *denial* may link with the failure to acknowledge attachment needs. On the other hand, when it comes to attachment-anxiety, denial can be useful to blur the reality that unhealthy relational boundaries are at play, or that attachment behaviours are extreme enough to be classed as obsessive/stalking. Also, the defense *withdrawal* was common in both forms of attachment insecurity. This may be explained by the pull–push dynamic and relational ambivalence of attachment-anxiety. For attachment-avoidance, there is the general reliance on distance coping and a pattern of pulling away behaviours that correspond with a habit of defensive withdrawal.

General assessment and theoretical implications

Based on the literature, we incorrectly expected that attachment-avoidance would be the stronger predictor of global defensiveness. This is because attachment-avoidance has received more attention than attachment-anxiety for its theorised link with defensiveness (Fraley et al., 1998, 2000; Mikulincer & Orbach, 1995). According to the findings, however, only attachment-anxiety has a uniquely predictive relationship with global defensive functioning. While the amplification of distress associated with attachment-anxiety may contradict the common conceptualisation of defenses, a hyperactivating emotion regulation strategy clearly fulfils a defensive role. As Mikulincer et al. (2009) observe, "regulation" can also mean histrionic intensification (exaggerated distress). Paradoxically, distress-amplification is a proximity-seeking gesture, that takes detours to achieve self-regulation. Additionally, the insatiable craving for closeness and connection associated with attachment-anxiety may also necessitate the blurring of self-other boundaries, which lends itself to defenses such as projective identification.

Limitations and directions for future research

There are several limitations in this study. While student sampling has many advantages, such as easy access and low cost of data collection, it may not represent the entire population. Problems of generalisability may thus arise in connection with this data. These results are also based on a single study, and only a limited number of comparative studies are available. Future research should further develop and confirm these initial findings.

Additionally, many of the correlation sizes are small to moderate, indicating that additional factors need to be considered to account for a greater proportion of variance. But we don't want to underestimate the smaller correlations. According to Janse et al. (2021), the interpretation of the strength of correlation coefficient should always depend on context and purposes. Small but significant effects can translate into substantial real-world social effects (Rosenthal, 1986). Some of the exploratory findings here (not based on our hypothesized predictions) may represent false-positives. However, some may represent untapped knowledge e.g., the link between attachment-avoidance, *fantasy* and *devaluation of self*, and could be of interest for future studies.

The self-report method to assess psychological defense mechanisms has also been criticised (Davidson & MacGregor, 1998). As with most self-report questionnaires, social desirability is generally a concern. Using self-report as a method of assessing supposedly unconscious mechanisms is also somewhat paradoxical. However, the items ask about attitudes and behaviours that are believed to reflect an underlying defense rather than specifically the defense itself.

Another major source of limitation is the DSQ itself. The instrument has undergone numerous revisions since its original inception, and there are now various available versions. As is generally recognised, this scale has many psychometric problems (Davidson & MacGregor, 1998; Thygesen et al., 2008). The factor structure of the DSQ-60 also lacks theoretical grounding. Furthermore, there is an apparent lack of rationale as to why certain defenses have been clustered together. For example, although defenses can be coherently conceptualised according to development stages (e.g., immature, neurotic, and mature defenses), why any one individual would be expected to partake in a number of such defenses is unclear given the pattern of defenses observed in clinical practice (e.g., borderline defenses). While the use of defense tiers and an overall defense score appears to reduce the low reliability of individual defense scores, it potentially misses valuable nuances derived from the investigation at the level of individual defenses. As seen in the present findings, important elements can be obscured, and information can even be lost when the individual defenses are placed within

ambiguous categories as presently found in the DSQ. In addition, as Eisinga et al. (2013) emphasize, it is problematic to just have two items to identify an underlying construct. The scale is also aesthetically uneven as 16 of the 30 individual defenses are not placed under a factor. Furthermore, it could be debated whether the items are good representations of the defenses they are measuring (see supplementary materials). Some items could further benefit from being rewritten. During the tests for normality, there were some highly skewed items that may partly be explained by impression management or wording bias, e.g., for the variable altruism (item—"helping others makes me feel good").

Looking ahead, further attempts to improve the self-report measurement of defense mechanisms may include item refinement and adding more items to represent each individual defense. In addition, given that psychological defenses are layered and characterized by conflict and confusion, the items need to more clearly address such states. It is probably also beneficial to incorporate reverse-coded items. Finally, given that attachment shows a promising relationship to defense, future scales could investigate whether attachment might provide a theoretically and empirically sound basis for defense scales.

Application and conclusion

Based on attachment theory, the perspective we offer is that the templates for psychological defenses are formed early in life and continue to be determined by internal working models of attachment. Attachment defenses may thus represent a person's default defensive setting. In this regard, character defenses can be difficult to unlearn and resistant to change since it requires leaving one mental model to adapt to another. For this reason, we refer to the attachment-related defense mechanisms as "default defenses".

With respect to implications for psychotherapy, there is evidence of a longitudinal relationship between defenses and changes in attachment-related characteristics throughout psychotherapy treatment (Békés et al., 2021). According to Kobak and Bosmans (2019), defensive strategies are partly responsible for the continuity of the insecurity cycle. Insecurity can be a recursive cycle in which the insecure individual interprets and reacts to communication in a way that maintains or exacerbates the perception of threat, confirms expectancies, and activates defensive strategies in an attempt to reduce difficult feelings. Therefore, developing insight into a person's attachment-related defensive patterns can help break the cycle. Including a person's defensive style as part of the diagnostic formulation may also help with intervention plans. Slade and Holmes (2019) suggest that therapists should tailor their techniques based on the attachment orientation of an individual client/ patient. For instance, a containment therapy approach that teaches grounding skills may be helpful for those who are

attachment-anxiety-orientated, whereas coaching emotional-responsiveness skills would be helpful for clients with attachment-avoidance. Furthermore, attachment-related defenses can manifest in the clinical setting, accounting for ruptures in therapy based on different attachment dimensions. As such, facilitating clients to build awareness of their defense patterns in the initial stages of treatment may prevent early drop-out.

In consideration of the empirical measurement of psychological defenses, our findings suggest that perhaps a hierarchy of adaptiveness (as found with the DSQ) is not the best way to develop a defense classification system. Dichotomizing the defense as either mature or immature may be helpful when attempting to transform a client's pattern of maladaptive defensive functioning. However, conceptualizing defensive functioning within the context of personality seems to make greater theoretical and clinical sense (e.g., borderline defenses, narcissist defenses). Our findings suggest that the two-dimensional model of adult attachment provides a promising framework for organizing psychological defenses. Hyperactivation and deactivation are useful concepts for approaching defenses. Creating an attachment defenses model is a way forward for defense research and assessment instruments.

In conclusion, the present study shows that there are meaningful relationships between defenses and both attachment-avoidance and attachment-anxiety. The results show a clear pattern of what constitutes the psychological defenses characteristic of attachment-anxiety and the psychological defenses characteristic of attachment-avoidance. This has not yet been systematically presented in the existing literature. It is conceivable that psychological defenses can be characterized using an attachment framework, which may provide a better anchor for the empirical measurement of defense mechanisms. Using attachment style as an organizing principle can add value to the examination of defensive functioning, both in clinical practice and in research. This holds promise for greater theoretical integration between psychodynamic and attachment approaches while opening up potential clinical avenues for future exploration.

Declarations The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethical approval This study was approved by the Humanities and Social Sciences Human Research Ethics Committee, Macquarie University and was performed in accordance with the National Statement on Ethical Conduct in Human Research (2018/2007).

Informed consent Informed consent was obtained from all individual participants included in the study.

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