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# Validation of the Apperception Test God Representations: An implicit measure to assess attachment to God representations. Associations with explicit attachment to God measures and with implicit and explicit measures of distress

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## Abstract

In the context of theistic religions, God representations are an important factor in explaining associations between religion/spirituality and well-being/mental health. Although the limitations of self-report measures of God representations are widely acknowledged, well-validated implicit measures are still unavailable. Therefore, we developed an implicit Attachment to God measure, the Apperception Test God Representations (ATGR). In this study, we examined reliability and validity of an experimental scale based on attachment theory. Seventy-one nonclinical and 74 clinical respondents told stories about 15 cards with images of people. The composite Attachment to God scale is based on scores on two scales that measure

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dimensions of Attachment to God: God as Safe Haven and God as Secure Base. God as Safe Haven scores are based on two subscales: Asking Support and Receiving Support from God. Several combinations of scores on these latter subscales are used to assess Anxious and Avoidant attachment to God. A final scale, Percentage Secure Base, measures primary appraisal of situations as nonthreatening. Intraclass correlation coefficients showed that the composite Attachment to God scale could be scored reliably. Associations of scores on the ATGR scales and on the explicit Attachment to God Inventory with scores on implicitly and explicitly measured distress partly confirmed the validity of the ATGR scales by demonstrating expected patterns of associations. Avoidant attachment to God seemed to be assessed more validly with the implicit than with the explicit scale. Patients scored more insecure on the composite Attachment to God scale and three subscales than nonpatients.

## Keywords

Attachment to God, distress, God representations, implicit measure, personality disorders

## Introduction

Research has demonstrated a predominantly positive influence of religiosity/spirituality on well-being and mental health, as the two monumental reviews of Koenig and his co-workers (Koenig et al., 2001, 2012) demonstrate. Koenig developed models for various types of religiosity/spirituality to explain the found associations. His Western model assumes that for adherents of a monotheistic religion, the relationship with God is the most important source for these associations. Stulp, Koelen, Schep-Akkerman, et al. (2019) argued that not merely having a relationship with God, but the type of relationship persons have with their God, might be a central mechanism in explaining the associations. In their meta-analysis, they demonstrated this by finding medium effect sizes for the associations of positive God representation measures (positive God image and secure attachment to God measures) with well-being and for the associations of two out of the three examined negative God representation measures (negative God image and anxious and avoidant attachment to God) with distress.

Most of the research at God representations is conducted with self-report measures, although many scholars see this as an important limitation, mostly because of the assumed implicit functioning of God representations (Birgegard & Granqvist, 2004; Cassibba et al., 2008; Exline et al., 2013; Granqvist et al., 2007; Grubbs et al., 2013; Kézdy et al., 2013; Knabb & Pelletier, 2014; Miner et al., 2014; Zahl & Gibson, 2012). Self-report measures are known for their susceptibility to social desirability effects. For self-report measures in the domain of religion, doctrine-related or religious identity-related effects add up to these effects (Brenner, 2017; Jong et al., 2017). If implicit processes/mental representations indeed play an important role in religious functioning, explicit measures might fail to tap into these processes. In a clinical setting, this seems especially important when more pathological implicit God representations prevent religious persons from deriving comfort, support and strength from their explicit, and more cognitive, doctrinal belief in a benevolent God. For patients suffering from personality pathology, self-reported God representation measures might, because of difficulties with introspection (Eurelings-Bontekoe et al., 2010; Schaap-Jonker et al., 2002), to an even stronger extent, differ from their implicit negative God representations. Discrepancies between explicit and implicit God representations might be of diagnostic value (Hall & Fujikawa, 2013) and may be indicators of psychopathology. Overlooked or neglected insecure attachment to God, which is especially likely in case of avoidant attachment, may in therapy obstruct the use of potential powerful religious healing sources for patients who wish to integrate religion in their treatment.

Various scholars emphasize the importance of developing well-validated measures of implicit God representations (Finke & Bader, 2017; Gibson, 2008; Hall & Fujikawa, 2013; Sharp et al., 2019). Hall and Fujikawa (2013) even state that advance in the field of attachment to God representations research is dependent on more sophisticated measurement methodologies that enable the exploration of the relationship between implicit and explicit attachment to God representations.

Because well-validated implicit measurement instruments for God representations are hardly or not available at the moment, we developed the Apperception Test God Representations (ATGR) and already reported about its construction and about the reliability and aspects of validity of those scales that are based on object-relational functioning (Stulp, Glas, & Eurelings-Bontekoe, 2019). In their critical review of measures of God representations, Sharp et al. (2019) distinguish seven performance-based measures of God representations, and see it as a drawback that these measures generally do not demonstrate much evidence of reliability and validity. They consider, only based yet on its associations with explicit and implicit measures of well-being, the ATGR with its object-relation scales as currently the most thoroughly validated performance-based measure of God representations, with (only) adequate evidence of reliability and validity. The object-relation scales of the ATGR were derived from the well-validated Social Cognition and Object Relations Scales (SCORS; Westen, 1985).

Because research at God representations is, besides by object relation theory, also heavily inspired by attachment theory, we added an experimental Attachment to God scale, with some subscales, based on concepts from attachment theory, to the ATGR. After discussing the main concepts of attachment theory and their application to God representations, the need for such a measure will also be demonstrated.

### *God representations and attachment theory*

In the last decade of the last century, research into God representations received a great boost from attachment theory (Hall & Fujikawa, 2013). Attachment theory (Bowlby, 1972) emphasizes strategies people use to restore a (distorted or threatened) sense of security. These strategies give rise to particular attachment patterns, which are related to specific internal working models (IWMs) of attachments. These IWMs consist of representations of self and (the availability of) important others (Bretherton & Munholland, 2008). Insecure attachment patterns are related to psychopathology, as is summarized by Mikulincer and Shaver (2012). Important supposed mechanisms at work are problematic affect regulation and mentalization (Fonagy et al., 2004).

An important function of the attachment system regards the distinction between two functions of attachment relationships. Theoretically, the attachment system is activated only in case of threat/danger leading to felt insecurity. This function is referred to as the safe haven function of the attachment relationship (Ainsworth, 1985b; Collins & Read, 1994). The other function of the attachment relationship, referred to as the secure base function (Ainsworth, 1985b; Waters & Sroufe, 1977), is at work in the absence of threat/danger, allows activation of the exploratory system and consists of the notion of being guided and supported by the attachment figure. Secure attachment refers to persons who are confident of the availability, responsiveness and helpfulness of attachment figures in stressful situations, and who are able to feel secure in exploring the world in the absence of threat. Anxious attachment refers to persons who are uncertain about this availability of the caregivers, get anxious and try, without much success, to reduce their anxiety by clinging to the attachment figure. Avoidant attached persons cope with their lack of confidence in others by avoiding help seeking. They prefer to be self-reliant in case of distress (Ainsworth, 1972, 1985a, 1985b; Bartholomew & Horowitz, 1991; Hesse, 1999; Main et al., 2008; Stayton et al., 1973).

Many scholars from attachment theory view attachment to God representations as a special form of relational representations that, as psychological phenomena, are subject to the same psychological mechanisms as interpersonal attachments and can be studied with the same methods (Kirkpatrick & Shaver, 1990). God can be viewed as the ultimate attachment (father) figure who is always present, knows and understands his children, and comforts, helps and guides them. This conceptualization of God as an attachment figure has led to the hopeful idea that a secure attachment to God can compensate for insecure interpersonal attachments, as well as to the more pessimistic idea that secure or insecure interpersonal attachment corresponds with the type of attachment to God (Granqvist, 1998).

Most evidence indicates that IWMs of interpersonal representations and of attachment to God representations correspond (Granqvist et al., 2012; Hall & Fujikawa, 2013), by demonstrating moderate associations. Moreover, the importance of attachment to God is demonstrated by finding secure attachment to God to be positively associated with well-being (Belavich & Pargament, 2002; Feenstra & Brouwer, 2008; Kirkpatrick & Shaver, 1990, 1992), and insecure attachment to God to be positively associated with distress and with symptoms of mental health problems (Ano & Pargament, 2013; Bickerton et al., 2015; Bradshaw et al., 2010; Exline et al., 2014; Hancock & Tiliopoulos, 2010; Homan, 2010, 2014; Homan et al., 2012; Kézdy et al., 2013; Knabb, 2014; Knabb & Pelletier, 2014; Miner et al., 2013, 2014; Reiner et al., 2010; Sandage & Jankowski, 2010).

Research at attachment to God is mostly based on self-report assessment stemming from attachment research in the social cognition domain. In the developmental attachment perspective, adult attachment models are based on representations of the adult's childhood relationship with primary caregivers and are mostly assessed with the Adult Attachment Interview (AAI; Bakermans-Kranenburg et al., 1993; Hesse, 1999, 2008). For interpersonal attachments, Roisman et al. (2007) demonstrated that the association between attachment as measured by the implicit AAI and explicit attachment style dimensions as measured by self-report is trivial to small. We expect that for attachment to God, this will also be the case. However, a developmental attachment perspective approach, focusing on implicit working models, has hardly been used in the attachment to God research. In the next paragraph, we summarize the scarce research that used implicit measures for interpersonal attachment or attachment to God.

### *Use of implicit attachment measures in attachment to God studies*

A few studies in the religion domain acknowledge the importance of implicit processes in attachment, but compared implicitly measured interpersonal attachment with explicit measures of – not on attachment-theory based – God representations (Granqvist et al., 2007) or with explicit attachment to God measures (Cassibba et al., 2008). Granqvist et al. (2007) found a significant association of a loving God image with the subscale 'loving mother' of the 'estimated experiences' AAI scale, which is based on self-report, but not with the more implicit 'state of mind' aspect of attachment representations. Cassibba et al. (2008) found significant associations between attachment to God classifications and one of the self-reported negative attachment experiences scales (role reversal father), but no significant associations between the explicit attachment to God classifications and the more implicit 'state of mind' classification for adult attachment.

In a few studies, assessment of attachment to God representations was based on interviews that focus on narratives of religious experiences. This approach acknowledges the susceptibility of self-report for impression management and is in alignment with the notion of Hall (2007a, 2007b) that attachment representations have a narrative structure. Proctor et al. (2009) derived an extensive number of relational markers from attachment theory to assess attachment to God styles. However,

they do not claim to measure implicit attachment representations. Kimball et al. (2013) developed a coding system for attachment to God language in interviews about religious experiences, but did not qualify their measure as explicit or implicit. They found no statistically significant associations between their attachment to God measures and self-report measures of interpersonal (peer and parent) attachment.

Three studies specifically aimed at assessing implicit attachment to God representations. All three based their assessment on adaptations of the AAI. Marchal (2010), in a qualitative study with six subjects, found clear correspondence between implicit AAI state of mind classifications of adult attachment and of implicit attachment to God. Fujikawa (2010), in a study among 19 college students, found that the implicit state of mind classifications of adult attachment, measured with the AAI, and implicit attachment to God, measured with the Spiritual Experiences Interview, were significantly associated. Moradshahi et al. (2017) developed the Spiritual Narrative Questionnaire, a paper-and-pencil questionnaire with open end questions, to assess psychospiritual health from a relational spirituality perspective. One of its five aspects is secure attachment to God, assessing, in accordance with the AAI, the extent to which narratives are coherent, thorough, complete and open. External validation took place with only an explicit measure; the Spiritual Transformation Inventory (STI), but the secure Attachment to God scale was the only scale that did not correlate significantly with any of the STI subscales.

Only one study (Olson et al., 2016) used a mixed-method design by using both the explicit Attachment to God Inventory (AGI) and drawings of God and oneself that were analysed using a specially developed scoring system, with an attachment to God subscale. Interrater reliabilities were excellent, also in case of untrained graduate students. However, the study did not examine the validity of this scale.

Recent applications of social cognition theories and methods to the domain of religion also stress the importance of implicit processes (Birgegard & Granqvist, 2004; Granqvist et al., 2012; Pirutinsky et al., 2017). The procedure of subliminal priming allows researchers to examine the influence of various aspects of religion on behaviour by means of experiments instead of methodologically much weaker observational studies, and one of its benefits is the diminishing of shared method variance that hinders studies that use self-report methods only. However, this approach, to the best of our knowledge, has not yielded any clinically useful measures to assess individual attachment to God representations, and has several disadvantages, as the debate about what underlying psychological processes these measures actually tap into, and a less straightforward interpretation about what they measure (Sharp, 2019). Nevertheless, this approach may be useful in validating the implicitness of attachment to God measures (Granqvist et al., 2012).

Taken together, although some measures and scoring procedures for measuring implicit attachment to God have been developed, we agree with Sharp et al. (2019) that there are no well-validated implicit attachment to God measures at the moment.

### *An apperceptive approach for measuring implicit attachment to God*

Although Sharp et al. (2019) advise the use of an – on the AAI based – interview and coding for measuring implicit attachment to God, results with these kinds of interviews have until now not demonstrated good validity. Because the scoring of the AAI heavily rests on coherent, detailed narratives about remembered concrete experiences with the attachment figures, and religious experiences in our opinion may not have the same kind of concreteness, we wondered if the apperception approach of the ATGR, eliciting fantasized stories about the relationship with God, might be more appropriate to assess implicit attachment to God representations. This narrative approach is theoretically undergirded by Hall's (2007b) conceptualization of attachment as a



narrative structure. He states that our attachment filters, our IWMs through which we experience the world, are stored in the form of stories, and that through stories, we access them. Based on McAdams' (1993) narrative approach, Hall (2007b) summarizes,

Stories are emotionally meaningful sequences of actions that are causally linked in a particular way. They contain a setting that provides the overall context for the unfolding of a series of emotionally meaningful events. In addition, stories contain characters, human or human-like figures that live within this setting. An initiating event occurs to the central characters, motivating them to strive after certain goals, which in turn leads to a consequence. Multiple episodes of a story, each containing this basic structural sequence, build on each other and provide shape to the story as it unfolds. As the story unfolds, tension builds across the episodes eliciting in us a desire for resolution. This tension typically builds to a climax, or turning point, which is followed shortly by some solution to the plot. (p. 33)

We assume that, besides biographical stories, fantasized stories about characters' relationship with God, elicited by pictures, will also reveal implicit working models of the attachment relationship with God. There are a few other interpersonal attachment measures that are based on fictional narratives, for example, the Attachment Script Assessment (Chen et al., 2013) that uses carefully selected words to prompt the storytelling and the Adult Attachment Projective Test (George et al., 1999) that prompts stories by seven pictures with attachment scenes. Pictures may address a deeper, more emotional and implicit level than verbal prompts, because, according to Bucci (1977), our attachment experiences are – on a gut level – primarily coded as and organized in images.

When a story contains a threat for the character, securely attached persons will be able to see God as a safe haven and let their characters turn to God for help or comfort, and the solution of the story will compromise the experience of God's help, support, proximity, emotional closeness or comfort. Persons who are insecurely attached to God will in their stories disclose their strategies to maintain a sense of security by hyperactivating or deactivating the attachment system. Hyperactivation (related to an anxious attachment style) will in the stories be disclosed as turning to God for help, but the solution of the story will not compromise the experience of God's help, support, proximity, emotional closeness or comfort. Deactivation (related to an avoidant attachment style) will in the stories be expressed as not turning to God for help, support and so on. When a story contains no threat, we assume that persons who are securely attached to God will let their characters experience God's presence or guidance in exploring their world, whereas persons who are not securely attached to God, will not let their characters experience this presence or guidance.

### *The current study*

In this study, we examine the validity of the Attachment to God scales of the ATGR based on its associations with measures of distress. The associations of the Attachment to God scales of the ATGR (implicit measure) with measures of implicit and explicit distress will be compared to the associations of explicit measures for attachment to God with distress. We hypothesize that the associations between same-method (explicit with explicit, and implicit with implicit) measures will be stronger than the associations between mixed-method (implicit with explicit) measures.

We want to base our validation of the Attachment to God scales of the ATGR on two samples: (a) a group of religious patients with personality disorders, because results from Koenig et al. (2012), Schaap-Jonker et al. (2002) and Schaap-Jonker et al. (2017) indicate that these patients have less mature and more negative God representations, which possibly cannot be found and therefore also not be measured in a nonclinical group, and (b) a group of religious nonpatients that

is comparable to the patient group on age, sex, level of education, religious salience and affiliation. We hypothesize that patients suffering from personality pathology will have lower scores on secure attachment to God, as a specific form of God representations, than nonpatients.

Because Hall and Fujikawa (2013) assume that discrepancies between implicit and explicit God representations may be the result of psychopathology, we will also examine whether in a nonclinical group, the associations between explicit and implicit Attachment to God scales will be stronger than in the clinical group.

We know of only one study about the associations between attachment to God representations and well-being/distress that used an implicit measure: Ghafoori et al. (2008), among a sample of 102 war veterans, found only very weak correlations between explicit attachment to God measures and implicit measures of distress. To the best of our knowledge, this is the first study with implicit and explicit measures both for attachment to God representations and well-being/distress.

## Method

### Participants

The first sample of this study consists of 74 patients from a Dutch Christian mental health care institution that followed one out of four inpatient treatment programmes for personality disorders. Together with the sent invitation for their first appointment at the institute, all patients received a letter with the request to sign for participation in this study. Most of the patients consented, and approximately two-third of them participated in the study. The ethical medical committee of the Free University of Amsterdam judged the study not to be subject to the Medical Research on Human Subjects Act. The ethical committee of the mental health care institution approved of the study. On the basis of a clinical interview focusing on Axis II of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000; First et al., 1997), patients received the following classifications: Personality disorder NOS: 25 (33.8%); C-Cluster personality disorders or features: 28 (37.8%); B-Cluster personality disorder or features: 13 (17.6%); features of A-Cluster and B-Cluster personality disorders: 2 (2.7%); A-Cluster personality disorders: 1 (1.4%); and deferred diagnosis: 5 (6.8%).

The second sample consisted of 71 nonpatients. Knowing that the patient sample would consist of young religious adults from various protestant denominations, we aimed at a sample that was comparable to the clinical group on sex, age, religious affiliation and salience, and level of education. Participants were therefore recruited at a Dutch Christian University of Applied Science, Viasa Zwolle; at a Dutch Christian intermediate vocational education school, the Menso Alting College, Zwolle; at four Christian student's associations in Zwolle; and at a local Orthodox church community. We also approached these groups because of our relationships with its members; it would be much more difficult to recruit participants and ask them for such an intense investment if we would not have these relationships.

Important exclusion criteria for both samples were not having a (self-stated) personal relationship with God or very low scores on a religious salience scale.

Regrettably, the samples were not matched, because we had to do the assessments and scoring in the nonclinical group at the beginning of our research project, whereas the assessment of the patient group was dependent on the progress of intakes for the treatment groups. More detailed information about the procedures and also about the measure is given in Stulp, Koelen, Glas, and Eurelings-Bontekoe (2019).



## Measures

### ATGR

*Materials.* The ATGR is a narrative test. It consists of 15 cards specially developed for measuring implicit God representations (see Supplemental Appendix A). Narratives are analysed by a specially developed coding system, derived from the Westen scoring system (SCORS, Westen, 1985) and – for this study – from attachment theory.

#### *Assessment and coding procedures*

*Assessment.* According to protocol, the assessment of the ATGR starts with the instruction that the subject should make up fantasized stories about the cards to be shown. These cards are introduced as (translated from Dutch) follows:

We will show you 15 cards about people relating to God, and/or about God relating to people. Would you make up a story about these cards? Would you tell what happens in the picture, what has led up to it, and how the story will end? Will you also address the question what the people in the picture think and feel? And what God thinks and feels, what he does and why?

The instruction is repeated at least one time. During the assessment, assessors should prompt only one time for a forgotten/not attended aspect and only by repeating the general question. The recordings of the assessments, with an average length of approximately 1 h, are transcribed according to protocol.

*Coding procedure.* The coding is based on a theoretically driven approach, using attachment concepts and Hall's, Bucci's and McAdams' notions of, respectively, the narrative structure of attachment representations, levels of emotional coding and story plots. Scoring took place by 15 students in nine couples. First, both students per couple independently scored their protocols; then they compared their scores. Couples discussed different scores to achieve consensus. Scoring took place based on a codebook with detailed scoring rules. Coders followed an intense training programme, given by the first author, who is an experienced psychologist with much experience with administering aperceptive and projective tests. For each scale, at least 15 h of training were spent: three joint sessions of 3 and 6 h of individual scoring at home.

#### *ATGR scales*

*God as a safe haven (Safe Haven).* This scale is scored only when a story contains elements of threat or danger for the character. Scores are based on combinations of story elements as characters turning or not turning to God for help, and receiving and experiencing help from God, or not receiving or experiencing help from God. To facilitate the scoring process, each story is first scored on two subscales, and these two scores are then combined for the Safe Haven score of the story. The subscales are *Asking Support from God* (Asking Support) and *Receiving Support from God* (Receiving Support). Asking Support from God is scored dichotomously; it is scored positive when the character actively seeks contact with God, for example, by reading in the Bible, by praying or by attentively listening to a sermon. This also encompasses the expression of emotions towards God, for example, sadness, confusion or anger. It is also scored positive when the character is expecting help or support from God. The expected help may consist of active interference in the situation (to be cured, saved, a positive solution for the situation), but also of receiving insight or strength for dealing with a difficult situation. Scorers must also be alert on more indirect clues

that reveal that the character expected help from God, for example, when the respondent only tells that a character in a specific situation feels rejected by God. Receiving support from God is scored on a 3-point scale. The most positive score (3) is attributed when God supplies and this is also experienced by the character as coming from God. The score 2 is attributed when God supplies, but the help is in the story not recognized by the character as coming from God. Score 1 is attributed when God does not help. Help from God is defined as help that is in alignment with the expressed need. When God's actions only have the intention or effect that the character gets more oriented towards God, but there is no actual relief regarding the expressed need, score 1 must be attributed. Of course, when a character purely asks for the experiencing of more closeness to God, and then this happens, it will be scored with a 3.

Each of the six combinations of scores on both subscales gets a specific score, ranging from 1 to 6: Not asking and not receiving support: 1; Asking and not receiving support: 2; Not asking support and receiving unexperienced support: 3; Asking support and receiving unexperienced support: 4; Not asking support and receiving experienced support: 5; and Asking support and receiving experienced support: 6. The ultimate Safe Haven score is the mean score of the Safe Haven scores of each story.

Specific attachment styles are also derived from the two subscales. We assume that an anxious attachment to God style will be expressed in the stories by characters asking for support from God but not receiving or experiencing this support. Scores on *Anxious attachment to God* are calculated by converting the relevant Safe Haven scores of each separate story. A Safe Haven score 2 (asking but not receiving support) is converted to an Anxious attachment to God score 3; a Safe Haven score 4 (asking support and receiving unexperienced support) is converted to an Anxious attachment to God score 2. We assume that an avoidant attachment to God style is expressed in the stories by characters not asking for and not receiving or not experiencing support from God. Scores on *Avoidant attachment to God* are calculated by converting the relevant Safe Haven scores of each separate story. A Safe Haven score 1 (not asking and not receiving support) is converted to an Avoidant attachment to God score 3; a Safe Haven score 3 (not asking support and receiving unexperienced support) is converted to an Avoidant attachment to God score 2. The final scores on Anxious attachment and Avoidant attachment to God are calculated by summing the scores obtained on each picture. Both scales have score ranges from 0 to 45.

*God as a secure base (Secure Base)*. This scale is scored only when a story contains no elements of threat or danger to the character. It is a 3-point scale. The score 3 is attributed to stories in which the characters experience God's presence and borrow strength from this presence or receive guidance for the current situation or future. This may also encompass life lessons from God to which the character responds. The score 2 is attributed when a character experiences the presence of God, but it remains unclear if he or she borrows strength of guidance from this presence. Score 1 is attributed when it is not mentioned that the character experiences God's presence. The scores of the separate stories are averaged.

*Attachment to God (attachment to God—overall)*. On the base of the scores on the scales Safe Haven and Secure Base, a total Attachment to God score is calculated. This is the mean score of the summation of Safe Haven and Secure Base scores over all 15 stories. The sum of Safe Haven scores is first divided by 2 to render the scores of this 6-point scale compatible with the 3-point scale of Secure Base.

*Percentage Secure Base.* This score represents the percentage of the 15 stories that could be scored on the dimension of Secure Base, that is, the percentage of stories that did not contain threat or danger. In terms of coping theory, this measure can be viewed to assess the primary appraisal of situations as threatening or nonthreatening, to be distinguished from the subsequently chosen strategies to cope with the situation (secondary appraisal).

#### *Other measures*

*Religious salience.* Religious salience was assessed by totaling the scores of five items on a 5-point Likert-type scale regarding the question of how important the participants' faith or life philosophy is in their own life. The items are I view myself as a religious person; My faith is important to me; My faith plays a big role when making important decisions; Without my faith, I could not live; and My faith has much influence on my daily life.

*AGI.* The AGI is an adaptation by Beck and McDonald (2004) of the measure Experiences in Close Relationships from Brennan et al. (1998). It consists of two scales: Anxiety over Abandonment from God and Avoidance of Intimacy with God. Both scales have 14 items, with answers scored on a 7-point scale (1 = strongly disagree, 7 = strongly agree).

The AGI (English version) has good psychometric qualities, with an internal consistency of  $\alpha = .80$  for the Anxiety scale and of  $.84$  for the Avoidance scale. A Principal Component Analysis (PCA) confirmed the two-factor structure. Scales had a shared variance of only 1.4% ( $r = .12$ ). Results of initial research suggest that AGI Anxiety is associated with adult attachment anxiety (Beck & McDonald, 2004) and that AGI Avoidance is associated with parental attachment (McDonald et al., 2005).

For this study, we translated the measure in Dutch, using back-and-forward translation between source and target language, the back-translation being conducted by a native English speaker. From the AGI scales, the Anxiety scale scored excellent on internal consistency ( $\alpha = .91$ ), the Avoidance scale scored good ( $\alpha = .90$ ).

*Outcome Questionnaire–45, patient and clinician versions.* The Outcome Questionnaire–45 (OQ-45; Lambert et al., 1996) is an American measure to assess clinical outcomes, translated and adapted for a Dutch population by K. De Jong et al. (2007). The Dutch version consists of four scales: Symptom Distress (SD), Interpersonal Relations (IR), Social Role Performance (SR), and Anxiety and Somatic Distress (ASD). The latter scale is a subscale that consists almost exclusively of SD items and is added to the Dutch version on the basis of the results of factor analysis. The measure also has a total score scale. Internal consistencies of the scales were good for OQ-total score (ranging from 0.91 to 0.93 in three different populations), for SD (0.89–0.91), for ASD (0.70–0.84) and for IR (0.74–0.80), and moderate for SR (0.53 in a community sample; 0.69 in a clinical sample). Scores on all scales were significantly lower for the normal than for the clinical population. Concurrent validity was sufficient, as shown by significant relations with other measures of distress (A. De Jong & Van Der Lubbe, 2001).

In this study, the internal consistencies of three OQ scales, based on Cronbach's alpha, were excellent: OQ-total ( $\alpha = .97$ ), OQ-SD ( $\alpha = .96$ ) and OQ-ASD ( $\alpha = .90$ ). The internal consistency of the OQ-IR scale was good ( $\alpha = .84$ ) and of the OQ-SR was too low ( $\alpha = .67$ ).

To obtain also an indirect measure of well-being/distress, for the clinical sample, the clinician filled in an adapted version of the OQ-45 Questionnaire, estimating the functioning of the patient on the various domains. This was done within the first 3 weeks after the start of treatment.

The internal consistency of the OQ-clinician total scale was excellent ( $\alpha = .92$ ). The internal consistencies of OQ-SD ( $\alpha = .89$ ) and of OQ-ASD ( $\alpha = .82$ ) were good; the internal consistencies of the OQ-SR scale ( $\alpha = .74$ ) and of the OQ-IR scale ( $\alpha = .73$ ) were fair.

## Data analysis

*Sample characteristics.* First, to examine significant differences between the nonclinical and clinical group on the potentially confounding variables sex, age, religious affiliation, religious denomination and level of education, we described and analysed characteristics of the two samples with *t* tests for independent samples and with Pearson's chi-square tests.

*Reliability.* Second, we analysed the reliability of the scoring of the ATGR Attachment to God–overall scale. We examined the interrater reliability with the intraclass correlation coefficient (ICC), the internal consistency of the scale by computing Cronbach's alpha, the normality of distribution of scale scores, and intercorrelations between the main and subscales.

*Construct validity.* Third, we examined the validity of the ATGR Attachment to God scales, by examining the strength of the associations of the implicit ATGR scales with the explicit Attachment to God measures. Moreover, we examined the associations between these measures on one hand, and the implicit and explicit measures of distress on the other hand. This was examined by (a) testing proportions of expected stronger correlations between scales, (b) testing differences in correlations, (c) examination of individual significant correlations between scales and (d) computing partial correlations between implicit Attachment to God scales and distress scales, controlling for the associations of explicit Attachment to God scales with distress scales, when both types of Attachment to God measures correlated significantly with distress measures.

*Testing proportions of expected stronger correlations between scales.* We compared the (absolute) strength of correlations of implicit versus explicit Attachment to God scales with the implicit or explicit object-relation scales, and also the strength of correlations of, respectively, the implicit and explicit Attachment to God scales with explicit versus implicit object-relation scales. The significances of proportions of stronger associations were tested by a binomial test, performed in EXCEL with the formula BINOM.DIST (number\_s, trials, probability\_s, cumulative). For the first argument (number of successes), we filled in the number of comparisons with stronger associations for the same-method combination; for the second (trials), we filled in the total number of comparisons; for the third argument (the probability of success), we filled in .5; and for the fourth, we filled in 'True', which yields the cumulative probability. If the proportion found was higher than 0.5, we used the formula 1 – BINOM.DIST; if it was lower than 0.5, we used the formula BINOM.DIST. Because these tests assume that the comparisons are independent, in the tested comparisons, we only used those four ATGR scales that were logically independent from each other: Asking Support, Receiving Support, Secure Base and Percentage Secure Base (PSB).

*Testing differences in correlations.* Expected differences between correlations were tested with the null hypothesis that these correlations were equal. If a correlation between a scale and a same-method scale ( $r_{12}$ ) was stronger than the correlation between this scale and an other-method scale ( $r_{13}$ ), this difference was tested one-sided using Steiger's (1980) formulas (14) and (15) for  $Z_1^*$  and  $Z_2^*$ , based on improved versions of Fisher's *r* to *z* formula. These formulas account for the shared variance between two scales of which the associations with another scale are compared ( $r_{23}$ ).

*Examination of individual significant correlations between scales.* To detect possible associations between specific scales, we inspected the strength and significance of the various correlations between scales in both groups.

*Partial correlations.* When implicit and explicit Attachment to God scales correlated significantly with the same distress scale, partial correlations were computed to test if there was a unique contribution of the implicit Attachment to God scales in explaining the variance in that distress scale.

*Differences between the clinical and nonclinical group in ATGR scale scores.* Fourth, we examined differences in scores on ATGR scales between the two samples with *t* tests for independent samples or (when distributions were not normal) with Mann–Whitney *U* tests to see if the nonclinical and the clinical group had different scores on the ATGR scales. We also checked with *t* tests, one-way analyses of variance (ANOVAs) and Pearson's correlation coefficients whether the potentially confounding variables sex, age, religious affiliation, religious denomination and level of education were significantly associated with the ATGR scales.

*Differences between the clinical and nonclinical group in discrepancies between implicit and explicit Attachment to God scores.* Fifth, by comparing correlations, we examined if discrepancies between implicit and explicit Attachment to God scores were larger for the clinical than for the nonclinical group.

## Results

### Sample characteristics

Table 1 displays sample characteristics for the variables sex, age, church denomination, religious affiliation and education. Church denomination is categorized into three groups: Orthodox, Mainstream and Evangelical/Baptist. For education (defined as the highest education that was finished with a diploma), the various educations were categorized in four levels. The lower levels (levels 1 and 2) pertain to lower general secondary education and intermediate vocational education, the higher levels (levels 3 and 4) to pre-university education and university.

The continuous variables age and salience did not meet the assumption of normality of the distribution, as indicated by the Kolmogorov–Smirnov and the Shapiro–Wilk tests that were both highly significant. Therefore, Mann–Whitney tests instead of *t* tests for independent samples were conducted. Results indicated that the nonclinical and the clinical sample differed highly significantly regarding age,  $U=4037$ ,  $p<.001$ , and salience,  $U=1943$ ,  $p=.007$ . Pearson's chi-square tests demonstrated significant differences between the nonclinical and the clinical sample in church denomination,  $\chi^2(2)=12.03$ ,  $p=.002$ , and in level of education,  $\chi^2(1)=27.84$ ,  $p\leq.001$ . The samples did not differ significantly regarding sex:  $\chi^2(1)=2.21$ ,  $p<.147$ .

Taken together, compared to the nonclinical sample, respondents in the clinical sample were older, more orthodox religious and stronger religiously committed, with lower educational level. It is therefore important to examine the effect of these potentially confounding variables in subsequent analyses.

### Reliability of ATGR Attachment to God scale

*Interrater reliability and internal consistency.* According to the guidelines of Cicchetti (1994), ICC for the Attachment to God–overall scale was excellent (0.90) for one couple, that scored 18% of the protocols, for three couples it was good, ICC=0.83–0.89% (82% of the protocols). The internal consistency of the scale, as indicated by Cronbach's alpha, was good ( $\alpha=.74$ ).

*Normality of distributions of scores.* The distribution of scores on Anxious attachment to God was significantly skewed to the left, as indicated by its *z*-score,  $z=5.61$ . The *z*-scores of the kurtosis of

**Table 1.** Sample characteristics.

Sample characteristics	Clinical group		Nonclinical group		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Sex						
Male	9	12.2%	15	21.1%	24	16.4%
Female	65	87.8%	56	78.9%	121	83.6%
Age						
17–19	10	13.5%	25	35.2%	35	24.1%
20–22	16	21.6%	33	46.5%	49	33.8%
23–25	20	27.0%	9	12.7%	29	20.0%
>25	28	23.8%	4	5.6%	32	21.1%
Church denomination						
Orthodox	29	39.2%	11	15.5%	40	27.6%
Mainstream	29	39.2%	46	68.4%	75	51.7%
Evangelical/Baptist	16	21.3%	14	19.7%	30	20.7%
Religious salience						
10–19	31	41.9%	14	19.7%	45	31.0%
20–22	22	29.7%	24	33.8%	46	31.7%
23–25	21	28.4%	33	46.5%	54	37.2%
Level of education						
1. VMBO	5	6.8%	0	0.0%	5	3.4%
2. HAVO/MBO	36	48.6%	15	21.2%	51	35.2%
3. VWO/HBO	25	33.8%	54	76.1%	79	54.5%
4. WO	8	10.8%	2	2.7%	10	6.9%

NOTE: VMBO: Voorbereidend Middelbaar Beroepsonderwijs (preparatory secondary vocational education); HAVO: Hoger Algemeen Voortgezet Onderwijs (senior general secondary education); MBO: Middelbaar Beroepsonderwijs (senior secondary vocational education and training); VWO: Voorbereidend Wetenschappelijk Onderwijs (pre-university education); HBO: Hoger Beroepsonderwijs (higher professional education); WO: Wetenschappelijk Onderwijs (academic higher education).

the distribution of scores on Safe Haven, Receiving Support and Anxious attachment to God were also significant, respectively  $z = -2.26$ ,  $z = -2.10$  and  $z = 4.08$ , indicating infrequent extreme scores. Distribution of scores on the other scales was normal.

*Associations between ATGR Attachment to God scales.* In the clinical group, the correlations between those ATGR Attachment to God scales (see Table 2) that are partly based on the same subscales were as expected all significant. However, the correlations between the independently computed scales ranged between .00 and .53, which is sufficiently low to conclude that they measure distinguishable aspects of attachment to God representations. In the nonclinical group, the pattern of correlations was very similar to the pattern in the clinical group

### *Construct validity of the ATGR Attachment to God scales*

*Comparisons of same-method with mixed-method correlations.* Table 3 summarizes the results of the comparisons of same-method correlations with mixed-method correlations.



**Table 2.** Correlations between implicit and explicit God representation scales and implicit and explicit distress scales for the clinical and nonclinical group.

	ATGR			AGI					OQcl/GAF					OQ					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 Attachment to God-overall		.86**	.07	.56**	.50**	.84**	.75**	.02	.16	.02						.10	-.05	.02	.05
2 Safe Haven	.89**		.08	.57**	.59**	.98**	.35**	-.14	.13	.035						.15	-.05	-.02	-.00
3 Anxiety attachment (r)	.30**	.23*		-.31**	-.56**	.25*	.00	.32**	.14	-.04						.16	.18	.19	.06
4 Avoidant attachment (r)	.42**	.52**	-.16		.77**	.43**	.27*	.41**	-.02	-.003						-.11	-.13	-.19	-.07
5 Asking Support	.44**	.59**	-.48**	.68**		.39**	.18	-.07	-.04	-.051						.02	-.17	-.08	-.04
6 Receiving Support	.89**	.98**	.37**	.43**	.43**		.35**	-.15	.15	.054						.17	-.02	.00	.01
7 Secure Base	.83**	.51**	.19	.11	.18	.53**		.11	.09	-.047						.01	-.10	.02	.07
8 Percentage Secure Base	.00	-.07	.44**	.41**	-.22	-.03	-.08		-.04	-.044						-.12	-.04	-.08	-.03
9 AGI Anxiety (r)	.08	.05	-.12	.13	.06	.06	.10	.01		.35**									
10 AGI Avoidance (r)	.15	.17	-.17	.15	.15	.14	.10	-.09	.15										
11 OQcl-IR (r)	.25*	.34**	-.09	.37**	.38**	.29*	.08	.02	.01	.33**									
12 OQcl-SR (r)	.20	.26*	-.16	.22	.40**	.20	.13	-.12	-.04	.22	.64**								
13 OQcl-SD (r)	.14	.19	-.17	.13	.30**	.14	.12	-.10	-.01	.14	.52**	.67**							
14 OQcl-ASD (r)	.03	.08	-.20	.08	.26*	.04	.03	-.13	.00	.06	.32**	.48**	.88**						
15 GAF	.09	.04	-.06	-.04	.04	.04	.17	-.11	-.01	-.04	.13	.19	.31*	.39**					
16 OQ IR (r)	.33**	.33**	-.00	.28*	.21	.32**	.24*	-.04	.08	.30**	.44**	.22	.20	.17	.20		.49**	.67**	.47**
17 OQ SR (r)	.31**	.32**	-.10	.38**	.38**	.26*	.17	-.02	.10	.15	.13	.16	.11	.14	.19	.37**		.68**	.46**
18 OQ SD (r)	.27*	.20	-.10	.28*	.24*	.18	.28*	.09	.31**	.23*	.24*	.19	.45**	.45**	.33**	.54**	.47**		.85**
19 OQ ASD (r)	.13	.07	-.14	.23*	.21	.04	.15	.15	.20	.10	.12	.13	.43**	.50**	.35**	.34**	.40**	.88**	

Note: Left-below: Clinical group; Right upper: Nonclinical group; ATGR: Apperception Test God Representations; OQ & OQcl (clinician) scales; IR: Interpersonal Relations; SR: Social Role; SD: Symptom Distress; ASD: Anxiety and Somatic Distress; GAF: Global Assessment of Functioning. Bold correlations are significant at least at  $p = .05$  level. Scales with (r) are reversed.

\* =  $p \leq .05$

\*\* =  $p \leq .01$

**Bold** \*\* =  $p \leq .001$

**Table 3.** Comparisons of same-method with mixed-method correlations.

	Stronger correlations for same-method than for mixed-method			Significant differences			Significant correlations			
	k	%	p	k	%	k	For same-method correlations		For mixed-method correlations	
							k	%	k	%
Explicit vs implicit ATG × explicit distress (clinical group)	32/64	50%		5/64	8%	3/8	38%	6/16	38%	
Explicit vs implicit ATG × explicit distress (nonclinical group)	16/32 <sup>a</sup>	50%	ns	1/32	3%	4/8	50%	0/16	0%	
Implicit vs explicit ATG × implicit distress (clinical group)	50/64	78%	<.001	25/64	39%	9/40	23%	1/10	10%	
Implicit vs explicit ATG × implicit distress (clinical group)	25/32 <sup>a</sup>	78%		13/32	41%	5/20	25%	15/32	47%	
Implicit ATG × implicit vs explicit distress (clinical group)	50/80	63%		7/80	9%	9/40	23%	15/32	47%	
Explicit ATG × explicit vs implicit distress (clinical group)	23/40 <sup>a</sup>	58%	ns	4/40	10%	5/20	25%	6/16	38%	
Explicit ATG × explicit vs implicit distress (clinical group)	45/160	28%		1/160	1%	9/40	23%	1/10	10%	
	25/80 <sup>a</sup>	31%	ns	0/80	0%	5/20	25%	6/16	38%	
	31/40	78%	<.001	7/40	18%	4/8	50%	1/10	10%	

NOTE: ATG: Attachment to God; <sup>a</sup> row with the number of stronger associations with four independent ATGR scales (Asking Support, Receiving Support, Secure Base, and Percentage Secure Base), its percentage and the significance of this percentage; ns: not significant

**Table 4.** Numbers of stronger correlations of explicit than implicit God representation scales with explicit distress scales in the clinical group.

AGI scales	OQ scales								Total
	IR		SR		SD		ASD		
	k	Total	k	Total	k	Total	k	Total	
Anxiety <sup>a</sup>	1 <sup>8</sup>		1 <sup>8</sup>		4		3 <sup>6,7,8</sup>		9/16
Avoidance <sup>a</sup>	3 <sup>5,7,8</sup>		1 <sup>8</sup>		2 <sup>7,8</sup>		1 <sup>6</sup>		7/16
		4		2		6		4	16/32
Anxiety <sup>b</sup>	1 <sup>3</sup>		1 <sup>3</sup>		4		3 <sup>1,2,3</sup>		9/16
Avoidance <sup>b</sup>	2 <sup>3,4</sup>		1 <sup>3</sup>		2 <sup>2,3</sup>		2 <sup>2,3</sup>		7/16
		3		1		6		4	16/32

NOTE: AGI: Attachment to God Inventory; OQ: Outcome Questionnaire; <sup>a</sup> Comparisons with the four independent ATGR scales; <sup>b</sup> Comparisons with the four other ATGR scales; <sup>1</sup> Attachment to God-overall; <sup>2</sup> Safe Haven; <sup>3</sup> Anxious attachment to God; <sup>4</sup> Avoidant attachment to God; <sup>5</sup> Asking Support; <sup>6</sup> Receiving Support; <sup>7</sup> Secure Base; <sup>8</sup> Percentage Secure Base (ATGR Scales with smaller correlations with the OQ scale than the AGI scale); OQ-scales: IR: Interpersonal relationships; SR: Social Role; SD: Symptom distress; ASD: Anxiety and somatic distress)

**Table 5.** Numbers of stronger correlations of explicit than implicit God representation scales with explicit distress scales in the nonclinical group.

AGI scales	OQ scales								Total
	IR		SR		SD		ASD		
	k	Total	k	Total	k	Total	k	Total	
Anxiety <sup>a</sup>	4		4		4		4		16/16
Avoidance <sup>a</sup>	4		2 <sup>6,8</sup>		2 <sup>6,7</sup>		1 <sup>6</sup>		9/16
		8/8		6/8		6/8		5/8	25/32
Anxiety <sup>b</sup>	4		4		4		4		16/16
Avoidance <sup>b</sup>	4		2 <sup>1,2</sup>		2 <sup>1,2</sup>		1 <sup>2</sup>		9/16
		8/8		6/8		6/8		5/8	25/32

NOTE: AGI: Attachment to God Inventory; OQ: Outcome Questionnaire; <sup>a</sup> Comparisons with the four independent ATGR scales; <sup>b</sup> Comparisons with the four other ATGR scales; <sup>1</sup> Attachment to God-overall; <sup>2</sup> Safe Haven; <sup>3</sup> Anxious attachment to God; <sup>4</sup> Avoidant attachment to God; <sup>5</sup> Asking Support; <sup>6</sup> Receiving Support; <sup>7</sup> Secure Base; <sup>8</sup> Percentage Secure Base (ATGR Scales with smaller correlations with the OQ scale than the AGI scale); OQ-scales: IR: Interpersonal relationships; SR: Social role; SD: Symptom distress; ASD: Anxiety and somatic distress.

*Associations of explicit versus implicit attachment to God with explicit distress in the clinical group.* In the clinical group, against expectations, explicit distress measures were not more strongly associated with explicit than with implicit Attachment to God scales. Of the tested comparisons (only the associations with the four independent ATGR scales), only 50% (16/32) was stronger for the explicit Attachment to God scales (Table 4). Only for one of those comparisons, the difference between the correlations – with a stronger correlation for the explicit God representation scale – was significant. The explicit distress measures had as much significant correlations with the four independent implicit Attachment to God scales (38%) as with the explicit Attachment to God scales (see also Table 2).

**Table 6.** Numbers of stronger correlations of implicit than explicit God representation scales with implicit distress scales.

ATGR scales	Implicit distress scales										Total
	OQcl-IR		OQcl-SR		OQcl-SD		OQcl-ASD		GAF		
	k	Total	k	Total	k	Total	k	Total	k	Total	
Asking Support	2		2		2		2		2		10/10
Receiving Support	1 <sup>1</sup>		1 <sup>1</sup>		1 <sup>1</sup>		1 <sup>1</sup>		2		6/10
Secure Base	1 <sup>1</sup>		1 <sup>1</sup>		1 <sup>1</sup>		1 <sup>1</sup>		2		6/10
Percentage Secure Base	1 <sup>1</sup>		0		0		0		0		1/10
		5/8		4/8		4/8		4/8		6/8	23/40
ATG	0		1 <sup>1</sup>		1 <sup>1</sup>		1 <sup>1</sup>		2		5/10
Safe Haven	2		2		2		2		2		10/10
Anxious ATG	0		0		0		0		2		2/10
Avoidant ATG	2		2		1 <sup>1</sup>		2		2		9/10
		4/8		5/8		4/8		5/8		8/8	26/40

NOTE: ATGR: Apperception Test God Representations; OQ: Outcome Questionnaire; OQcl: clinician version; IR: Interpersonal relationships; SR: Social role; SD: Symptom distress; ASD: Anxiety and somatic distress); <sup>1</sup> AGI Anxiety; <sup>2</sup> AGI Avoidance (AGI Scales with smaller correlations with the OQcl scale than the ATGR scale).

*Associations of explicit versus implicit attachment to God with explicit distress in the nonclinical group.* In the nonclinical group, however, the explicit distress measures were, as expected, clearly more strongly associated with explicit than with implicit measures of attachment to God; a significantly higher proportion of comparisons (78%) with the four independent implicit Attachment to God scales was in favour of the explicit Attachment to God scales (see also Table 5), and 41% of the compared correlations indicated significantly stronger associations of explicit distress scales with explicit Attachment to God scales than with implicit Attachment to God scales.

Four out of eight correlations between the same-method measures versus none of the mixed-method correlations were significant. All correlations between the explicit AGI Anxiety scale and the explicit distress scales were stronger than the correlations between the implicit ATGR scales and these explicit distress scales. The AGI Avoidance scale correlated in only 56% of the comparisons more strongly than the ATGR scales with the explicit OQ scales, with regard to both the four independent ATGR scales and the four other ATGR scales.

*Associations of explicit versus implicit attachment to God with implicit distress in the clinical group.* Because for the nonclinical group we did not obtain implicit measures of distress, the remaining analyses only regard the clinical group. Against our expectations, the implicit distress measures did not correlate significantly more often (68%) stronger with the four independent implicit Attachment to God scales than with the explicit Attachment to God scales (see also Table 6). Ten percent of the compared correlations were significantly stronger for the four independent implicit than for the explicit Attachment to God scales, and more same-method correlations (25%) than mixed-method correlations (10%) were significant, both for the four independent ATGR scales and the other four scales. Three of the four independent implicit ATGR scales (not the PSB scale) correlated more strongly than the explicit AGI Anxiety scale with all implicit distress measures. In only 7 of the 20 comparisons, correlations between the four independent implicit ATGR scales and implicit distress

**Table 7.** Numbers of stronger correlations of implicit God representation scales with implicit than with explicit distress scales.

ATGR scales	Implicit distress scales										Total
	OQcl-IR		OQcl-SR		OQcl-SD		OQcl-ASD		GAF		
	k	Total	k	Total	k	Total	k	Total	k	Total	
Asking Support	4		4		3 <sup>1,3,4</sup>		3 <sup>1,3,4</sup>		0		14/20
Receiving Support	3 <sup>2,3,4</sup>		2 <sup>3,4</sup>		1 <sup>4</sup>		0		1 <sup>4</sup>		7/20
Secure Base	0		0		0		0		2 <sup>2,4</sup>		2/20
Percentage Secure Base	2 <sup>1,2</sup>		0		0		0		0		2/20
		9/16		6/16		4/16		3/16		3/16	25/80
ATG	1 <sup>4</sup>		1 <sup>4</sup>		1 <sup>4</sup>		0		0		3/20
Safe Haven	4		2 <sup>3,4</sup>		1 <sup>4</sup>		1 <sup>4</sup>		0		8/20
Anxious ATG	3 <sup>2,3,4</sup>		0		0		0		3 <sup>1,2,3,4</sup>		6/20
Avoidant ATG	3 <sup>1,3,4</sup>		0		0		0		0		3/20
		11/16		3/16		2/16		1/16		3/16	20/80

NOTE: ATGR: Apperception Test God Representations; ATG: Attachment to God; OQcl: Outcome Questionnaire clinician version; IR: Interpersonal relationships; SR: Social role; SD: Symptom distress; ASD: Anxiety and somatic distress; GAF: Global assessment of functioning scale; <sup>1</sup> OQ IR; <sup>2</sup> OQ SR; <sup>3</sup>OQ SD; <sup>4</sup>OQ ASD (Outcome Questionnaire scales with smaller correlations with the ATGR scale than the implicit distress scale)

**Table 8.** Numbers of stronger correlations of explicit God representation scales with explicit than with implicit distress scales.

AGI scales	Explicit distress scales								Total
	OQ-IR		OQ-SR		OQ-SD		OQ-ASD		
	k	Total	k	Total	k	Total	k	Total	
Anxiety	5		5		5		5		20/20
Avoidance	4 <sup>2,3,4,5</sup>		3 <sup>3,4,5</sup>		4 <sup>2,3,4,5</sup>		0		11/20
		9/10		8/10		9/10		5/10	31/40

NOTE: AGI: Attachment to God Inventory; OQ: Outcome Questionnaire; IR: Interpersonal relationships; SR = Social role; SD: Symptom distress; ASD: Anxiety and somatic distress; <sup>1</sup> OQcl IR; <sup>2</sup> OQcl SR; <sup>3</sup>OQcl SD; <sup>4</sup>OQcl ASD <sup>5</sup>GAF scale (implicit distress scales with smaller correlations with the explicit AGI scale than the OQ scale)

scales were stronger than the correlations of the explicit AGI Avoidance scale with the implicit distress measures.

*Associations of implicit attachment to God with explicit versus implicit distress in the clinical group.* The four independent implicit Attachment to God scales, against expectations, did not correlate more often (31%) stronger with implicit than with explicit distress scales (see also Table 7), and none of those compared correlations was significantly stronger for an implicit than for an explicit distress scale. Also, only about a quarter of the same-method correlations were significant (both of the four independent and the four other implicit ATGR scales), whereas 38% of the mixed-method correlation was significant. In line with our expectations and differing from the general pattern of correlations for these comparisons were the correlations of one ATGR scale with the implicit and explicit

**Table 9.** Partial correlations of the associations between implicit Attachment to God scales and distress scales.<sup>1</sup>

Implicit Attachment to God scales	Explicit OQ scales				Implicit OQ scales and GAF scale				
	IR (r)	SR (r)	SD (r)	ASD (r)	IR (r)	SR (r)	SD (r)	ASD (r)	GAF
Attachment to God—overall	<i>r</i> .31**	.29*	.24	.11	.21	.18	.13	.02	.10
	<i>p</i> .009	.012	.044	.378	.073	.135	.291	.839	.424
Safe Haven	<i>r</i> .29*	.30**	.17	.05	.30**	.24*	.17	.07	.05
	<i>p</i> .012	.010	.164	.668	.010	.045	.158	.538	.695
Anxious attachment to God (r)	<i>r</i> .06	-.07	-.03	-.11	-.04	-.14	-.15	-.19	-.07
	<i>p</i> .635	.555	.782	.368	.759	.256	.214	.106	.587
Avoidant attachment to God (r)	<i>r</i> .25*	.36**	.23	.20	.35**	.20	.11	.07	-.03
	<i>p</i> .035	.002	.053	.088	.003	.088	.342	.565	.806
Asking Support	<i>r</i> .17	.36**	.21	.19	.36**	.38**	.29*	.25**	.05
	<i>p</i> .148	.002	.082	.108	.002	.001	.014	.033	.703
Receiving Support	<i>r</i> .29*	.25*	.15	.02	.26*	.18	.13	.03	.05
	<i>p</i> .012	.038	.222	.886	.028	.133	.294	.812	.697
Secure Base	<i>r</i> .22	.15	.25*	.12	.05	.12	.11	.02	.18
	<i>p</i> .064	.209	.035	.298	.656	.326	.376	.864	.152
Percentage Secure Base	<i>r</i> -.01	-.00	.12	.16	-.05	-.11	-.09	-.13	-.12
	<i>p</i> .906	.980	.331	.177	.684	.371	.464	.286	.363

OQ: Outcome Questionnaire; GAF: Global Assessment of Functioning; IR: Interpersonal Relations; SR: Social Role; SD: Symptom Distress; ASD: Anxiety and Somatic Distress.

<sup>1</sup> Controlled for the correlations between the explicit attachment to God scales and the distress scales; *df* = 63 for all correlations; (r) = reversed scale.

\* = Significant at the .05 level;

\*\* = Significant at the .01 level

distress scales: Most correlations between the implicit ATGR scale Asking Support and the implicit distress scales were stronger than their correlations with the explicit distress scales.

*Associations of explicit attachment to God with explicit versus implicit distress in the clinical group.* The explicit Attachment to God scales, in line with our expectations, correlated significantly more often (78%) stronger with explicit than with implicit distress scales (see also Table 8), 18% of the compared correlations were significantly stronger for the explicit distress scales, and 50% of the correlations of explicit distress scales versus 10% of the implicit distress scales correlated significantly with explicit Attachment to God scales.

The AGI Anxiety scale correlated more strongly with all explicit OQ scales than with all five implicit distress scales. For AGI Avoidance, only 55% of the comparisons had stronger associations with explicit than with implicit distress scales.

#### *Significant correlations and partial correlations between Attachment to God scales and distress scales*

*Correlations of distress scales with explicit Attachment to God scales.* In the nonclinical group, AGI Anxiety correlated highly significantly with all four OQ scales, but AGI Avoidance did not correlate significantly with any of these scales. In the clinical group, AGI Anxiety correlated highly significantly with OQ scale Symptomatic Distress; AGI Avoidance correlated highly significantly with OQ scale Interpersonal Relationships and significantly with OQ scale Symptomatic Distress. Also in the clinical group, correlations between AGI Anxiety and the five implicit distress scales



were zero or very close to zero. AGI Avoidance correlated only (highly) significantly with OQcI scale Interpersonal Relationships. After controlling for the associations of the distress scales with the implicit Attachment to God scales in the clinical group, only the association of AGI Anxiety with OQ SD remained significant (see also Table 9).

*Correlations of distress scales with implicit Attachment to God scales.* None of the ATGR scales correlated significantly with the Global Assessment of Functioning (GAF) distress scale, and the ATGR scales PSB and Anxious attachment to God did not correlate significantly with any of the distress scales.

Of the 24 correlations between ATGR scales and explicit OQ scales, 15 were significant and 8 were of moderate strength ( $r > .30$ ). Of the correlations between ATGR scales and implicit OQcI scales, nine were significant and seven were of moderate strength.

After controlling all correlations between ATGR scales and the explicit distress scales for their associations with the explicit AGI scales, 9 of the 15 correlations with the explicit OQ scales remained significant, explaining 9%–13% in the variance of the various explicit distress scales that could not be explained by the AGI scales.

After controlling all correlations between ATGR scales and implicit distress scales for the associations between the distress scales and the two explicit AGI scales, eight significant correlations remained significant, explaining 9%–14% of unique variance in implicit distress scores that could not be explained by the AGI scales.

In summary, results of the comparisons of correlations and of the examination of partial correlations demonstrate that, in line with our expectations, (a) in the nonclinical group, most of the explicit Attachment to God scales were more strongly associated than the implicit Attachment to God scales with the explicit distress scales; (b) in the clinical group, the explicit AGI Anxiety scale correlated more strongly with all explicit distress scales than with all implicit distress scales; and (c) the implicit Attachment to God scale Asking Support correlated more strongly with most implicit than with most explicit distress scales, and most correlations between Asking Support and the implicit distress scales were stronger than the correlations between the two explicit God representation scales and the implicit distress scales. Three of the four independent Attachment to God scales correlated more strongly with the GAF scale than the explicit Attachment to God scales.

Results also demonstrate that, against our expectations, (a) associations between implicit and explicit attachment to God measures were not stronger in the nonclinical than in the clinical group; (b) in the clinical group, the four independent implicit Attachment to God scales were not significantly more often stronger associated with implicit measures of distress than with explicit Attachment to God scales; (c) in the clinical group, the explicit Attachment to God scales were not more strongly associated than the implicit Attachment to God scales with explicit distress measures (most implicit Attachment to God scales especially correlated more strongly than the explicit Attachment to God scales with the OQ SR scale, and more strongly than the explicit AGI Avoidance scale with the OQ IR scale), and also explained unique variance in OQ SR and OQ IR that could not be explained by the explicit Attachment to God scales; and (d) in the clinical group, the explicit AGI Avoidance scale did not correlate significantly more often than the ATGR scales with the explicit OQ scales.

### *Differences between clinical and nonclinical group in scores on ATGR scales*

The difference between mean scores of the nonclinical and the clinical group on the Attachment to God–overall scale was significant,  $t(143)=2.546$ ,  $p=.012$ , with the nonclinical group scoring

**Table 10.** The *t* tests of differences in mean scores or Mann–Whitney *U* tests on ATGR scales.

ATGR scales	Clinical group		Nonclinical group		<i>t</i>	<i>df</i>	<i>U</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Attachment to God—overall	1.64	0.38	1.79	0.31	<b>2.546*</b>	143		.012
Safe Haven	3.00	1.04	3.37	0.98			<b>2765.5*</b>	.030
Asking Support	1.41	0.22	1.46	0.24	1.201	143		.232
Receiving Support	1.80	0.46	1.95	0.43			<b>2108*</b>	.040
Anxious Attachment to God	4.31	3.88	3.70	2.91			2765.5	.578
Avoidant Attachment to God	9.54	4.35	8.10	4.00	<b>-2.076*</b>	143		.040
Secure Base	1.76	0.38	1.85	0.30	1.476	143		.142
Percentage Secure Base	52.97	10.91	56.24	10.67	1.823	143		.070

ATGR: Apperception Test God Representations; *SD*: standard deviation.

Associations of potentially confounding variables with ATGR Attachment to God scales.

higher on this scale, indicating a stronger secure attachment to God. On the Safe Haven subscale, the scores between the nonclinical and the clinical group also differed significantly,  $U=2080$ ,  $p=.030$ , with higher scores for the nonclinical group. From the subscales on which the scores of the Safe Haven scale are based, significant differences between nonclinical and clinical group showed up on Receiving Support,  $U=2108$ ,  $p=.040$  (with higher scores for the nonclinical group) and on Avoidant attachment to God,  $t(143)=-2.067$ ,  $p=.040$  (with higher scores for the clinical group). No significant differences between clinical and nonclinical group occurred on the Safe Haven subscales Anxious attachment to God and Asking Support, and on Secure Base and PSB (see also Table 10).

*Associations of potentially confounding variables with ATGR Attachment to God scales.* Because the clinical group differed from the nonclinical group on the potentially confounding variables sex, age, religious salience, religious denomination and level of education, we examined if these variables were associated with the ATGR Attachment to God scores. None of them had a significant effect on the Attachment to God scales except church denomination, which was significantly associated with the scale Attachment to God—overall,  $F(2, 142)=3.3$ ,  $p=.040$ . Planned contrasts showed that the mean score of orthodox participants on Attachment to God—overall (1.60) was significantly lower than the mean score of Evangelical/Baptistic participants (1.71),  $t(142)=-2.568$ ,  $p=.011$ . Within the patient group, there was no significant association between church denomination and Attachment to God—overall,  $F(2, 71)=0.569$ ,  $p=.569$ . Within the nonclinical group, this association was highly significant,  $F(2, 68)=6.002$ ,  $p=.004$ , with the mean score of Orthodox participants (1.51) significantly lower than the mean scores of Mainstream (1.83) and Evangelical/Baptistic (1.87) participants, respectively,  $t(68)=-3.241$ ,  $p=.002$ , and  $t(68)=-3.085$ ,  $p=.003$ . Although often analyses of covariance (ANCOVAs) are conducted to statistically control for a confounding variable, the also significant difference between the clinical and the nonclinical group on church denomination makes it, according to Miller and Chapman (2001), impossible to statistically disentangle associations of church denomination and of psychopathology with the ATGR scales. Therefore, the lower scores of the nonclinical group on Attachment to God—overall cannot merely be attributed to their clinical status.

We assume that the significant differences between the nonclinical and clinical group on ATGR scales Safe Haven, Receiving Support and Avoidant attachment to God can be attributed to the difference in mental health status.

*Associations between implicit and explicit Attachment to God scales.* Against our expectation, the correlations between implicit and explicit Attachment to God scales were not stronger in the nonclinical group (average of correlations:  $r=.03$ ) than in the clinical group (average of correlations:  $r=.06$ ), see also Table 2.

## Discussion

The aim of this study was to validate the Attachment to God scales of the ATGR by examining if associations between same-method measures of attachment to God and distress (implicit with implicit, and explicit with explicit) were stronger than associations between mixed-method measures of attachment to God and distress (explicit with implicit). For the clinical group, results confirmed the implicitness of the ATGR scales by showing that implicit measures of distress were more strongly associated with the implicit ATGR scales than with explicit measures of attachment to God.

### Reliability

A prerequisite for establishing validity, both the interrater reliability and the internal consistency of the Attachment to God scale were good. Moreover, the various ATGR subscales predominantly showed only weak intercorrelations, indicating that they measure distinct aspects of attachment to God.

### Validity: Confirmation of the ATGR as implicit measure

The implicitness of the Attachment to God scales of the ATGR is undergirded by the partial confirmation of our expectation that in the clinical group, implicit attachment to God measures were more strongly associated with implicit measures of distress than explicit attachment to God measures: The stronger associations of the implicit attachment to God measures with those implicit distress measures that specifically focus on interpersonal functioning, namely, the IR and SR scales, could be interpreted as support for the validity of the ATGR measures.

Our expectation that implicit and explicit attachment to God measures would be correlated more strongly with each other in the nonclinical as opposed to the clinical group was not confirmed. Instead, we found that implicit attachment to God was associated more strongly with explicit measures in the clinical group. One potential explanation for the stronger associations in the clinical group between implicit and explicit attachment to God measures, and also for the stronger associations of implicit than explicit Attachment to God measures with explicit distress measures in this group, might be that in the clinical group insecure implicit attachment to God representations invade the conscious experiencing of the relationship with God and of negative affects to a much greater extent than in the nonclinical group. Bateman and Fonagy (2010) describe how the process of mentalization, by which we implicitly and explicitly interpret the actions of ourselves and others, may be disturbed for patients with most mental disorders. They suggest that the move from controlled to automatic mentalizing, or even eventually to nonmentalizing modes, is determined by attachment patterns. Disruptions of early attachment processes might impair the capacity for mentalizing. Patients may be thrown back to 'pre-mentalistic modes' that 'destroy the

coherence of self-experience that the narrative provided by normal mentalization generates' (Bateman & Fonagy, 2008, p. 183). In other words, implicit, insecure attachment to God representations distorts the potentially available more explicit secure Attachment to God that could otherwise support the person.

Our results might imply that, especially in clinical groups, explicit measures of distress, to a greater extent than generally assumed, may be relevant indicators of implicit psychological processes, because there is more overlap between implicit and explicit measures. Another explanation might be that – vice versa – depression, stress or anxiety in the clinical group might have triggered negative attachment to God representations which in turn might have increased the association between explicit distress and implicit attachment to God representations.

### *The validity of specific ATGR scales*

Not all ATGR were associated equally strongly with implicit measures of distress, implying that some aspects of implicit attachment to God representations might not be assessed validly with the ATGR. The Safe Haven subscales Asking Support and Avoidant attachment to God were associated most strongly, and the Secure Base and PSB scales most weakly, with the implicit distress scales. Most strongly related to clinicians' estimations of patients' interpersonal and social role distress was the ATGR Safe Haven subscale Asking Support. In line with these findings, significant differences in scores between the clinical and the nonclinical group were found only for the ATGR scales Safe Haven and its subscales Receiving Support and Avoidant attachment to God, with the scores of the clinical group indicating significantly more insecure attachment to God representations. These findings indicate that the ATGR predominantly seems to measure the Safe Haven function of attachment to God, and especially those aspects that are related to Avoidant attachment to God. Evidence for the validity of the two Secure Base scales and of the Anxious attachment to God scale is much weaker.

### *The association between implicit avoidant attachment to God and implicit distress*

There are several potential explanations for the association between (implicit) avoidant attachment to God and implicit distress. First, avoidant attachment to God may render patients more susceptible to relational problems, which are observed by their clinicians, yet not reported in the self-report measures by the patients themselves. Put another way, avoidant patients seemed to underestimate their relational problems and distress. This is in line with Mikulincer (1998), who found that avoidantly attached persons, when confronted with imagined hostility of their partners, reported low levels of anger, lacked awareness of physiological signs of anger and demonstrated escapist responses.

Second, the avoidant attachment to God of patients, characterised by not asking for support from God, may be related to a similar interpersonal attitude of not seeking social support. This may have led to more distress. This explanation is in line with the well-known correspondence hypothesis in attachment theory–inspired religious research (Granqvist, 1998; Hall et al., 2009; Kirkpatrick & Shaver, 1990). Moreover, there is evidence that persons with insecure attachment styles engage support networks differently from persons with a secure attachment style (Anders & Tucker, 2000; Moreira et al., 2003; Ognibene & Collins, 1998; Priel & Shamai, 1995). In particular, patients with an avoidant style may be less likely to seek professional help by self-concealment (Vogel & Wei, 2005). Of course, the inverse relationship cannot be ruled out: the distress that accompanies psychiatric problems enhances avoidant tendencies and thus decreases the tendency to seek support from God.

*The validity of the ATGR Avoidant attachment to God scale compared to the validity of the AGI Avoidance scale.* AGI Avoidance might be a less valid measure of avoidant attachment to God than the ATGR Avoidant attachment to God scale, because the explicit AGI Avoidance scale was hardly associated with the implicit Avoidance to God scale. Moreover, the ATGR Avoidant attachment to God explained unique variance in distress related to interpersonal and social functioning that could not be explained by AGI Avoidance. Thus, we are optimistic that this scale may overcome the often signalled problems with explicit avoidant Attachment to God scales: the results with this explicit measure are often similar to results with measures of secure attachment, because patients with avoidant and secure attachment share a positive model of self (Beck & McDonald, 2004; Bretherton & Munholland, 2008; Dozier & Kobak, 1992; Eurelings-Bontekoe et al., 2003).

### *Clinical implications*

For patients who have expressed that they would like to address and integrate religiosity in their treatment, it might be valuable to assess their implicit attachment to God with the ATGR, rather than to use a self-report measure assessing avoidant attachment to God. This might prevent clinicians from not recognizing avoidant attachment to God. Undetected avoidant attachment to God may obstruct therapy aimed at strengthening existential identity, which may be an important aspect of treatment in religiously based mental institutions (Jong & Schaap-Jonker, 2016). Mobilizing hope in demoralized patients might be a key element in every treatment (Frank & Frank, 1993) and research underpins the importance of spirituality and meaning of life for patients with psychiatric disorders (Huguelet et al., 2016; Mohr et al., 2012). In case of avoidant attachment to God, the ATGR stories the patient told (and in which he or she did not let the characters turn to God for help or comfort) could be used as an entry to talk about patient's tendency to rely on him- or herself, and to encourage the patient to explore his or her expectations about God's availability, willingness and power to help, to explore parallel processes with interpersonal attachment, and to encourage and support the patient to share his or her feelings with God. More detailed suggestions for how to deal with insecure attachment to God styles are given by Reinert, Edwards, and Hendrix (2009).

### *Limitations and future research*

A first limitation of this study is that results are based on a specific religious group: Dutch Christians from predominantly Protestant denominations. In fact, the cards of the ATGR (not the scoring system) are also specifically designed for this group. Findings, therefore, cannot be generalized to adherents of other religions or Christian denominations.

A second limitation of this study, hindering the comparisons of ATGR scores between the clinical and nonclinical group, is that the nonclinical group significantly differed from the patient group on potentially confounding biographical factors. Although most of these variables were not significantly associated with the scores on the ATGR scales, church denomination was significantly associated with the Attachment to God–overall scale, an effect that was not found within the clinical group, but only within the nonclinical group. Therefore, further research into the influence of church denomination on this scale is needed.

A third limitation is the observational design of the study that does not permit conclusions about causal directions; this means that our results cannot undisputedly confirm the theoretically assumed effect of Attachment to God on distress, and it must be noted that the inverse might also be the case: distress might have caused or triggered more insecure attachment to God representations.

A fourth limitation of this study is that most expectations could only be examined in the clinical group, because in the nonclinical group, we had no measures for implicit distress. Actually, some

may find it even disputable to classify the OQ-clinician measure that we assessed in the clinical group as a purely implicit measure. However, because we asked clinicians to base their ratings on intuitive estimations instead of what they actually heard from their patients, and because patients could not deliberately influence the score, in our opinion, these indirect measures qualify as measuring implicit aspects of their functioning. In terms of the Yohari-window for modelling interpersonal awareness, it focuses on information that is unknown to the self, but known to others (Luft & Ingham, 1955).

Further research is needed to examine differences in implicit and explicit distress between persons with and without personality pathology. Moreover, implicit and explicit scores of patients on Attachment to God scales before and after treatment should be measured and compared, to see if and how differences occur in changed scores on these implicit and explicit measures.

Besides examining associations of attachment to God representations of patients with social and relational distress, it is recommended to use measures of religious, spiritual or existential well-being. The measure should be adapted for other religions, and extended validation research should be conducted.

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## Supplemental material

Supplemental material for this article is available online.

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