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The role of intelligence in the relationship between attachment styles and cognitive schemas in psychotherapists

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ABSTRACT

The present study aims to analyze the relationships between attachment styles (avoidant and anxious) and cognitive schemas and also the role of intelligence in this relationship. The participants of the study were 62 psychologists or future psychologists. Of these, 12 were psychology students, 54 were autonomous psychologists, and two were experimented psychologists. Four of the participants were men, and 68 were women. The instruments used were The Attachment Style Questionnaire, Young Cognitive Schema Questionnaire - Short Form, and Analogical Transfer Test (CAS++) for the measurement of intelligence. The results showed that avoidant and anxious attachment styles are positively associated with the development of maladaptive cognitive schemas in all the five domains. Intelligence does not moderate the relationship between attachment styles and cognitive schemas. In the personal development of psychologists and psychotherapists, it is necessary to augment maladaptive cognitive schemas through specific psychoeducational programs.

Keywords: *attachment styles, cognitive schemas, psychologists, intelligence*

1. INTRODUCTION

The attachment style has a significant impact on the lives of individuals and is an essential factor in the development of the human personality. Bowlby (1969) defined attachment as a persistent form of connection that occurs between human beings. The early connections between the child and the mother (or the caregiver) will impact him throughout his life. Also, the attachment facilitates the baby's closeness to the mother, increasing her chances of survival.

Attachment style was most often considered to be a stable, immutable element, so most studies have approached it based on its trait characteristics (Fraley, 2002; Simpson et al., 2007; Gallith, Hart, Noftle, & Stockdale, 2009). There are, however, approaches that interpret

attachment style as a subject of change, possibly as a result of major life events that may result in remodeling and reconfiguration (Cozzarelli et al., 2003; Feeney & Noller, 1992) or as a result of exposure to certain contextual factors (Davila et al., 1997).

The first studies based on attachment theory (Ainsworth et al., 1978) identified three patterns of attachment of the child to the mother: secure, anxious, and avoidant. Subsequently, specialists have shown that attachment styles can be more accurately conceptualized as regions on a two-dimensional continuum (Brennan et al., 1998; Fraley & Waller, 1998; Bartholomew & Horowitz, 1991). The two dimensions were called the self model (positive vs. negative) and the model of others (positive vs. negative), and the two related types of attachment were called anxiety and avoidance (Brennan et al., 1998). The first dimension, the pattern of self or anxiety, reflects the fear of being rejected or abandoned, while the second dimension, the pattern of others or avoidance, reflects the degree to which one person feels uncomfortable when is dependent or is too close to others.

Individual differences in the organization of behavior and expectations regarding subsequent relationships are assumed to be closely related to the behavior of the attachment figure in relation to the individual characteristics of the child. Thus, attachment patterns are broadly characterized as safe and unsafe (Ainsworth, Blehar, Waters, & Wall, 1978; Bretherton, 1985).

Safe pattern is present when the child seeks and receives protection, reassurance, and comfort in stressful situations. Due to the support and availability of significant adults, the child is confident in exploring the surrounding world. Unsafe patterns (avoiding, ambivalent, disorganized) occur when the child is rejected, the parents' behaviors are inconsistent, threatened by significant adults. The child becomes anxious about the responses received from the adult, and to reduce this anxiety, his behavior will tend to become complementary to that of the adult.

According to attachment theory, early parent-child relationships are prototypes of later child relationships, especially romantic ones. Beyond personal relationships, the parent-child relationship model strongly impacts family organization patterns and plays an important role in the intergenerational transmission of family models.

The working models of the attachment relationships are cognitive-affective constructs that develop during the interactions between the child and the parent, the child managing to extract from these interactions and from his own expectations a series of postulates regarding the roles within the family and how close relationships operate in daily life and in stressful situations.

Ainsworth (1991) emphasized the function of the attachment behavioral system in adult life, suggesting that a secure attachment relationship will facilitate the functioning and competence of the individual also outside the relationship. The difference between adult-child attachment and adult-adult attachment is that in adults, attachment behavioral systems are reciprocal. The roles of attachment and attachment person can quickly change between the two participants in the relationship. Also, in adults, attachment also implies additional functions, such as sexual intercourse, presence, competence, sharing of experiences (Ainsworth, 1985).

Over time, the measurement and evaluation of the attachment was carried out either in the natural environment or in laboratory situations. In children, the behavior derived from the exposure to certain situations constituted the essential benchmark for evaluating the type of attachment. Measuring adult attachment, on the other hand, is a more time-consuming task, because of reciprocity and role-sharing. For this reason, specialists have focused on measuring attachment at the individual level and not at the couple level, using particular interviews and questionnaires based on language and perceptions, and less behavioral observations (Hazan & Shaver, 1994).

The numerous different aspects of attachment theory and adult interpersonal relationships have led to the development of different assessment tools, some trying to evaluate attachment patterns or styles, others measuring behaviors related to different attachment styles.

The instrument developed by Feeney, Noller, and Hanrahan (1994) addresses the measurement of attachment according to the two dimensions: the vision on the self and the vision on the others, dimensions that vary from negative to positive. Thus, attachment can take four forms: safe (positive towards self, positive towards others), worried (negative towards self, positive towards others, avoiding (positive towards self, negative towards others) and anxious (negative towards others) self, negative towards others).

Attachment and cognitive schemas

The influence of the attachment style with which the individual operates significantly influences the formation of cognitive schemas. A person with a secure attachment style will have a lower chance of presenting psychopathological symptoms (Muris et al., 2000; Muller et al., 2001). The child raised and cared for in a comfortable environment, where his needs are met, in which he is surrounded by love and warmth, will develop a kind of secure attachment. Beyond the need for a home, food, financial security, education, the child needs to build strong emotional connections with parents or caregivers. These connections are the basis of other emotional cues that are generalized starting from the interactions with the parents.

The person with a secure attachment style will develop a correct and healthy conception of self, will have confidence in himself and others because he has received warm and

consistent responses from his parents. This confidence built up from a very early childhood, will allow the individual to establish and maintain significant interpersonal relationships with friends and romantic partners. The belief of the person that he or she is loved and valued has as a starting point a secure attachment, leading to the development of self-esteem and giving him the strength to face different life situations. In this situation, the person is unlikely to adopt self-defense to protect their self-esteem.

In the presence of a secure attachment, the ideal of life and the expectations of the person are more realistic. As long as he knows exactly what his place and role is in the world and feels respected, the person will increase his superiority horizontally, soundly, and not vertically, viciously (Ansbacher et al., 1956, cited in Stapel, 2008). The individual will not manifest his desire for superiority in relation to individuals with insecure attachment. When the attachment is secure, the person will not need to come up with an unrealistic ideal and will endeavor to avoid overcompensation on his way to perfection. For people with secure attachment, the distance between self-conception and ideal self is minimal because they have already received encouragement and acceptance from attachment figures. It was not necessary in childhood to attract the attention of adults and their unmet needs nor to compensate in some way the needs not covered by adults (Stapel, 2008).

If we understand the schemas as information filters that contribute to creating a certain experience of reality, this being a deformed, therefore false experience, we can expect the attachment patterns to be different due to the frequency of certain maladaptive schemas.

These schemas are in line with the internal working models of self and others that are particularly applicable to that pattern. Thus, people who have secure attachment patterns manifest positive internal work patterns of self and others. This theory suggests that they were people who in their childhood were able to maintain their basic strategic responses because they received consistent and appropriate responses from their significant others, especially mothers (Thompson, 1999).). Based on this early experience, they develop a positive self-image and because they were not put in the situation of having to develop secondary reaction strategies, we can assume that the frequency of early maladaptive schemas will be at the lowest levels.

In the context of the analysis of the interaction of attachments and cognitive schemas in therapy, they can also be discussed from the perspective of the vision on others. Thus, therapists with a negative vision on others are expected to orient themselves towards punishing behaviors of client attachment strategies that elicit their own strategies. In any case, a major difference between anxious therapists and those with avoidant behaviors is that the anxious therapists are more likely to be aware of their mistakes, while avoidant therapists are predisposed to evaluate the behaviors of others as problematic. Anxious therapists may work better with clients with a preocupied type of attachment, but it is expected that they will be tempted to punish the shortcomings of clients who are struggling to meet their needs.

Regarding anxious therapists, Coon (2007) outlines that they have high chances of difficulty in trusting, low self-esteem, and lack of self-confidence. Therefore, they can overcompensate their fears of not being good enough. On the other hand, avoidant therapists can deal with the intensity of emotions specific to the concerned clients and are inclined to encourage the avoidance of the emotional connection; in the case of dependent persons, for example, this type of behavior from the therapists can have a strong negative impact, since the dependence already implies the use of some substances for the affective regulation. Coon (2007) suggests that avoidant therapists may be more effective in relation to clients who show low emotional intent and expressiveness and that the positive self-model supports the denial of the need for closeness in relationships.

In contrast, therapists with a predominantly positive vision on others are more oriented toward uncovering inadequacies in themselves and putting more effort into establishing a good therapeutic relationship. As Coon (2007) suggests, preocupied therapists may question their ability to form a bond with their clients and, therefore, reports show a weaker therapeutic alliance in their case. Because preocupied therapists tend to make more efforts to establish a relationship, they may be more likely to connect with anxious and dependent clients who are sensitive to aspects of rejection.

Ekamparam (2008) points out that, if we refer to the self-view, therapists with a negative self-view tend to struggle to manage their own emotional responses, because of their sensitivity to abandonment and rejection, and are weakly connected to the needs of their clients, in particular to the needs of those clients who experience severe negative affect. The author draws attention to the fact that it is important that the therapists do not omit the factors that prevent or favor the attachment, especially in the case of dependent persons, who often abandon therapy in the early stages. If therapists become aware of the dynamics of attachment, they are more likely to support dependent clients to become involved and form more stable alliances within the therapy. Ekamparam (2008) considers that the tendency of clients is to start therapy without being aware of their feelings and how they contribute to problems in relationships. For this reason, it is advisable for therapists to be aware of their own attachment patterns and to understand their own countertransference behaviors so as to provide clients with a healing experience and adaptive ways to manage their emotions.

As Stefanović and Nedeljković (2012) argue, the preocupied attachment pattern of an individual is specific to negative internal working models of the self and to positive internal working models of the others. It seems that the selective availability of significant persons, such as mothers in particular, leaves its mark on the formation of a negative image of the self and leads to the development of strategies for attracting attention and affection for those who are positive and appreciated. Given these, it is expected that the people who manifest these patterns have already formed beliefs about poor autonomy.

Further, the pattern of avoidance is characterized by positive internal working models of the self and negative internal working models of the others. Within this pattern, strategies appear to be based only on one's own, as a result of the mistrust built up in the early childhood towards the significant people who were constantly unavailable. For these reasons, it is possible to form beliefs that pertain to the areas of disconnection and rejection, but also to the field of overvigilance.

Further, disorganized attachment patterns are characterized by both internal negative working patterns on oneself and others. People with such attachment patterns may have experienced the feeling of fear in childhood, in certain situations, without being able to find an appropriate coping strategy. Lyons-Ruth and Jacobvitz (1999) believe that individuals who manifest this pattern of attachment, in childhood, perceived significant others around them as either scared or frightened. Regardless of the situation, the result was a paradox that they want to establish close contact with others, but at the same time, very close contact with others frightens them. As a consequence, it is expected that dimensions such as communication, autonomy, boundaries, etc., in other words, beliefs in all areas, will be affected.

An analysis of available empirical evidence confirms the dysfunctionality at the schema level. Thus, Freeman et al. (2002) show that a high frequency of maladaptive schemas is an important predictor of dysfunctional and problematic interpersonal relationships and a lower adaptability. Rittenmeyer (1997) argues that a high frequency of symbiotic schemas and unrealistic standards is a good predictor of emotional exhaustion.

Significant correlations were also found between early maladaptive patterns and personality disorders (Schmidt et al., 1995), but also between early maladaptive patterns and eating disorders (Meyer & Gillings, 2004). Schmidt et al. (1995) also explored the connections between stress, anxiety, depression, dimensions of self-disclosure and the vulnerability component of depression. They found that dependance / incompetence patterns are significant predictors of depression, while the pattern of vulnerability and emotional inhibition are significant predictors of anxiety.

Another study of the prevalence of early maladaptive schemes (Končar, Zotović, & Hautekeete, 2006) investigated the possibility to differentiate between children who lived in bombed cities and those who lived without being exposed to bombing. As expected, it turned out that the studied patterns are more common in children living in bombed cities.

Research on maladaptive schemas and patterns of attachment is rare and most often performed on clinical samples (Baker & Beech, 2004; Mason, Platts, & Tyson, 2005). The results of the studies show that there are indeed differences between the patterns of attachment in terms of the frequency of maladaptive schemas. Thus, within the pattern of disorganized attachment and preocupied attachment wass found the highest frequency of all maladaptive schemas.

The studies that were performed on groups of subjects from the non-clinical samples show significant differences regarding the frequency of most maladaptive schemas, the preocupied attachment pattern containing the most schemas, according to the study on students from the University of Banja Luka and Zagreb (Krnetic, Mirovic, & Štefanec, 2011). Another study conducted on students from the University of Novi Sad (Mihić, Zotović, & Petrović, 2008) confirms that attachment patterns are significantly different in terms of the frequency of early maladaptive schemas and that the highest score of dysfunctional childhood patterns it is found in people with an anxious attachment style, with the mention that a limitation of the study lies in the fact that the number of respondents with a disorganized attachment pattern was a very small one.

In their study on attachment patterns from the perspective of maladaptive schemas, Stefanović and Nedeljković (2012) drew important conclusions. First of all, as a general conclusion, the research groups formed according to the attachment styles are significantly different in the frequency of the maladaptive schemas. Further, dysfunctional schemas are more common in groups with unsecured attachment and, in particular, in groups of participants with disorganized attachment patterns. According to the study, it appears that these groups formed on the basis of the types of attachment are different also in the areas of dysfunctionality. Thus, it is confirmed that most maladaptive domains are found within the disorganized attachment pattern and that these domains are quite difficult to harmonize. In addition, as expected, the category of autonomy and performance is most often found, in the form of specific maladaptive schemas, in the context of the preocupied attachment style. The secure attachment styles confirm the hypothesis that the frequency of the maladaptive domains is the lowest. The hypothesis that was not confirmed in this research is the one that argued that there is a correlation between the areas of rejection, abandonment, hypervigilance and the pattern of avoidant

attachment. The authors of the study emphasize that the results would be more conclusive if the study were longitudinal. Another limitation highlighted by these is the fact that the subjects completed the questionnaires in a rather short time, which may raise the question whether the variables examined and their correlation can be a reflection of the mood of the moment, especially since the subjects were at large young women.

Taking into account the data presented, we establish the first hypothesis of the present study:

H1. Attachment styles are associated with early cognitive schemas in all five domains.

H1a. The avoidant attachment style is positively associated with the development of the five domains cognitive schemas.

H1b. The anxious attachment style is positively associated with the development of five domains cognitive schemas.

The role of intelligence in the relationship between attachment styles and cognitive schemas.

Specialists in cognitive psychology have endeavored to demonstrate that early experiences can be integrated into cognitive therapy of personality disorders, which has led to sustained efforts to associate cognitive schemas with developmental theories. For example, Piaget's descriptions of the differences between preoperative and concrete operational intelligence have been associated with cognitive distortions and irrational beliefs described by Beck. Preoperative thinking is marked by dichotomous thoughts (all or nothing), moral realism (with emphasis on consequences rather than intentions), egocentric causality (where the self is seen as a cause of independent effects), and imminent justice (where for bad people, bad things will happen). Most automatic thoughts and depressive cognitive distortions are structurally preoperative. All-or-nothing thinking, generalization, labeling, and perfectionism are characterized by dichotomous thinking patterns.

The process that differentiates the preoperative thinking from the concrete operative thinking consists in the development of the decentralization. Decentralization implies the ability of the individual to distance himself from the situation, to coordinate two perspectives or dimensions and to imagine possible changes or transformations. By contrast, centering is ficused on one perspective or dimension, excluding all the others, being an immediate, personal, and egocentric process. Centering is present in cognitive distortions, such as thoughts reading, negative filtering, over-generalization, labeling, dichotomous thinking, and in the absence of the ability to recognize the variability of certain situations. The negative labeling that is characterized by the inability to recognize the variability of one's own self is attributed to the centering. Thus, the early personal schemas are formed at the preoperative level and are therefore marked by the rigid structure of the preoperative thinking, being maintained until the adult period.

The preservation of early cognitive schemas is maintained by three factors. The first is represented by the schematic processing that ensures selective attention and the updating of the information consistent with the schema. The second is the pre-operative structure that seems to be "impregnated" in the content of the schema. The third factor is the pre-operative structure of the schema that seems to function as a structural fixation, explained by the fact that the early structures remain unchanged while the rest of the structures develop. Once the content or affect of the scheme is accessed - through situational stressors, biochemical imbalance or cognitive distortions - the preoperative structure will also be accessed (Leahy, 2017).

The definition of intelligence on which a consensus has been reached emphasizes that it refers to the ability of the individual to adapt effectively to the environment (Sternberg, 2012). One of the essential aspects of intelligence is the analogical transfer. It consists in making the new information familiar by connecting it with the previous information, in making the familiar become unfamiliar being viewed from a new perspective. Analogical transfer is a fundamental component of human intelligence and is dependent on the ability to reason by analogy. Analogical transfer is used to construct new scientific models, to design experiments, to develop arguments, and to interpret literary metaphors (Miller, 1979).

The basic idea of analogical transfer is to use knowledge from one situation to another through the mapping process - finding a set of one-to-one (often incomplete) correspondences between aspects of a body of knowledge and aspects of another. The mechanism underlying the analogical transfer is the analogical reasoning that usually involves comparing two concepts at the same level of abstraction (for example, comparing the heart to a pump). Furthermore, mapping may be involved in inducing schemas from certain examples (for example, learning the abstract meaning of the pump by comparing the heart to a water pump). The close relationship between the processing of concrete analogous elements and the general schemas is supported by numerous empirical studies (Winston, 1980).

The structure of the analogy is dictated by its function. In analogical problem solving, both the problem and the solution are already known. The individual notes the correspondence between the known problem and the unsolved problem, and on this basis derives a possible solution. In general terms, the function of analogy is to derive a new solution, hypothesis or prediction starting from the initial partial mapping between two analogous elements and then extending the mapping by creating additional knowledge about the analogous element which was initially less understood. In this way, each analogous element is

conceptually broken down into two parts: the one that provides the basis of the initial mapping and the one that constitutes the "conclusion". Hesse (1966) emphasized that analogy involves two distinct types of relationships: a horizontal one, a mapping of relations between aspects of two analogous elements and a vertical one, between the parts of the same analogous element. The vertical relationship takes place practically between the relevant antecedent conditions and the consequences related to them. In many situations, including in the analogy between problems, vertical relationships will correspond to the causal relationships in the person's mental model for that situation (Winston, 1980).

Certain aspects of an initial problem will be addressed as sufficient conditions for finding a particular solution. In general, the mapping process involves looking for new alternatives to solve a problem. This type of reasoning resembles the interpretation of reality by analogy with previous experiences for which the person already has solutions and ways of solving them.

Over time, intelligence has been associated with well-being and mental health. Conversely, people who report higher levels of well-being consider themselves to have higher cognitive abilities (Campbell, Converse, & Rogers, 1976; Diener & Fujita, 1995). However, empirical studies have failed to show that there is a link between intelligence measured by standardized instruments and well-being or mental health (Wirthwein & Rost, 2011). Moreover, abstract thinking skills as well as other types of fluid intelligence decrease with age, while well-being seems to increase (Salthouse, 2004).

Studies on the role of intelligence in the relationship between attachment and cognitive schemas are mainly focused on emotional intelligence, without referring to cognitive intelligence. In our research we intend to test whether cognitive intelligence, namely analogical transfer, moderates the relationship between attachment styles and early cognitive schemas.

Although in the literature there are no mentioned associations between intelligence level and early cognitive schemas, our intention is to verify the role of intelligence in the relationship between attachment styles and the five domains of cognitive schemas. We thus establish the second hypothesis of the present study:

H2. Intelligence moderates the relationship between attachment styles and early cognitive schemas.

H2a. Intelligence moderates the relationship between avoidant attachment style and the five domains of cognitive schemas.

H2b. Intelligence moderates the relationship between anxious attachment style and the five domains of cognitive schemas.

2. METHODOLOGY

Participants and procedure

The participants of the study were 62 persons aged between 23 and 51 years, M = 34.38, SD = 7.18. Of these, 12 were psychology students, 54 were autonomous psychologists, and two were experimented psychologists. Four of the participants were men, and 68 were women. As for marital status, 23 were unmarried, 19 were in a relationship, and 30 were married.

The participants are psychologists or future psychologists who specialize in cognitive-behavioral psychotherapy. They were contacted at one of the meetings dedicated to personal development training. They were briefly explained the purpose of the study and were invited to participate in the research. Of the 84 trainees contacted, only 62 agreed to participate (73.8%). The questionnaires were administred in pencil-paper version, the average completion time being 40 minutes. The collected data were organized using IBM.SPSS 24 (IBM Corp, 2016), which was also used for hypotheses testing, together with Medmod module of JAMOVI (The Jamovi Project, 2019).

Instruments

Attachment styles. Attachment Style Questionnaire, ASQ (Feeney, Noller, & Hanrahan, 1994) was used to evaluate attachment styles. The instrument comprises 40 items and measures two attachment styles, respectively avoidant and anxious. The answers are given on a six-step Likert scale, where 1 - total disagreement and 6 - total agreement. Example of item: "I trust that others will be with me when I need to." When analyzing the internal consistency, a Cronbach Alpha coefficient $\alpha = .94$ was obtained.

Cognitive schemas. Young Cognitive Schema Questionnaire - Short Form, YSQ-S3 (Young & Brown, 2001) was used to measure cognitive schemas. The instrument comprises 114 items and measures 18 dysfunctional cognitive schemas, namely: emotional deprivation, abandonment / instability, mistrust / abuse, social isolation / alienation, defect / shame, failure, addiction / incompetence, vulnerability to illness, protectionism / impaired ego, claim / grandomania, impaired self-control, subjugation, self-sacrifice, seeking approval, negativism / passivity, emotional inhibition, unrealistic standards, punishment, grouped into five domains / areas: separation / rejection, impaired autonomy, impaired limits, other directedness, overvigilance. The answers are given on a six-step Likert scale, where 1 - totally untrue to me and 6 - describes me perfectly. Example of item: "If I make a mistake, I deserve to be punished". When analyzing the

internal consistency, a Cronbach Alpha coefficient α = .98 was obtained.

Intelligence. For the measurement of intelligence, the *Analogical Transfer Test* was used, which is part of the CAS ++ platform built by Cognitrom (2009). The test is built on the experimental tasks used by Sternberg (1983) to evaluate knowledge transfer and comprises two subscales. The first subscale evaluates the transfer capacity on verbal content (22 items), and the second subscale evaluates the transfer capacity on figurative content (18 items). Each item consists of two parts, one part specifying the relationship between two elements (eg. "The doctor is for the patient") and a second part in which one element is offered and four possible relationships (eg. "What the lawyer is for judge / client / student / court"). The task of the participant is to apply the relationship discovered in the first part of the item and to select the correct alternative for the second part (eg. lawyer - client). A point is scored for each correct answer. In the present study we determined the IQ variable as the sum of the scores of the two types of analogical transfer. Scores can take values between 0 and 40.

3. RESULTS

Descriptive statistics is presented in Table 1.

Table 1. *Descriptive statistics - means, standard deviations, and correlations among variables*

	M	SD	ATEV	ATANX	SepRes	ImpAut	ImpLim	OthDir	OverVi	QI
ATAV	3.58	.90	-	.63***	.74***	.59***	.35**	.53***	.70***	.12
ATANX	3.55	1.22		-	.79***	.79***	.42***	.82***	.76***	.12
SepRes	78.10	29.90			-	.87***	.39**	.76***	.88***	.08
ImpAut	56.80	24.40				-	.46***	.79***	.85***	.05
ImpLim	34.70	9.89					-	.50***	.51***	-.04
OthDir	88.40	24.50						-	.80***	-.03
OverVi	116.00	35.60							-	.03
QI	34.50	4.70								-

Note. * p < .05, ** p < .01, *** p < .001

In order to test hypothesis H1, a series of multiple linear regression analyzes were performed, having as predictors the two styles of attachment, avoiding and anxious, and as dependent variables the five domains of the cognitive schemas.

Table 2. *Regression model for attachment styles predicting the separation/rejection domain of cognitive schemas*

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-15.55	8.47		-1.84	.07
	ATAV	13.10	2.94	.39	4.46	.00
	ATANX	13.32	2.16	.55	6.18	.00

a. Dependent Variable: Separation/Rejection

b. R^2 = .72

The two attachment styles account for 72% of the variance of the separation/rejection domain of cognitive schemas, the regression equation being statistically significant, F(2,59) = 77.13, p < .01. Of these, avoidant attachment positively predicts separation/rejection domain, β = .39, p < .01 and anxious attachment positively predicts separation/rejection domain, β = .55, p < .01.

Table 3. *Regression model for attachment styles predicting the impaired autonomy domain of cognitive schemas*

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-6.63	7.97		-.83	.41
	ATAV	4.40	2.76	.16	1.59	.12
	ATANX	13.58	2.03	.68	6.70	.00

a. Dependent Variable: Impaired autonomy

b. $R^2 = .63$

The two attachment styles account for 63% of the variance of the impaired autonomy domain of cognitive schemas, the regression equation being statistically significant, $F(2,59) = 77.13$, $p < .01$. Of these, only anxious attachment positively predicts impaired autonomy domain, $\beta = .68$, $p < .01$.

Table 4. *Regression model for attachment styles predicting the impaired limits domain of cognitive schemas*

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	20.81	4.24		4.90	.00
	ATAV	1.37	1.47	.14	.93	.36
	ATANX	2.35	1.08	.33	2.18	.03

a. Dependent Variable: Impaired limits

b. $R^2 = .19$

The two attachment styles account for 19% of the variance of the impaired limits domain of cognitive schemas, the regression equation being statistically significant, $F(2,59) = 6.79$, $p < .01$. Of these, only anxious attachment positively predicts impaired limits domain, $\beta = .33$, $p < .05$.

Table 5. *Regression model for attachment styles predicting the other directedness domain of cognitive schemas*

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	28.96	7.62		3.80	.00
	ATAV	.42	2.64	.02	.16	.88
	ATANX	16.26	1.94	.81	8.39	.00

a. Dependent Variable: Other directedness

b. $R^2 = .67$

The two attachment styles account for 67% of the variance of the other directedness domain of cognitive schemas, the regression equation being statistically significant, $F(2,59) = 59.95$, $p < .01$. Of these, only anxious attachment positively predicts other directedness domain, $\beta = .81$, $p < .01$.

Table 6. *Regression model for attachment styles predicting the overvigilance domain of cognitive schemas*

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	9.81	11.29		.87	.39
	ATAV	14.74	3.92	.37	3.76	.00
	ATANX	15.19	2.87	.52	5.29	.00

a. Dependent Variable: Overvigilance

The two attachment styles account for 66% of the variance of the overvigilance domain of cognitive schemas, the regression equation being statistically significant, $F(2,59) = 55.88$, $p < .01$. Of these, avoidant attachment positively predicts overvigilance, $\beta = .37$, $p < .01$ and anxious attachment positively predicts overvigilance domain, $\beta = .52$, $p < .01$.

It is observed that the two attachment styles are positively associated with the five domains of cognitive schemas. Thus, avoidant attachment determines cognitive schemas to a lesser extent, respectively only the schemas of separation / rejection and overvigilance domains, while anxious attachment determines cognitive schemas in all five domains. These results lead us to state that hypothesis H1 is supported by the analyzed data.

In order to test hypothesis H2, a series of moderation analyzes were performed, using as predictors, alternatively, the two attachment styles, avoidant and anxious, as dependent variables the five domains of cognitive schemas and as moderating variable intelligence level (analogical transfer - cumulative verbal and figurative). The Medmod module from JAMOVI was used.

Table 7. *Moderation coefficients for IQ effects on relationships between attachment styles and cognitive schemas/domains*

Predictor * Moderator	Dependent variable	Estimate	SE	95% CI		Z	p
				Lower	Upper		
At. Avoidant * QI	Separation/Rejection	-.40	.69	-1.74	.96	-.57	.57
At. Avoidant * QI	Impaired autonomy	-.44	.67	-1.76	.87	-.66	.51
At. Avoidant * QI	Impaired limits	-.24	.28	-.79	.30	-.88	.38
At. Avoidant * QI	Other directedness	-.16	.71	-1.55	1.24	-.22	.83
At. Avoidant * QI	Overvigilance	.52	.87	-1.18	2.22	.60	.55
At. Anxious * QI	Separation/Rejection	-.04	.37	-.76	.69	-.11	.92
At. Anxious * QI	Impaired autonomy	-.26	.31	-.86	.33	-.87	.39
At. Anxious * QI	Impaired limits	-.25	.16	-.56	.06	-1.56	.12
At. Anxious * QI	Other directedness	.37	.28	-.18	.91	1.32	.19
At. Anxious * QI	Overvigilance	.21	.47	-.72	1.14	.45	.66

It is observed that intelligence fails to moderate the relationships between attachment styles and the five domains of cognitive schemas, which leads us to state that the H2 hypothesis is not supported by the analyzed data.

4. DISCUSSION

The present study aims to analyze the relationship between attachment styles and early cognitive schemas, as well as the role of intelligence in this relationship. Hypothesis H1 showed that cognitive schemas are associated with attachment styles, and in particular with anxious attachment. People with an avoidant attachment style hesitate to build close interpersonal relationships, the interactions between them and others being marked by mistrust, suspicion, and restraint. They develop schemas in the domain of separation / rejection or in the domain of overvigilance, the basic theme of dysfunctional thinking being the lack of confidence in their own forces and the belief that they will not be accepted and appreciated by those around them. At the same time, the anxious attachment, which is marked by fears, worries, concerns and anxieties, devolves cognitive schemas in all five areas, presenting a wide range of dysfunctional thoughts and behaviors that often affect the person's well-being and quality of life.

Our results are consistent with those obtained in other studies. Thus, Astaneh, Bahrami, and Farahani (2013), in a study on cognitive schemas and anxious attachment style in people with bipolar personality disorder, found that a significant relationship exists between the schemas of emotional deprivation, abandonment / instability, mistrust / abuse, social isolation / alienation, and defectiveness / shame in anxious attachment of individuals with BPD.

Brummett (2007), in a study on the relationships between attachment styles, cognitive schemas, coping strategies, and therapeutic alliance in addicted persons noted that anxious attachment is positively associated with maladaptive cognitive schemas and coping strategies, the relationship between them being not moderated by the therapeutic alliance.

Shorey and Snyder (2006) conducted a study in which they emphasized the importance of attachment styles in the development of cognitive schemas and implicitly in the psychological functioning of individuals. The authors have shown that attachment styles influence the development of internal work models through which individuals perceive reality and interact with the world. The conclusions of the two authors provide additional information in the field of cognitive schema therapy.

The second hypothesis of the present study aimed to investigate the role of intelligence in the relationship

between attachment styles and early cognitive schemas. The results showed that intelligence does not moderate this relationship, the moderation estimates being statistically unsignificant. However, at lower levels of intelligence, the relationship between anxious or avoidant attachment and cognitive schemas has been shown to be stronger, while at higher levels of intelligence, this relationship is weaker.

The literature does not provide sufficient studies on the relationships between these variables. However, attachment has been linked to cognitive development in children, studies show that a secure attachment allows the child to focus on exploring the environment and problem solving, while less functional attachment styles hinder optimal cognitive development (Pastor, 1981; Joffe, 1981).

With regard to intelligence, Haaga, DeRubeis, Stewart, and Beck (1991) tried to show that people with higher levels of intelligence benefit better from cognitive therapy. Their study, attended by 106 people with depression, generalized anxiety, and dysthymia, failed to support the proposed hypothesis. However, the level of intelligence was positively associated with the type of psychotherapy chosen.

Limitations and further directions

One of the limitations of this study is the relatively small group of participants. They were selected from a single training school, and one of the future directions of research is to co-opt other students so that the results obtained can be generalized.

Another limitation is the small number of studies found regarding the role of intelligence in relation to attachment styles and cognitive schemas. This fact prevented us from referring to the current literature and comparing our results with those of other researchers. In our future research, we intend to apply other measures to assess the level of intelligence, trying to capture the relationships between it and the cognitive schemas.

Also as a future research direction, our intention is to carry out a personal development program meant to modify the maladaptive cognitive schemas of psychologists and psychotherapists for their personal development and for building a strong basis for a good therapeutic lliance with their clients.

Practical implications

The present study showed that early cognitive schemas are based on attachment styles. Based on these results, psychoeducational programs can be developed to be implemented in faculties and training schools in psychotherapy so that future psychologists and psychotherapists increase their quality of life and implicitly of the services they provide to their clients. The maladaptive cognitive schemas can block an effective therapy, which endangers both the well-being of the client and the psychologist's. The authentic sessions of personal development and training in psychotherapy should aim to "reconcile" the psychologist with his own problems and to easily adapt to his client's issues.

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