Preliminary Study of a Digital Measure of Attachment for Children from 9 to 12 Years Old

María Cristina Richaud[1,2]*, Viviana Lemos[1,2], Elsa Bei[1] and Jael Vargas Rubilar[1,2]

[1]*National Council of Scientific and Technical Research (CONICET), Argentina*

[2]*Universidad Adventista del Plata (UAP), Argentina*

*Corresponding Author: María Cristina Richaud, National Council of Scientific and Technical Research (CONICET) and Universidad Adventista del Plata (UAP), Argentina

Abstract

The objective of the present work is to develop an attachment test in a digital form. The child is presented with five conflicting stories that he/she must complete. It is assumed that the unique mode of resolution of the story will identify the mental model of the child's attachment relationships. Five conflicting stories were prepared with female characters and four with male characters: the first proof story about the difficulty facing an exam, the second about bullying, the third about a bicycle accident, the fourth about feeling sick at a friend's house, and the fifth about getting lost in a shopping. The test was administered to a sample of 120 children aged 9 to 12, of both sexes, who attended primary schools, in the City of Buenos Aires, individually, and on Android Tablet support. The reliability among judges reaches an agreement of .97 (avoidant attachment), .84 (ambivalent anxious attachment) and .90 (secure attachment). Convergent validity analysis between the digital attachment test and the questionnaire by Finzi., *et al.* [1,2] indicated an r = .489 between secure attachment, according to the Finzi., *et al*. and the digital test, and r = .633 and r = .480, for avoidant and anxious/ambivalent attachment, respectively, between the two attachment tests. An attachment digital method was developed that has been motivating and natural for children in middle and late childhood. The validity of the test is adequate but it remains to be used with clinical groups.

Keywords: Attachment Test; Digital Form; Child

Introduction

According to Bowlby [3], the establishment of intimate emotional ties with specific individuals is a basic component of human nature, a primary need that is present throughout life. Starting in childhood and throughout life, the mental health of a person depends largely on the ability to have a link with reliable figures, which are able to provide emotional support and protection if needed [4].

Due to this, it is important to be able to evaluate the development of attachment during childhood for, in case of alterations in it, to have the possibility to intervene early. The assessment of attachment, based at first in the observation of behaviors, is giving way, as children grow and mature cognitively, to others methods focused on the representational perspective as a more indirect way of expressing the needs of bonding.

Since, the completion of stories, a procedure preferably used by the representational approach, begins to lose interest after 9 years, we think that one way to make this procedure more attractive for older children, was to present it in digital form.

Method

Construction of the digital attachment instrument

The child is presented with five conflicting stories that he/she must complete. It is assumed that the unique mode of resolution of the story will identify the mental model of the child's attachment relationships. In the modality that we develop, two-dimensional characters

are presented and their presentation is synchronized with a story narration made by a "standard" voice, after which the child is invited by the software to finalize the story by saying "show me and tell me what happens next" "what did the cartoon character do", "what would you have done", "what would you think and what would you feel". If in the story the child mentioned that someone helped him, he/she is asked "what would your dad, mom, uncle, friend do" (depending on who has pointed out as an attachment figure), "what would your dad/mom/uncle, and friend think" and "what would your dad/mom/uncle, etc. feel". The child can write or just tell his answers orally.

Five conflicting stories were prepared with female characters and five with male characters: the first proof story about the difficulty facing an exam, the second about bullying, the third about a bicycle accident, the fourth about feeling sick at a friend's house, and the fifth about getting lost in a shopping.

Example of proof story

Tomorrow Maria has a math test on a rather difficult subject.Lately, she has not done very well and needs to get a good grade. The teacher has given her some exercises to practice at home.
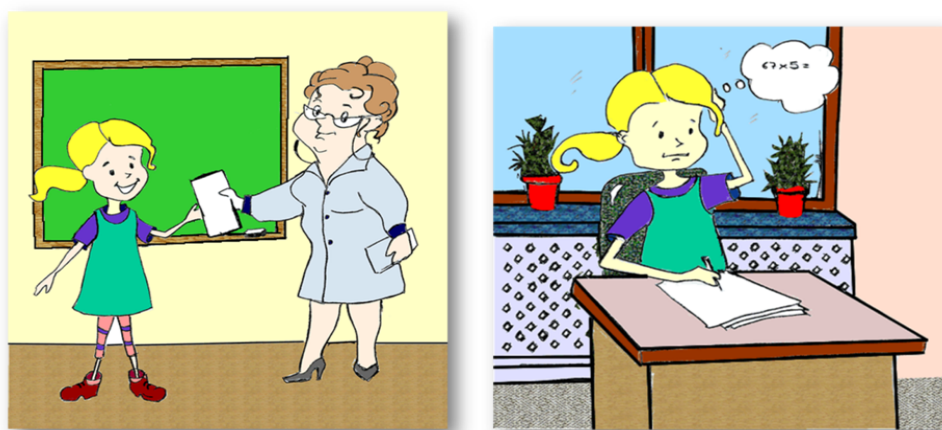

Figure 1: *When Maria wants to solve them.*

Figure 2: *She realizes she doesn't understand.*

Assessment system development

To develop the scoring system, the relationships established by the psychological theory about the connection between different types of attachment and other psychological processes were taken into account. It was hypothesized that the type of attachment developed would be related to the reaction to the stressor raised, the coping strategy used, the degree of emotional regulation, the type of emotion experienced, the mentalization or attribution to the other of a mental state, with the degree of interaction with the other (empathy, effectiveness in receiving help from another, friendship), with the quality, quantity, relevance and form of narrative coherence and with the locus of control. Each variable was defined according to its expression in each type of attachment (secure, avoidant, anxious/ambivalent, and disorganized) and a point (presence) and zero (absence) were attributed, depending on whether or not it occurred in each category of each variable. The values in each type of attachment can vary between 0 and 8 (See table 1).

Proof vignette				
	Secure	**Avoidant**	**Anxious/ambivalent**	**Desorganized**
Reaction	Moderate	Minimized	Maximized	Contradictory
Coping	Direct/Action on the problem	Not looking to connect	Paralization	Cannot organize strategy, does not regulate, does not express its need or is overwhelmed
Emotional Regulation	Equilibrated (low anxiety-low avoidance)	Low anxiety-High avoidance	High anxiety, low avoidance	
Type of emotion	Confidence	Anger-Hostility	Fear-Sadness	Contradictory- Apprehension or fear of the caregiver
Interaction with other	There is interaction	No interaction	Extreme caution	Can't do it
Mentalizatión	Equilibrated	There is no interest in performing	Emotional	Can´t do it
Narrative coherence	Internal consistency, coherent, orderly	Short narration	Long narration	Bizarre content
Locus of control	Equilibrated	External	Internal	Diffuse, feeling sometimes as a victim, sometimes as an executioner
Total				

Table 1: Classification of each variable in each type of attachment.

Participants

The test was administered to a sample of 120 children aged 9 to 12, of both sexes, who attended primary schools, in the City of Buenos Aires, individually, and on Android Tablet support.

Ethical procedure

The purpose of the study was communicated to the school authorities, presenting the project and obtaining their authorization to administer the test to the children. We then proceeded to hold explanatory meetings with the parents and request informed consent. Finally, the test was administered to the children indicating that they could refuse to answer it, if they wanted to, and that if they started responding and at a certain moment they wanted to stop doing so, they could interrupt without inconvenience. The confidentiality of the results was also guaranteed.

Instruments

Along with the digital attachment test, a verbal test was administered:

- Questionnaire of childhood attachment styles by Finzi-Dottan., *et al.* [1,2] (Argentine adaptation, Richaud, Mesurado and Minzi [5]) that indicates whether the children have secure attachment, insecure avoidant or insecure anxious, analyzing the established relationships with their peers The internal consistency for the Argentine sample was α = .80 for the anxious subscale and α= .70 for the avoidant and secure scales.

- Sample items: Secure attachment: I make friends easily; Avoidant attachment: I don't feel comfortable making new friends; Anxious attachment: Sometimes I feel afraid that some kids don't want to be my friends anymore.

Results

A reliability among judges analysis was conducted regarding the evaluation of the stories in the digital attachment test, reaching an agreement of .97 (avoidant attachment), .84 (ambivalent anxious attachment) and .90 (secure attachment).

Convergent validity was studied by analyzing the correlation between the values obtained in the digital attachment test, with those of the questionnaire by Finzi., *et al* [2]. The results indicated an r = .489 between secure attachment, according to the Finzi., *et al.* and the digital test, and r = .633 and r = .480, for avoidant and anxious/ambivalent attachment, respectively, between the two attachment tests.

Discussion

We found that attachment evaluation format here presented has been attractive to children, who were very willing and motivated to respond. However, the productions in the different stories have been quite concise, making evaluation difficult. We hypothesize that it could be because, although the administrations were individual, they were made within the school framework, with limited times.

On the other hand, we have worked with a school population, where it is not common to find very pronounced avoidant or anxious attachment and non-existence of disorganized attachment, with the results generally having little variance. For this, we are beginning to evaluate a sample of children attending clinical consultation or interned in institutions for abandonment, drug-dependent or judicialized parents, etc.

Conclusion

We have developed an attachment evaluation method that has been motivating and natural for children in middle and late childhood. We have also developed an evaluation method that has been satisfactory. The validity of the test is adequate but it remains to be used with clinical groups, to achieve greater discrimination in the types of attachment. From the point of view of the method, we are trying to refine the evaluation system and improve the digital form software.

Aknowlegement

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