



Assessing Attachment Using Projective Tests:

A Scoping Review on Adolescent and Adult Studies

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Highlights

- Projective tests can be powerful tools to assess attachment in human relationships.
- However, reports on the validity and reliability of these tests are scarce.
- The Adult Attachment Picture System, the Bird's Nest Drawings, and the Draw-A-Person test were the most popular projective test to assess parent-child attachment
- Previous studies on adolescents and adults attachments had been conducted most of the time in US and European countries.
- Similar studies carried out in Asian countries are needed.

Abstract

Background: Projective assessment has been widely used in clinical settings to reveal personal characteristics, including relationship attachment. However, more often attachment was observed in children, rather than older groups. *Study aims:* The present study aims to conduct scoping review on projective test that had been used to assess a parent-child attachment reported by adolescents and adults. *Method:* We search original articles in ScienceDirect, Scopus, EBSCOhost, Proquest and Emerald Insight. Initial search resulted 2447 articles, but after selection process was done, finally there are 11 articles to be reviewed. *Results:* Three projective tests had been used frequently to assess attachment on adolescents and adults were: 1) the Adult Attachment Picture System (AAP); (2) the Bird's Nest Drawings (BND); and (3) the Draw-a-person test (DAP). These tools were predominantly developed in US and European countries. Similar tools validated in Asian countries is very limited. *Conclusion:* Future studies, particularly outside US and European countries, need to validate these measures prior to the study.

Keywords: Projective Test; Attachment; Adult; Adolescence; Assessment

INTRODUCTION

The underlying assumption of attachment theory is that individuals are born with an innate motivational tendency to seek proximity in the face of a threat to others who is capable of providing safety and enhancing security (Bowlby, 1973). Another concept that is well-known in attachment theory is the role of an internal working model. The internal working model is a socio-emotional and cognitive aspect that builds on the history of perceived experience interacting with caregivers (Pietromonaco & Barrett, 2000). Exploration of attachment studies can reveal an understanding of emotion regulation capacity, patterns of thought process, attitudes, and behaviors in social settings (Putriningsih & Kusumaningrum, 2022; Sagone et al., 2023; Sheinbaum et al., 2015).

Infants have an innate tendency to form patterns of attachment with their primary caregivers based on the quality of the caregiving (Weinfield et al., 2008; Sherman et al., 2015). These patterns of attachment are forms of a working model or schema, which is a compilation of emotions, thoughts, and memories that guide the perspective, attitude, and behavior in relation to others (Roberson et al., 2011; Rosalina et al., 2020). The developing working model or schema that is based on the mental representation of attachment figures, the self, and relationships can be termed an internal working model (IWM) (Bowlby, 1969, 1973; Sherman et al., 2015). IWM also influences children's attachment style (). When caregivers are emotionally attuned to the needs and can effectively regulate the children's negative emotions, children can develop a relatively realistic positive outlook component of IWM of themselves (Zimmermann & Iwanski, 2019). The internal working model of insecure children is built upon experiences of being neglected, ignored, unsupported, or unloved, which increases the chance of further abandonment or rejection (Sahdra et al., 2010).

Over the past two decades, there has been an increasing body of research surrounding the assessment of attachment styles (Ravitz et al., 2010). Assessment of attachment is crucial for understanding the underlying mechanism of personality development and early mental health problems in adults and adolescents (Lacasa et al., 2015; Read et al., 2018; Yahya et al., 2021). There are two main approaches to assessing attachment style: self-reports and interviews (Naseem Ahmad et al., 2016). The well-known "gold standard" of assessing attachment style, The Adult Attachment Interview (AAI). The Adult Attachment interview is a retrospective, structured, semi-clinical interview that uncovers the early attachment experiences and their effect on their personality (George et al., 1996). Furthermore, Ravitz et al. (2010) reviewed attachment measurements and found twenty-nine measurements assess attachment. Adult Attachment Scale (Collins & Read, 1990) was built upon previous attachment studies conducted by Hazan & Shaver (1987) it is a self-report measurement that not only investigate attachment avoidance and anxiety but a sense of trust in close relationship with others (Lubiewska & Van de Vijver, 2020). The Experiences in Close Relationships-Revised Questionnaire (ECR-R) consists of a 36-item adult attachment that measures cognitions and expectations with regard to romantic relationships on two scales: Attachment anxiety and avoidance (Ehrental et al., 2021). The Attachment Style Questionnaire was built upon Bartholomew and Horowitz's notion of attachment that an infant builds internalized patterns of attachment experiences and affection from a caregiver (Mosterman, 2015). The ASQ is categorized based on four attachment styles: secure, fearful, preoccupied, and dismissive (Bakker et al., 2004). Although self-report questionnaires are tools that could measure attachment tendency in adolescents and adults, projective assessments are often overlooked as a tool to reveal the inner dynamic of attachment.

Projective assessments are tools that incorporate ambiguous stimuli that allow the client or individual to provide a free-form response (Camic et al., 2012). Various projective assessments have been used, like Rorschach, Thematic Apperception Test, sentence completion test, and human drawing figures, all incorporate some form of free-association method (Urbina, 2004). The current focus of research on projective assessment is the heated debate concerning the validity and reliability of the assessment. Numerous researches focuses on testing the validity and reliability of projective assessment because a huge concern about projective assessment rests heavily on the lack of validity and reliability (Piotrowski, 2015). Research on the validity and reliability of projective assessment on capturing attachment style in adults and adolescents has been further explored. Gallichan & George (2014) assessed attachment style using Adult Attachment Projective Picture System in participants having a mild intellectual disorder and found that five out of six participants showed stability in their classification of attachment over time. Besides assessing the validity and reliability, projective assessments are also mostly used in clinical context. George & Buchheim (2014) also used Adult Attachment Projective Picture System (AAP) in severely traumatized clients. Representation of attachment in clients having substance abuse disorder was undergone through the use of The Bird's Nest Drawings revealed that clients with substance abuse disorder are classified as having insecure attachment and used less color in the drawings (Francis et al., 2003).

Projective assessment serves a crucial role in capturing and understanding participants' inner dynamics to help clinicians provide treatments. This study aims to map evidence of projective assessment on capturing and understanding the classification of attachment in adolescents and adults. The specific questions for this scoping review are: (1) What projective tests assess attachment representation in adolescents and adults?; (2) How are these projective tests capture attachment representation in adolescents and adults?

METHOD

Study design

This study implements a systematic scoping review to explore existing research on projective tests to assess attachment representation in adolescents and adults. A scoping review is a niche in review methodologies that aims to provide a preliminary assessment of the scope of certain topics and identify the existing nature of research evidence (Grant & Booth, 2009). This type of review not only aims to capture the scope of research evidence surrounding a topic but also identify gaps in evidence, clarify concepts and definitions of terms, evaluate the implementation of research, and identify certain surrounding factors of a specific concept (Verdejo et al., 2021). Scoping reviews are also indicated as a consideration, or a prelude for implementing systematic review in future studies (Tricco et al., 2016).

This scoping review implements guidelines of conducting scoping review from Arksey & O'Malley (2005) that has also been used in attachment research conducted by Aliakbarzadeh Arani et al. (2022) regarding place attachment: (1) Identifying the research question; (2) Identifying relevant studies; (3) Study selection; (4) Charting the data; (5) Collating, summarizing, and reporting the results.

Stage 1: Identifying the research question

Identifying the research question is a fundamental step in the scoping review. Based on the existing literature review conducted above, this study aims to explore existing literature and the nature of research on projective tests that assess attachment representation among adolescents

and adults. The research question based on the study's purpose was as follows: "What projective tests are there that assess attachment representation in adolescents and adults?" and "How are these projective tests capture attachment representation in adolescents and adults?"

Stage 2: Identifying the relevant studies

Relevant studies were derived from a comprehensive search through five electronic databases: ScienceDirect, Scopus, EBSCOHost, Proquest, and Emerald Insight. Advanced search with the Boolean operator was implemented with the use of several keywords: "Projective Assessment", "Projective test", "Attachment", "Adolescent", and "Adult". There was no date limitation for articles. Retrieved data searches were conducted during April 2023. The 2447 studies consisted of peer-reviewed journals and empirical research and were published in English.

Stage 3: Study selection

This step focuses on determining studies that are relevant to answer the research question. Hence, studies that fit the inclusion criteria. The inclusion criteria were empirical studies or primary studies (reviews are excluded). There are no time limitations for studies because the author presumes to gather the scope of the relevant studies. Study methods of quantitative, qualitative, and mixed methods were included in this study. Studies that are reported used English. All studies are gathered through five electronic databases and exported to Mendeley software with abstracts and references. Rayyan software was used to help with the selection of studies. The first author did a screening of titles and abstracts. 976 studies were removed due to duplicates. Further on, 1456 studies were excluded because they did not use projective assessment, secondary studies, or review studies, were not reported in English, and the studies do not focus on attachment. Then, 12 studies were excluded because participants were not adolescents or adults and did not specify using projective tests that assess attachment. A total of 11 studies were included for synthesis in this scoping review. All authors were known and confirmed stages from the initial steps and agreed upon 11 studies that were included in the synthesis. Figure 1. Captures the screening process until included studies in this research.

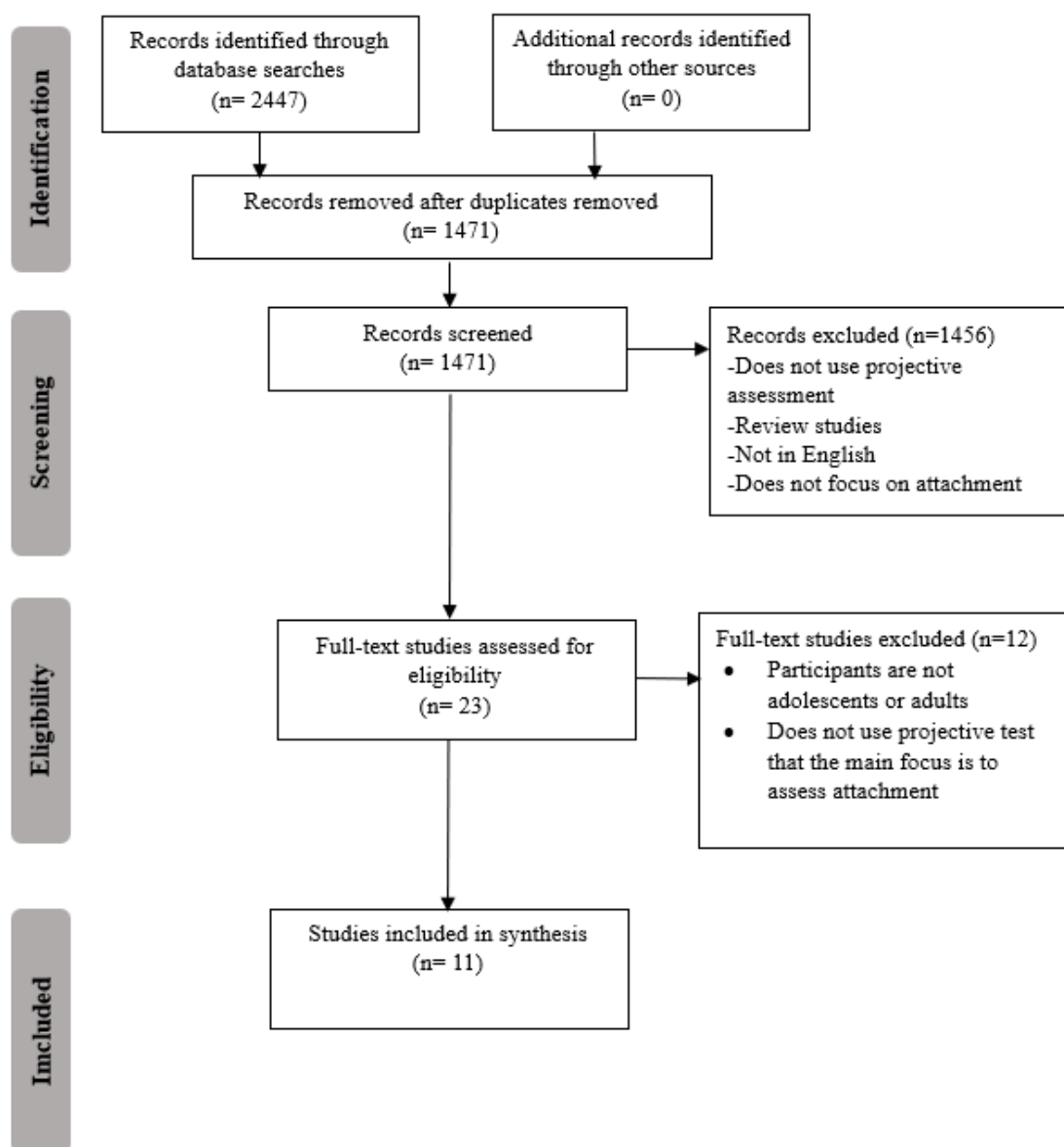


Figure 1. PRISMA flowchart in article selection

Stage 4: Charting data

This step focuses on charting the data or findings of the review. A data extraction table was developed to chart the studies that are included. This table includes authors' names, year of publication, purpose of study, study sample, method and instruments, findings, and future research. The data extraction process produces 8 quantitative studies, with one study using cross-sectional and 3 case studies, with two single-case studies. The first author developed the data extraction table, whilst the other authors were informed and regularly checked the data and made decisions at each step. Quality appraisal of each study was not conducted due to the guidelines from Arksey & O'Malley (2005) that were implemented in this research. Table 1 depicts the results of data extraction.

Stage 5: Collating, summarizing, and reporting the results

Authors in this research reviewed multiple times the categories that emerge in this study. These themes were carried out through a series of active discussions amongst authors until consensus was reached.

RESULT

Study characteristics

This scoping review synthesized 11 studies that have been selected based on the inclusion criteria. There are no time limitations of studies and included studies have been published between 2003 and 2019. Most studies have been conducted in United States, United Kingdom and Europe. There are no studies identified in Asia and African areas. Quantitative studies were the majority method that is implemented. There are three case studies, where two are categorized as a single-case study. Case studies were conducted mostly in the clinical context.

Settings

Context of studies based on the location of studies has found that the studies included in this research were mostly located in the United States and Europe. Four studies have been conducted in the United States and four in Europe. Two studies were conducted in the United Kingdom, and just one study was conducted in Canada. Studies conducted in Asia or African countries were not found. The majority of studies have been published in recent decades (2010-2020) (n=10), and there is just one research study published in earlier decades (2000-2009).

Participants

Six studies of eleven included studies comprised adolescent participants, with the lowest age of 12 years old. Four out of eleven studies consisted of adults and just one study incorporated participants from the adolescent and adult age range. Participants were from a diverse ethnicity. The majority of ethnicity was Caucasian, having been found in four studies of eleven studies that are included. One study incorporates participants of Arab ethnicity. Two studies incorporate participants from a mix of different ethnicity residing in the United States, European American, Asian American, African American, and Hispanic. Four studies do not explicitly state the participants' ethnicity. In terms of the history of clinical problems, there are four studies assessing mental health problems. Two studies assessed participants having an intellectual disability, and participants were in the level of mild intellectual disabilities. One study was implemented for participants having substance abuse disorder, and one study was a single case study exploring complex PTSD.

Types of studies

Four out of 11 studies evaluated the psychometric aspects of the projective assessment. Additionally, four out of eleven studies used a quantitative design. Three remaining studies were case studies, with two out of three case studies being a single case study.

Measures

Aside from testing projective assessment, six out of eleven studies incorporate other measurements to test the hypothesis. One study incorporates biological samples and blood samples to assess genotype. One study used Structured Clinical Interviews as a complement to assessing clinical problem manifestation (PTSD). Measurements that are included: the Hamburg

Wechsler Intelligence Scale, the Balanced Inventory of Desirable Responding, The Beck Depression Inventory-II, the Adult Attachment Scale, The Experiences in Close Relationships Questionnaire, The Inventory of Parent and Peer Attachment, Weschler Intelligence Scale.

Table 1.*Results of data extraction*

<i>No</i>	<i>Author name and year of study</i>	<i>Purpose</i>	<i>Study sample</i>	<i>Method and instruments</i>	<i>Findings</i>	<i>Future research</i>
1.	Gander et al. (2017)	To determine discriminant validity of the Adult Attachment Projective Picture (AAP) System in adolescence	79 adolescents (58 girls and 21 boys) aged between 15 and 18 years old and residing in Austria and South Germany.	Quantitative. Instruments: (1) Adult Attachment Projective Picture System (AAPP); (2) Hamburg Wechsler Intelligence Scale; (3) Balanced Inventory of Desirable Responding	Acceptable discriminant validity for adolescents and has similar distributions matching in studies of non-clinical adolescents that was measured using the Adult Attachment Interview (AAI).	Assess AAP in the context of adolescent psychopathology for further innovation in attachment-based therapeutic interventions.
2.	Gallichan & George (2014)	To explore the potential of assessing early attachment experiences of adults with intellectual disabilities in using the Adult Attachment Picture System (AAP)	5 adults (3 females and 2 males) residing in the South West of UK	Clinical case studies	The Adult Attachment Picture System is a valid instrument to classify attachment status and identifying trauma risk in adults with mild intellectual disabilities.	Compare AAP analyses against case history material to establish face validity.
3.	Jones-Mason et al. (2015)	1) To evaluate the validity of AAP and AAI; 2) To compare AAP and AAI in assessing indicators of risk (low socioeconomic status, depression) and genotype 5-HTTLPR	101 late adolescents attending public university in the western United States.	Quantitative. Instruments: (1) Adult Attachment Interview; (2) Adult Attachment Picture System; (3) The Beck Depression Inventory-II; (4) 5-HTTLPR genotype	Concurrent validity and differential predictive validity was not found between AAI and AAP. This can indicate both measure different facets of attachment-related experience and relational impact. Only AAI differentiated between unresolved versus organized attachment classification on SES, depression and 5-HTTLPR genotype.	Needed more of in-depth exploration to the unique contribution of both measurements.

4.	Trutescu et al. (2016)	(1) Determine relationship between attachment type, age of motherhood, and sociodemographic variables; (2) Potential of Draw-a-Person (DAP) projective test for early diagnosis of attachment dysfunctional types in young and adult mothers	60 women with age range between 13-43 years and residing in Romania	Cross-sectional study, quantitative. Instruments: (1) Adult Attachment Scale; (2) Draw-a-Person test	DAP test can reveal risk for maternal dismiss-avoidant attachment type. Therefore, DAP test can be used as a screening method for teenage mothers, especially coming from low socioeconomic class.	Explore more of the use of projective test to screen maternal attachment especially in at-risk mothers in order to develop psychological intervention.
5.	Krause et al. (2016)	Investigate whether AAP induces release of oxytocins in mothers having secure attachment and induces stress related hormones in mothers having insecure attachment.	44 mothers with age range between 21-44 years and admitted to Hospital Ulm, Germany	Quantitative. Instruments - Adult Attachment Picture System and blood samples	AAP is valid for assessing attachment representation and can activate physiological reactions in mothers (increased oxytocin). Increase of oxytocin was independent of mother's attachment representation (Between insecure and secure there were no differences).	Determine if AAP can induce oxytocin in non-lactating mothers and also males.
6.	Francis et al. (2003)	Exploring the graphic indicators of drawings by patients with substance abuse disorders using The Bird's Nest Drawing (BND)	70 participants with diagnosis of substance abuse disorder	Quantitative. Instruments: (1) The Relationship Questionnaire; (2) The Bird's Nest Drawing	The Bird's Nest Drawings can differentiate individuals of having substance abuse disorder and those with no diagnosis from the use of color. Secure participants shows birds in the nest, entire family bird in the nest, and nest seen from above.	Provide confirming evidence of the use of The Bird's Nest Drawings that can capture differentiation of nest drawings between individual with substance abuse disorder and those who do not. Explore the relationship between dismissing style of attachment and substance abuse.

7.	Gallichan & George (2018)	Assess the reliability and face validity of Adult Attachment Projective Picture System on measures of internal working models in adults having intellectual disabilities.	20 adults with age range between 20 and 55 years and being diagnosed with intellectual disabilities.	Quantitative. Instrument: Adult Attachment Projective Picture System	AAP is a reliable measure to use to assess attachment representation of adults having mild intellectual disabilities. There was adequate to excellent correspondence between AAP and manifestations of internal working model. AAP is rated to be a useful clinical information to guide formulation and intervention.	Larger sample size to assess test-retest reliability of Adult Attachment Projective Picture System with individuals having intellectual disabilities.
8.	Harmon-Walker & Kaiser (2014)	Determine the inter-rater reliability and construct validity of Bird's Nest Drawing in undergraduates. Compare BND rating scale with two instruments, IPPA and ECR.	136 undergraduate students from liberal arts college in southern California.	Quantitative. Instrument: Bird's Nest Drawing	Only two scales of the adolescent instrument (IPPA) correlated with BND scores. Bottomless nests were associated with low ECR scores.	Replication study with larger samples are needed to firm the statement of the capacity of BND to assess adult attachment organization. Need to include drawing developmental data in gauge participants drawing skills. Use IPPA scales in validity study of BND.
9.	Yoon et al. (2019)	Determine the psychometric properties of BND after adding new ratings of the BND story	136 students attending liberal arts college in southern California. Age range between 18-23 years.	Quantitative. Instruments: (1) The Experiences in Close Relationships Questionnaire (ECR); (2) The Inventory of Parent and Peer Attachment (IPPA); (3) The Bird's Nest Drawing; (4) BND Story Rating Scales.	There is no existing systematic approach in rating the BND stories as indicators of attachment security. The ratings did not sufficiently fit the pattern of scores on the established questionnaires.	Further scale development of BND is needed for context independent use. Furthermore, additional drawing and story-writing tasks to produce a more reliable and valid measurement of attachment representation.

10.	Webster & Joubert (2011)	Explore the use of Adult Attachment Projective Picture System in maltreated adolescent	1 case study	Case-study	AAP provides rich information to highlight the relational context of an individual exhibiting externalizing behavior problems	More research needs to address the use of AAP in adolescent
11.	Gander et al. (2018)	Demonstrate the utility of the Adult Attachment Projective Picture System in male adolescent refugee	Male adolescent from the Middle East having diagnosis of complex PTSD with manifestation of school refusal and gaming addiction	Case-study. Multi-method assessment battery consist of The Adult Attachment Projective Picture System, Structured Clinical Interview for Axis I and Axis II disorders, Wechsler Intelligence Scale, Youth Self Report	AAP can help clinician to understand symptoms and identify treatment	Testing AAP in adolescent with mental disorders

Types of projective test for attachment assessment

Results garnered three commonly used projective tests for assessing attachment on adults and adolescents. These three projective tests are (1) The Adult Attachment Picture System (AAP); (2) The Bird's Nest Drawings (BND); and (3) the Draw-a-person test (DAP). The most commonly used projective test derivate from the data extraction process is The Adult Attachment Picture System (AAP), having had seven studies from eleven studies implementing the use of this measurement (Gallichan & George, 2014; Gander et al., 2017, 2018; Jones-Mason et al., 2015; Krause et al., 2016; Webster & Joubert, 2011). The Bird's Nest Drawings were used in three studies of eleven studies that are derived from the screening process (Francis et al., 2003; G Harmon-Walker & Kaiser, 2015; Yoon et al., 2020). Draw-a-person test was used by Trutescu et al. (2016) to assess attachment dysfunction in adolescents.

Characteristics of projective test to reveal attachment styles

Projective tests can reveal the dynamics of an individual's personality and tendency of attachment through ambiguous stimulus. The Adult Attachment Picture System (AAP) is a widely used projective test to give clinicians an understanding of attachment classification based on the analysis of eight attachment-related stimuli that depicts attachment situations such as solitude, separation, illness, death, and threat (Gallichan & George, 2014; Gander et al., 2017). Not only does the AAP reveals attachment classification, but stimulus in the AAP are recorded to understand defensive processes. Krause et al. (2016) describes the defensive patterns that are revealed through the AAP are deactivation (avoidance), cognitive disconnection (ambivalence), and segregated systems (attachment fear and resolution). Furthermore, the stimulus form the AAP has a different interpretation. Pictures with "alone scene" are interpreted for agency of self and connectedness, whereas the dyadic pictures are evaluated based on their degree of synchrony in the interactions (Krause et al., 2016). Categorization of attachment classification and defensive process are understood through how individuals build the story based on the stimulus. Individuals that show sense of self agency, connectedness, and synchrony in attachment stories, indicates a secure attach. In contrast, individuals with insecure-dismissing or insecure-preoccupied attachment shows manifestation of stories characterized with absent relationships. Jones-Mason et al. (2015) compared the using of the AAP with Adult Attachment Interview (AAI) and found that the AAP uses similar attachment classification as the AAI such as, insecure, dismissing, preoccupied, and unresolved, but AAP is more simple and costly to administer rather than the AAI.

The Bird's Nest Drawing (BND) is rather different from the AAP even though they also reveal attachment classification. The differences lies in which The BND is a single-drawing assessment of attachment, whereas the AAP is a direct picture stimulus test. Initially developed by an American art therapist, Dona Kaiser, the nest and any birds in the BND can reveal unconscious metaphors of home and family (Francis et al., 2003). Clients are to respond from a direct instruction of "draw a picture of a bird's nest" (Gaelan Harmon-Walker & Kaiser, 2015). Coming from the nature of the test, BND can be perceived less threatening, symbolic and emotional distant. The drawings of the bird's nest is then followed by clients giving narratives based their drawings and it is evaluated with a systematic rating procedure (Yoon et al., 2020).

The Draw-a-Person test is a reliable tool to offer an in-depth understanding of a representation of oneself. Clients are urged to respond from a direct instruction of "Draw a person" which is then interpreted. Based on the procedure from Trutescu et al. (2016) the DAP

test is interpreted based on four general markers and one specific marker. Those markers of indication are: (1) World view and future orientation; (2) Size of drawing; (3) Drawing outline; (4) Body integrity; (5) uncertainty or lack of autonomy. These markers help clinicians to make interpretation of the drawing itself. Addition to those markers, the researcher adds on several socio demographic indicators to help in the process of interpretation.

DISCUSSION

The study aims to conduct scoping review on projective test that had been used to assess a parent-child attachment reported by adolescents and adults. The study aims to conduct scoping review on projective test that had been used to assess a parent-child attachment reported by adolescents and adults. From 2447 articles found during initial search, 11 reports matched the inclusion criteria and eligible for review. It can be concluded that there are three projective tests that measure parent-child attachment on adolescents and adults: 1) the Adult Attachment Picture System (AAP); (2) the Bird's Nest Drawings (BND); and (3) the Draw-a-person test (DAP). These tools were predominantly developed in the US and European countries.

The present study revealed that studies on parent-child attachment from Asian countries that used projective test are underreported. This may be understood as similar studies might not use self-report rather than a projective test (Choo & Shek, 2013; Wang et al., 2021). The use of projective tests can be a disadvantage in studies involving a large sample. Wang et al. (2021) studied parent-child attachment on 668 elementary school children and their parents in China by using the Chinese version of the Inventory of Parent and Peer Attachment (IPPA) to measure parent-child as well as peer attachment. In this case, the researchers might prefer to use self-report measure instead of projective tests as using a projective test is time-consuming due to individual administration of the test. Other explanation is that the unavailability of a standardized projective test to measure parent-child attachment that had been validated cross-culturally, such as the availability of BND in Chinese, Melayu, or in Bahasa Indonesia (Indonesian language). Therefore, future studies are encouraged to validated AAP, BND, and DAP tests and the test's interpretation according to the cultures of Asian countries. Developing a new projective test is also welcomed, but for the purpose of comparison of the test results internationally, it is advised to validate the APP, BND, and DAP tests rather than developing the new ones.

The results presented in the study indicated that BND and DAP tests were both drawing activity, while the AAP using picture the reveal the parent-child bonding. Moreover, the BND seems more popular than the DAP tests maybe because of the simple and less threatening activity, such as drawing line (Francis, et al., 2003). However, in the present decades, the younger generation might have limited reference concerning the nest of the bird, or the bird kids. In this case, it is important to conduct a preliminary study to evaluate if the bird or the bird's nest is understood well among clients.

The study has several limitations. First, we conducted the search only on large databases, but in some cases, studies using BND tests had been reported as master theses. Therefore, we it did not appear during the literature search. Further studies should also involve other references that were indexed in Google Scholar or any other databases that available. Second, the majority of studies reported in this paper were conducted in the US and European countries. The readers are advised to be careful in interpreting the study findings particularly when there is a need to compare to similar studies from outside US and European countries.

CONCLUSION

Projective assessment that are used to assess attachment on adults and adolescences are still limited and needs further exploration of the validity and reliability of the instrument. Three projective tests had been used frequently to assess attachment on adolescents and adults were: 1) the Adult Attachment Picture System (AAP); (2) the Bird's Nest Drawings (BND); and (3) the Draw-a-person test (DAP). These tools were predominantly developed in US and European countries. More studies from Asian countries are encouraged.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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