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Deanship of Scientific Research

Criterion-Related Validity of the Arabic Family Relation Test

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Abstract

Objective: The current study examined the Arabic Family Relation Test (AFRT) criterion-related validity with its six main first-order factors (i.e., Restrictiveness, Affection, Vulnerability, Acknowledgment, Justice, and Trust). The variables used as criteria were the differences in family relationships based on the father-child and the mother-child relationships, child's gender, and age.

Method: The cluster random sampling technique was followed, as schools were the primary clusters. The study sample included 601 school students (47.6% males) from grades 5, 7, 9, and 11, aged between 10 and 17, selected from 10 public schools. Three instruments were used to collect the data: the Arabic Family Relation Test (AFRT), the Behavioral Problem Scale (BPS), and the Anxiety Scale (TAS).

Results: The study findings revealed very good criterion-related validity indicators of the AFRT. Statistically significant differences were found between fathers and mothers in Affection, Vulnerability, Justice, Acknowledgment, and Trust. In addition, statistically significant differences were found in Restrictiveness, Affection, and Vulnerability based on agender and grade interactions in the father-child relationships, and only age differences in some factors of the mother-child relationship. In addition, statistically significant correlations were reported between AFRT's six factors and children's internalizing and externalizing behavioral problems.

Conclusions: The study concluded that the AFRT has good criterion-related validity. It is an appropriate and promising family assessment tool for researchers and practitioners in various fields. The results were discussed in psychometric and environmental contexts. Furthermore, suggestions for implications and future research were provided.

Keywords: Family Relation Test, Arabic, gender, age, behavioral problems.

صدق المحتوى المرتبط بالمحك لمقياس العلاقات الأسرية العربي

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ملخّص

الأهداف: هدفت الدراسة الحالية التحقق من صدق المحتوى المرتبط بالمحك لمقياس العلاقات الأسرية العربي متمثلا في عوامله الستة الأساسية وهي: الصرامة، والعاطفة، والشعور بالآخر، والعدل، والتقدير، والثقة، وتم استخدام المتغيرات التالية كمحكات: الفرق في العلاقات الأسرية بناء على: العلاقة بين الأب-الطفل، والأم-الطفل، وجنس الطفل والعمر

المنهجية: تم الاعتماد على العينة العشوائية العنقودية في اختيار عينة الدراسة حيث مثلت المدارس العناقيد الأساسية. وتكونت عينة الدراسة من 601 طالب وطالبة (47.6% ذكور) من الصفوف الخامس، والسابع، والتاسع، والحادي عشر، تراوحت أعمارهم من 10-17 سنة، وتم اختيارهم من عشر مدارس حكومية. إضافة إلى ذلك فقد تم استخدام ثلاثة مقاييس لجمع البيانات وهي: مقياس العلاقات الأسرية العربي ، ومقياس المشكلات السلوكية، ومقياس القلق.

النتائج: أثبتت نتائج الدراسة مؤشرات جيدة لصدق المحتوى المرتبط بالمحك، حيث اتضح وجود فروق ذات دلالة إحصائية بين علاقة الطفل بكل من الأب والأم في عوامل العاطفة، والشعور بالآخر، والعدل، والتقدير، والثقة. بالإضافة إلى ذلك ظهرت فروق ذات دلالة إحصائية تعزى إلى التفاعل بين الجنس والصف الدراسي في كل من الصرامة، والعاطفة، والشعور بالآخر في علاقة الأب-الطفل، أما بالنسبة لعلاقة الأم-الطفل فقد ظهرت فروق دالة إحصائيا في بعض العوامل فقط تعزى إلى متغير العمر. وأشارت نتائج الدراسة أيضا إلى وجود ارتباطات دالة إحصائيا بين عوامل المقياس الستة والمشكلات السلوكية للطلبة.

الخلاصة: توصلت الدراسة إلى أن مقياس العلاقات الأسرية العربي يتمتع بمؤشرات جيدة جدا لصدق المحتوى المرتبط بالمحك، كما أنه مقياس مناسب يمكن استخدامه من قبل الباحثين والممارسين المهنيين في مجال تقييم العلاقات الأسرية، وقد تم مناقشة نتائج الدراسة في إطار سايكومتري وثقافي، وتم تقديم بعض المقترحات للتطبيقات العملية وللدراسات المستقبلية.

الكلمات الدالة: مقياس العلاقات الأسرية، العربي، الجنس، العمر، المشكلات السلوكية

Introduction

Family is an essential element of society. Accurately assessing family relationships is a core element of family treatment and evaluation. Scholarly investigations have underscored the significance of gathering information regarding family interactions by considering the children's viewpoints and implementing reliable measurements.

The Arabic Family Relation Test (AFRT) is a newly designed and validated measure that targets family relationships in Arabic contexts. A previous study (Alrajhi et al., in press) examined and documented the test's psychometric properties among Omani school students aged 10-16. Factor structure, measurement invariance, and reliability were mainly explored. The present study is a continuous investigation of the AFRT's psychometric properties. This study focused on the test's criterion-related validity among Omani school students aged 10-17.

Criterion-related validity is defined as using some variables that are not part of the scale/cluster but are known to vary across the cluster. A firm theoretical ground is essential to select a particular variable. Criterion-related validity can also be established by comparing the instrument with another previously valid instrument or external criteria (Hair et al., 2019). Researchers emphasized the importance of establishing construct validity in its different types, including the criterion-related method, before using the scale in quantitative measurement (Burton et al., 2011).

The Research Problem

A thorough exploration of the literature implied the lack of psychometrically sound and reliable measures of family relationships in the Arabic environment. The most commonly used questionnaire is the Parenting Authority Questionnaire (BAQ; Buri, 1991), adapted and validated to the Arabic context (e.g., Aldhafri et al., 2011; Alkharusi et al., 2011). The PAQ focused on three parenting styles: Authoritative, authoritarian, and permissive. These styles were conceptualized based on Baumrind's (1971) theory of parenting styles. However, it lacks other interactions between parents and children, which can characterize family relationships. Some adapted tests were identified by the researchers, such as The Bene-Anthony Test (Soliman et al., 2021), The Family Environment Scale (Gharib et al., 2018), and the Test of Family Relationships Problems (Yusuf & Dasoqi, 2019). Nevertheless, those were self-developed or adapted tests that were not frequently used or examined for their psychometric properties; some were criticized by other researchers (e.g., Griffin, 2005; Parkin, 2001). Hence, the development and validation of the AFRT will add to the Arabic literature and the family assessment field. Moreover, studying the test's psychometric properties, including the criterion-related validity, is a vital procedure to prove its applicability in the Arabic environment, generally, and in the Omani environment, specifically.

The AFRT is based on the Nijmegen Family Relation Test (NFRT, Oud & Welzen, 1989). The NFRT was developed in Dutch but then utilized by researchers of different cultures (e.g., Fitriana, 2011; Hasanah et al., 2020; Skoczeń et al., 2015; Toharudin et al., 2021). It contains 67 items and six subscales: Restrictiveness, Affection, Vulnerability, Justice, Acknowledgment, and Trust. Some studies reported higher second-order factors: Control and Support (e.g., Fitriana, 2011; Skoczeń et al., 2015). The current researchers found the NFRT an appropriate measure to test family relationships for its objective format, suitability to a normal sample, easy interpretation of the results, replicated utilization of the tests across different cultures, and inclusion of family relations' dimensions that were not assessed by Arab researchers previously.

Cumulative literature has shown various significant variables in the framework of family relationships. In this study, the most common variables were selected to be examined. Earlier studies have utilized children's different ratings of their relationships with mothers and fathers, children's age, and children's gender as three criteria to test the criterion-related validity or known-group validity (Makenzie et al., 2004) of previous versions of the NFRT (e.g., Fitriana, 2011; Moeliono et al., 2018; Oud & Welzen, 1989; Skoczeń et al., 2015). Moreover, the correlations between family relationships and children's internalizing and externalizing behavioral problems were also examined as a part of criterion-related validity (e.g., Fitriana, 2011; Moeliono et al., 2018; Oud & Welzen, 1989; Skoczeń et al., 2015). However, due to the lack of studies that psychometrically examined the different versions of the family relation test, the current researchers utilized other studies that examined the different parenting patterns or family relationships in relation to the variables: Children's age, gender, and mothers' and fathers' ratings. Citing several studies with various dimensions and results would contribute to comparison and discussion in the later stages of the current study.

Children's Ratings of Fathers and Mothers, Children's Age and Gender in Family Relationships

Few studies have been conducted to examine how children perceive their relationships with their mothers and fathers separately. In a Polish sample of children, mothers received higher ratings in affection, justice, acknowledgment, vulnerability, and trust using the Polish test version (i.e., the Family Relation Test, CFRT). In addition, fathers were reported higher in "injustice," and no significant differences were found in restrictiveness (Skoczeń et al., 2015; Skoczeń & Cieciuch, 2012). However, due to the lack of studies that psychometrically examined the different versions of the family relation test, the researchers referred to studies that examined the different parenting patterns or family relationships in relation to these variables. For example, some Western and non-Western studies found that mothers were seen as more authoritative than fathers, while fathers were perceived as more authoritarian (e.g., Abubakar et al., 2015; Uji et al., 2014; Winsler et al., 2005). Examining a sample of Chinese families with preschool children, Luo et al. (2021) reported that mothers were perceived as slightly higher in authoritative style than fathers. Four family profiles were indicated in this study: Authoritative mothers and fathers (47.25%), authoritative fathers and authoritarian mothers (15.41%), authoritative mothers and authoritarian fathers (17.33%), and authoritarian mothers and fathers (20.01%). The researchers highlighted that no differences between mothers and fathers in authoritarian parenting were detected. Similarly, Zhu et al. (2023) highlighted that Chinese mothers and fathers reported using authoritative parenting more than authoritarian parenting, yet mothers reported higher levels of authoritative parenting than fathers. Moreover, adolescents indicated receiving more maternal than paternal support.

The findings of Arabic studies were not very different from those of Asian and Western research. For instance, Aladwan and Alsaleem (2024) found that in a sample of Jordanian families, both fathers and mothers practiced high levels of authoritative parenting and medium levels of neglectful parenting, yet mothers showed low levels of authoritarian parenting compared to fathers who showed medium levels. In Omani families, it was clear that fathers and mothers showed equal levels of authoritative styles in many cases; however, in some families, mothers were more authoritative while fathers were more authoritarian. Some families showed no differences in authoritarian styles between fathers and mothers (e.g., Aldhafri, 2011; Alhadabi et al., 2019; Alriyami & Aldhafri, 2021; Alsaidi & Aldhafri, 2020; Alsyabi et al., 2021)

Regarding differences based on children's age, Oud and Welzen (1989) compared the ratings of two groups of Dutch children, 9 years old and 12 years old. The findings revealed that younger children rated both parents higher in vulnerability. However, the younger group rated their mothers only as higher in restrictiveness but lower in justice. The younger group also rated their fathers higher in acknowledgment than the older group. According to Moeliono et al. (2018), younger Indonesian children perceived their mothers as higher in affection, vulnerability, justice, and trust. However, they rated them as less restrictive.

In Omani families, older children (ages 17 to 21) showed lower ratings than younger children to their parents in acceptance, respect, affection, altruism, credibility, and caring (Aldhafri, 2014). Other Omani studies also revealed that younger students manifested higher scores for fathers' authoritarian, authoritative, and permissive styles than older students. Similarly, younger students perceived mothers' authoritarian and authoritative styles more than older students (Almamari & Aldhafri, 2018; Alriyami & Aldhafri, 2021).

Concerning children's gender, similar findings were observed in Arabic, Asian, and Western research. Parent-child relationships show some variations as well. For example, boys had higher perceptions of their parents' restrictiveness than girls, while girls had higher perceptions of their parents' affection (Aldhafri, 2014; Oud & Welzen, 1989). Similarly, boys perceived their parents as more authoritarian than girls (e.g., Someya et al., 2000; Uji et al., 2014). On the other hand, girls, more than boys, rated their parents as authoritative, showing more acceptance, respect, altruism, credibility, caring, and positive treatment (e.g., Aldhafri, 2014; Alqashaan, 2016; Someya et al., 2000). Regarding fathers' and mothers' separate ratings, mothers were seen as higher in trust by female children than males, while no differences between females and males were found for fathers (Oud & Welzen, 1989). In addition, fathers were rated higher in emotional deprivation, punishment, and guidance by male children more than female children, yet no differences were reported for mothers (e.g., Shoaby. 2011). Despite these differences, some studies reported no differences between male and female children in some family

relationship factors (e.g., Artol & Arwad, 2017; Uji et al., 2014; Zhu et al., 2023).

Family Relationships and Children's Internalizing and Externalizing Behavioral Problems

The quality of family relationships has been examined in relation to children's behavioral problems. (e.g., de Maat et al., 2021; Mak et al., 2020; Moeliono et al., 2018; Oud & Welzen, 1989; Skoczeń et al., 2015). In some cases, the connections between the quality of family relationships and some of these behavior problems were examined as a part of the psychometric properties (i.e., criterion-related validity) of the NFRT and its different versions (e.g., Moeliono et al. 2018; Oud & Welzen, 1989; Skoczeń et al., 2015).

For example, Dutch children with behavioral problems scored their fathers and mothers significantly higher on restrictiveness and significantly lower on justice, acknowledgment, and trust (Oud & Welzen, 1989). Similarly, Moeliono et al. (2018) indicated that Indonesian children under mental health treatment rated both parents significantly lower in affection, justice, vulnerability, trust, and acknowledgment.

Concerning externalizing behavior problems, it was found that a decrease in Dutch adolescents' externalizing behavior problems was linked to increased family justice over time (Delsing et al., 2005a). Similarly, justice and trust negatively predicted children's externalizing behavioral problems (Delsing et al., 2005b). Also, fathers' and mothers' justice correlated positively with Polish children's prosocial behavior (Skoczeń et al., 2015). Like externalizing behavior problems, internalizing behavior problems were most likely associated with negative parenting. Family justice and trust negatively predicted adolescents' internalizing behavior problems (i.e., anxiety, withdrawal, and depression) (Delsing et al., 2005b). Skoczeń et al. (2015) demonstrated that higher ratings of parents' restrictiveness positively correlated with higher scores of depressive symptoms and anxiety. Conversely, parents' justice, affection, acknowledgment, and trust were negatively related to depression.

Other aspects of family relationships were also examined in relation to internalizing and externalizing behavioral problems. For instance, Di Maggio and Zappulla (2014) revealed positive correlations between externalizing behavioral problems and maternal and paternal strictness in an Italian sample of children. In addition, higher levels of externalizing problems were reported by children with neglectful parents more than by children with authoritarian, authoritative, and indulgent parents. In the same way, high levels of positive communication with parents and high satisfaction with family relationships were linked to low levels of depressive feelings and suicidal thoughts among Estonian school children (Samm et al., 2010). Moreover, negative parenting (i.e., authoritarian and permissive) mediated the relationship between parenting stress and Chinese children's externalizing behavior problems (i.e., anger-aggression), and internalizing behavior problems (i.e., anxiety-withdrawal) (Mak et al., 2020). Likewise, mothers' and fathers' high levels of over-active discipline behavior and low levels of warmth were linked to Flemish adolescents' externalizing and internalizing problems (de Maat et al., 2021). Few studies have been conducted regarding the effects of family relationships on behavioral problems among Omani children. A case in point is Almamari and Aldhafri (2018), who found that authoritative parenting negatively predicted depression levels among Omani schoolchildren, whereas authoritarian parenting positively predicted depression levels.

Research Objective

The main objective of this study is to examine the criterion-related validity of the AFRT after approving its factorial structure and reliability in an earlier study (Alrajhi et al., in press). The criteria utilized in this study are children's perceptions of their relationships with fathers and mothers (i.e., separately), differences in parent-child relationships based on children's gender and age, and the correlations between parent-child relationships and internalizing and externalizing behavioral problems. Therefore, the current study aims to answer the following questions:

1. What are the criterion-related validity indicators of AFRT among Omani school students (grades 5, 7, 9, and 11) as examined by the differences between mothers' and fathers' ratings?
2. What are the criterion-related validity indicators of AFRT among Omani school students (grades 5, 7, 9, and 11) as examined by the differences in AFRT factors based on gender, age, and their interaction?
3. What are the criterion-related validity indicators of AFRT among Omani school students (grades 5, 7, 9, and 11) as examined by the correlations between AFRT factors and students' externalizing and internalizing behavioral problems?

Method

The Study Population

This study's population includes all public schools of grades 5, 7, 9, and 11 in A'seeb district, the Sultanate of Oman. According to the Ministry of Education's statistics for the academic year 2023-2024, the total number of schools, including these grades, was 91 (Alowaisi, 2023, personal communication). Due to the difficulty of applying simple random sampling, as the total number of students is huge and the list of all students' names is inaccessible, the researcher utilized the cluster random sampling method as schools were used as clusters.

First, the Ministry of Education was contacted to obtain consent and to provide a list of all schools in the A'seeb district that involved classes from grades 5 to 11. Second, this list was filtered to include only schools of the targeted grades: 5, 7, 9, and 11, students aged 10-17 (M= 13.11). The total student population was 24520 (49.37% males) (Alowaisi, 2023, personal communication). Second, a simple random sampling technique using SPSS was utilized to select schools randomly.

The Study Sample and Procedures

The total student sample was 601, selected from 10 schools of both genders (i.e., 47.6 % males). The criteria for determining the sample size were based on statistical sample size tables proposed by Israel (1992) and Barlett et al. (2001). The current sample size constitutes 2.45% of the population, which is considered a representative sample size (Israel, 1992; Barlett et al., 2001). Table 1 represents the characteristics of the sample.

Table 1. Distribution of actual sample based on grades and gender

Gender/ Grade		Five	Seven	Nine	Eleven	Total
Male	*n*	71	67	75	73	286
	% of total	11.8%	11.1%	12.5%	12.1%	47.6%
Female	*n*	65	80	91	79	315
	% of total	10.8%	13.3%	15.1%	13.1%	52.4%
Total	*n*	136	147	166	152	601

Classes inside each selected school were chosen based on the circumstances inside the school and by the coordination with the headmaster. Moreover, the researcher contacted each school before the data collection to ensure that the selected school was adequately prepared with learning resource rooms or computer labs equipped with computers and internet facilities.

All participating children were Omani and living with both parents at the time of data collection. Although the options of "mothers only" or "fathers only" were included in the AFRT for those students who lived with one parent only, the researchers had to delete these cases. Those cases were very low (i.e., less than 100); hence, they were not comparable with other two-parent cases. Moreover, some individual-parent cases were identified to include extreme values.

All students in each class were reached for data collection in a separate learning resources room. The Ministry of Education's and headmasters' consent was obtained, replacing the parents' consent. The students were asked to voluntarily respond to all three instruments used in this study: the Arabic Family Relation Test (AFRT), the Behavioural Problems Scale (BPS), and the Anxiety Scale (TAS). The goal of the study was explained to the students before data collection. Also, confidentiality and privacy of the data were ensured. In addition, it was ensured that all participating students were living either with both parents or at least with one parent, and there were no orphan students. One of the researchers and some research assistants supervised the data collection process. If a student showed inability or unwillingness to answer the instruments, he/she was excused and asked to return to his/her class.

Instruments

The Arabic Family Relation Test (AFRT)

The AFRT is a 60-item test measuring family relationships, particularly father-child and mother-child dyads. The test was designed as a computer-based using JAVASCRIPT and HTML5 software, with the programming language C#. The test starts with an animated guide that explains the instructions to the participants. One item is shown on the screen each time. A picture of a female silhouette reflecting the mother on the right of the screen and a male silhouette representing the father on the left of the screen appear with each item. The students could listen to the items as a recorded voice is included; otherwise, they can mute it. The respondent has to answer each question once for the mother and once for the father. A continuous response scale (i.e., in a thermometer style) ranging from 1 (totally disagree) to 10 (totally agree) was used to answer the questions. A single-parent option was also provided to the students. Examples of items are Restrictiveness (e.g., my father /mother often bosses me around), Affection (e.g., I like it when my father /mother kisses me); Vulnerability (e.g., when I am in trouble, I know that my father /mother sympathizes with me); Justice (e.g., my father /mother always lives up to his/her promises); Acknowledgment (e.g., my father /mother often looks at me with satisfaction); Trust (e.g., I usually agree on what my father /mother says).

All procedures and results of the AFRT development and validation are presented in Alrajhi et al. (in press). The validity of the AFRT was examined using face validity, CFA, and measurement invariance methods, all of which demonstrated excellent validity indicators. The factor structure of the test revealed a two-second higher-order factor model consisting of (1) Control, which includes the first-order factor: Restrictiveness, medium variation of Justice, and small variation of Acknowledgment; (2) Support which consists of the first-order factors: Affection, Vulnerability, Trust, high variance of Justice and high variance of Acknowledgment. Note that justice and acknowledgment showed a bifactorial structure.

Moreover, three methods were used to check the reliability of the test: Cronbach's alpha, test-retest, and split-halves, and all revealed very good values. Cronbach's alpha coefficients ranged between 0.87 (Vulnerability) to 0.87 (Justice and Acknowledgement) in the father-child model and between 0.75 (Vulnerability) and 0.87 (Acknowledgement) in the mother-child model. Test-retest correlations ranged between 0.63 (Trust) to 0.79 (Affection) in the father-child model and between 0.69 (Trust) to 0.84 (Affection) in the mother-child model. Regarding split-half reliability, Guttman coefficients ranged between 0.70 (Restrictiveness) to 0.83 (Affection and Acknowledgment) in the father-child model and between 0.69 (Restrictiveness and Vulnerability) to 0.81 (Acknowledgment) in the mother-child model.

The Behavioral Problems Scale (BPS)

The Behavioral Problems Scale (BPS) (Ababna & Alrafaee, 2020) was developed in the Arabic environment for a sample of Jordanian secondary school students. The BPS was used in the current study to measure school students' internalizing and externalizing behavioral problems for criterion-related validity. The original version contains three main dimensions, but only the "social and psychological problems" dimension was used for the current study. It comprises three subscales: Aggression and Rebellion, used in the present study as externalizing behavioral problems, and introversion, which were used as internalizing behavioral problems.

A five-point Likert scale (i.e., 1= Never to 5= Always) was utilized as a response scale. All items were sent for review by experts in education and psychology. Some modifications were made to the language and wording of the items, and one item was deleted from the Rebellion dimension. The BPS was also included as a version. Its items were included after the AFRT with an introduction to the scale and instructions for answering its items. Cronbach's Alpha showed very good values: Aggression (6 items, α= 0.67, example: I beat up my classmates), Rebellion (7 items, α= 0.75, example: I intentionally violate the school regulations), and Introversion (5 items, α= 0.77, example: I set alone most of the time). Test-retest reliability was 0.57 (Aggression), 0.77 (Rebellion), and 0.75 (Introversion).

The Anxiety Scale (TAS)

The Anxiety Scale (TAS) (Abdel-Khalek, 2000) was used in the current study as a second measure of internalizing behavioral problems (i.e., in addition to the introversion subscale of the BPS) to check the criterion-related validity. Abdel-Khalek developed the TAS in a sample of Kuwaiti students. The scale contains 20 items written in standard Arabic (items

example: I feel frightened, I expect bad things to happen, I feel anxious). In the present study, the scale was used as one general factor (i.e., unidimensional scale) as recommended by Abdul-Khalek. The TAS was used in Arabic and Western cultures (e.g., Abdel-Khalek & El-Yahfoufi, 2005; Alansari, 2006).

A 5-point Likert scale from 1 (never) to 5 (always) was used as a response scale. In addition, the scale was subjected to face validity by experts in Education and psychology. As a result, eleven items were retained out of twenty items. The deleted items were excluded upon the agreement of about 80% of the experts. Those items were deleted for several reasons, including ambiguity in meaning, lack of reflection on anxiety, interference with other mental health disorders, or replication of meaning with other items. In addition, some modifications were made to the language and wording of the items. The TAS was also included as a version. Its items were included after the AFRT and the BPS, with an introduction to the scale and instructions for answering its items. The Cronbach's Alpha coefficient of the scale, in the current study, was 0.88, and test-retest reliability was 0.56

Results

Preliminary Analysis

First, all data were screened for errors in data entries and distribution using frequencies and percentages; no errors were identified. Frequencies of responses on all items ranged between 1 to 10. In addition, data was screened for outliers and extreme cases, and some cases were deleted. The final retained cases were 601. Second, the normality of data distribution was examined at item level utilizing skewness and kurtosis values. All 60 items of both fathers' and mothers' ratings met the accepted level of skewness (≤ 2) and kurtosis (≤ 7), which ensured normality (Kim, 2013).

In addition, CFA analysis of the AFRT yielded a second higher-order factor structure, which consisted of (1) Control, including Restrictiveness, medium variation of Justice, and a small variation of Acknowledgment; (2) Support, which consists of the first-order factors, Affection, Vulnerability, Trust, high variance of Justice and high variance of Acknowledgment. (Alrajhi et al., in press). Due to the bifactorial tendency of Justice and Acknowledgment, analysis of variance based on second-order factors (i.e., Support and Control) was not possible. Thus, all further analyses were made based on the first-order factors level.

Moreover, measurement invariance tests showed that in the father-child model, measurement invariance was achieved at configural, metric, and scalar levels of the first-order model across groups of age and gender. On the other hand, in the mother-child model, measurement invariance was not approved at metric and scalar levels across gender groups; however, it was approved across groups of age (Alrajhi et al., in press). Therefore, further analysis of variance in the mother-child model was conducted only based on age groups.

Children's Perceptions of Their Relationships with Fathers and Mothers

This part answers the first research question: "What are the criterion-related validity indicators of AFRT among Omani school students (grades 5, 7, 9, and 11) as examined by the differences between mothers' and fathers' ratings?"

One method used to examine the criterion-related validity of the AFRT was to examine how fathers and mothers were rated on the six factors of the test by their children. For this purpose, the one-way repeated measures MANOVA test was utilized. The test's assumptions were examined. First, multivariate normality was assessed through A. Sample size, B. Skewness and Kurtosis values, and C. Outliers through Mahalanbis distances. The sample size in each group was large (i.e., higher than the number of DVs.), and an equal number of cases were distributed in each group (n= 601 for fathers' ratings and mothers' ratings in all of the six factors). Values of skewness and kurtosis for all of the six factors and as distributed for fathers' and mothers' ratings were within the accepted values: skewness (≤ 2) and kurtosis (≤ 7), which ensured normality (Kim, 2013). The maximum value of Mahalanbis distances (277. 08) was higher than the critical χ^2 (32.90); however, the large sample size and normal distribution, as shown by skewness and kurtosis, should overcome the low number of outliers (Tabachnick & Fidell, 2014). Second, linearity was explored through the linear relationships between the six factors in both fathers' and mothers' ratings using scatter dots, and no threats were detected. Multicollinearity and singularity were examined through the Pearson correlations between the six factors, and all correlations were less than 0.85,

which poses no threats of multicollinearity and singularity. Finally, Mauchly's test of Sphericity was examined. The sphericity test was violated since $p < 0.05$; therefore, the Greenhouse-Giesser value was utilized to examine the univariate effects. In addition, Pillai'strace was used to examine the multivariate test instead of Wilks' Lambda.

The one-way repeated measure MANOVA test revealed that Pillai's trace value was 0.24 (F= 31.38, hypothesis df = 6.00, error df = 595) with a *p*-value of 0.000. This result indicated statistically significant differences in the fathers' and mothers' ratings on the six factors of the AFRT. As indicated by the eta square, the effect size showed that μ^2= 0.240, which is a large effect size (Lakens, 2013).

Table 2 demonstrates the results of the univariate repeated measure MANOVA in which the statistical differences on the six specific factors are presented separately. In this step, the Bonferroni adjustment test of Alpha level was used to avoid type 1 error (Pallant, 2010; Tabachnick & Fidell, 2014). Thus, comparisons were made at $\alpha \leq 0.008$.

Table 2. Univariate tests of repeated measures MANOVA for the difference in fathers' and mothers' ratings

Source	Sum of squares	df	Mean Square	F	p	Effect size
Restrictiveness	0.36	1	0.36	0.62	0.429	-
Error	346.78	600	0.57			
Affection	50.22	1	50.22	80.85	0.000	0.119
Error	372.71	600	0.62			
Vulnerability	31.27	1	31.27	62.97	0.000	0.095
Error	297.99	600	0.49			
Justice	18.35	1	18.35	25.71	0.000	0.041
Error	429.04	600	0.71			
Acknowledgment	18.92	1	18.92	36.71	0.000	0.058
Error	309.35	600	0.51			
Trust	171.22	1	171.22	152.04	0.000	0.202
Error	675.76	600	1.12			

Table 1 shows statistically significant differences in the father-child and the mother-child relationships in all factors except Restrictiveness. Mothers manifested higher means in all five factors: Affection (*M* = 8.31), Vulnerability (*M* = 7.91), Justice (*M* = 8.17), Acknowledgement (*M* = 8.34), and Trust (*M* = 8.00), in contrast to the fathers: Affection (*M* = 7.90), Vulnerability (*M* = 7.58), Justice (*M* = 7.92), Acknowledgement (*M* = 8.09), and Trust (*M* = 7.24).

Differences In Parents-Children Relationships Based on Gender, Age, and Their Interactions

This section answers the second research question: "What are the criterion-related validity indicators of AFRT among Omani school students (grades 5, 7, 9, and 11) as examined by the differences in AFRT factors based on gender, age, and their interaction?

Another way to examine the criterion-related validity of the AFRT is to test the differences in children's perceptions of the six factors of the AFRT based on their gender, age, and their interactions. Two-way MANOVA (2x4) test was used. Two analyses were made separately, one for the father-child model and one for the mother-child model. Regarding the father-child model, differences were examined based on gender, age groups, and their interactions. In contrast, only age groups were used in the mother-child model because measurement invariance was not approved across genders (Alrajhi et al., in press). Age groups are represented by school grades (i.e., Grades 5, 7, 9, and 11).

Differences in Father-Child Model Based on Gender, Age, and Their Interactions

Table 3 presents the descriptive statistics of the AFRT's factors based on age and gender in the father-child model, and Table 4 demonstrates the two-way MANOVA (2x4) results in the father-child model.

Table 3. Descriptive statistics of the AFRT Six factors as distributed by gender and grade groups in the father-child model

Group	N	Restrictiveness		Affection		Vulnerability		Justice		Acknowledgment		Trust	
		M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Gender													
Males	286	4.70	1.83	7.61	1.69	7.34	1.44	7.72	1.68	7.92	1.62	7.33	1.68
Females	315	4.01	1.92	8.16	1.64	7.81	1.54	8.10	1.74	8.24	1.55	7.16	1.92
Grades													
Five	136	4.74	2.04	8.16	1.59	7.45	1.52	8.05	1.52	8.30	1.40	7.63	1.68
Seven	147	3.90	1.70	8.22	1.61	7.74	1.40	8.32	1.63	8.43	1.46	7.45	1.75
Nine	166	4.02	1.81	7.74	1.66	7.68	1.59	7.93	1.84	8.11	1.73	7.13	1.87
Eleven	152	4.75	1.99	7.53	1.78	7.46	1.51	7.39	1.71	7.54	1.59	6.82	1.82

N= sample size; *M*= Mean; *SD*= Standard deviation

Table 4. Results of two-way MANOVA (2x4) for the differences in AFRT factors based on children's gender, grade, and their interaction in the father-child model

Effect	*Pillai's Trace*	*F*	*Hypothesis df*	*Error df*	*p*	*Effect size*
Gender	0.123	13.79	6.00	588.00	0.000	0.123
Grade	0.163	5.64	18.00	1770.00	0.000	0.054
Gender x Grade	0.095	3.20	18.00	1770.00	0.000	0.032

Pillai's Trace was utilized instead of Wilk's Lambda due to the inhomogeneity of variance-covariance matrices (i.e., Box's M test of Equality of Covariance Matrices). Table 4 shows that Pillai's Trace value was significant in all groups: Gender, grades, and gender x grade interaction. This implies statistically significant differences in AFRT factors based on gender, grades, and their interactions considering the father-child relationships. Table 5 presents the results of the tests of between subjects' effects to find the statistical differences based on each factor of the AFRT. Bonferroni adjustment test was used, and thus, comparisons were made at $\alpha \leq 0.008$.

Table 5. Tests of between subjects' effects of differences in AFRT Factors based on children's gender, grades, and their interactions in the father-child model

Source	Sum of Squares	df	Mean Square	F	P	Effect Size
Restrictiveness						
Gender	64.91	1.00	64.91	19.31	0.000	0.032
Grades	94.56	3.00	31.52	9.38	0.000	0.045
Gender x Grades	72.73	3.00	24.25	7.21	0.000	0.035
Error	1993.22	593.00	3.36			
Affection						
Gender	45.85	1.00	45.85	17.32	0.000	0.028
Grades	55.08	3.00	18.36	6.94	0.000	0.034
Gender x Grades	44.88	3.00	14.96	5.65	0.001	0.028
Error	1569.87	593.00	2.65			

Source	Sum of Squares	df	Mean Square	F	P	Effect Size
Vulnerability						
Gender	28.49	1.00	28.49	12.95	0.000	0.021
Grades	10.05	3.00	3.35	1.52	0.208	-
Gender x Grades	32.10	3.00	10.70	4.86	0.002	0.024
Error	1304.78	593.00	2.20			
Justice						
Gender	20.22	1.00	20.22	7.20	0.008	0.012
Grades	72.13	3.00	24.04	8.56	0.000	0.041
Gender x Grades	27.78	3.00	9.26	3.30	0.020	0.016
Error	1665.97	593.00	2.81			
Acknowledgment						
Gender	14.73	1.00	14.73	6.16	0.013	0.010
Grades	74.17	3.00	24.72	10.34	0.000	0.050
Gender x Grades	26.36	3.00	8.79	3.67	0.012	0.018
Error	1418.57	593.00	2.39			
Trust						
Gender	3.85	1.00	3.85	1.21	0.273	-
Grades	57.91	3.00	19.30	6.04	0.000	0.030
Gender x Grades	16.95	3.00	5.65	1.77	0.152	-
Error	1894.25	593.00	3.19			

Table 5 indicates statistically significant differences in Restrictiveness, Affection, and Vulnerability in the father-child relationships based on children's gender and grade interactions since p was ≤ 0.008. Figure 1 illustrates the interactions' effects on these three factors. It is clear from Figure 1 that male and female children perceived their relationships with their fathers differently across different grades. For instance, male children generally perceived their fathers as more restrictive than female children. These perceptions were very high in grade five but decreased in grades seven and nine for both males and females. However, it increased again as male children grew up.

On the other hand, female children generally perceived their fathers as more affectionate than male children. The high perceptions of female children remained stable across grades five to eleven with little changes. In contrast, younger male children perceived their fathers as more affectionate, yet these perceptions dropped off as they grew up. Regarding vulnerability, female children showed higher perceptions of their fathers' vulnerability than their male counterparts. As female children grew up, they perceived their fathers as more vulnerable. On the other hand, while the levels of males' perceptions increased from grade five to seven, they steadily decreased as they moved to grade eleven.

Regarding Justice, statistically significant differences were found based on gender and grade separately, as presented in Table 5. Considering gender, p = 0,008 suggests statistically significant differences between males (M = 7.72) and females (M = 8.10) in their perceptions of their fathers' justice, indicating that female children had higher perceptions. Regarding grade differences, the Sheffe test showed statistically significant differences only between grades seven and eleven (α= 0.000), in which grade seven had a higher mean (M = 8.32) of perceptions towards their fathers' justice compared to grade eleven (M = 7.39).

For Acknowledgment, Table 5 showed statistically significant differences in fathers' acknowledgment only based on children's grades (p= 0.000). The Sheffe test indicated statistically significant differences between grades five (M = 8.30) and eleven (M = 7.54) (p = 0.001) in which grade five children had higher levels of perceptions. Moreover, there were statistically significant differences between grades seven and eleven (p = 0.000) in which grade seven (M = 8.43) children

had higher levels of perceptions towards their fathers' Acknowledgment.

As shown in Table 5, there were statistically significant differences based on grades regarding Trust (p = 0.000). The Sheffe test showed statistically significant differences in children's perceptions of Trust levels between children in grades five and eleven (p = 0.002). Children in grade five (M = 7.63) perceived their fathers as more trusted than children in grade eleven (M = 6.82).

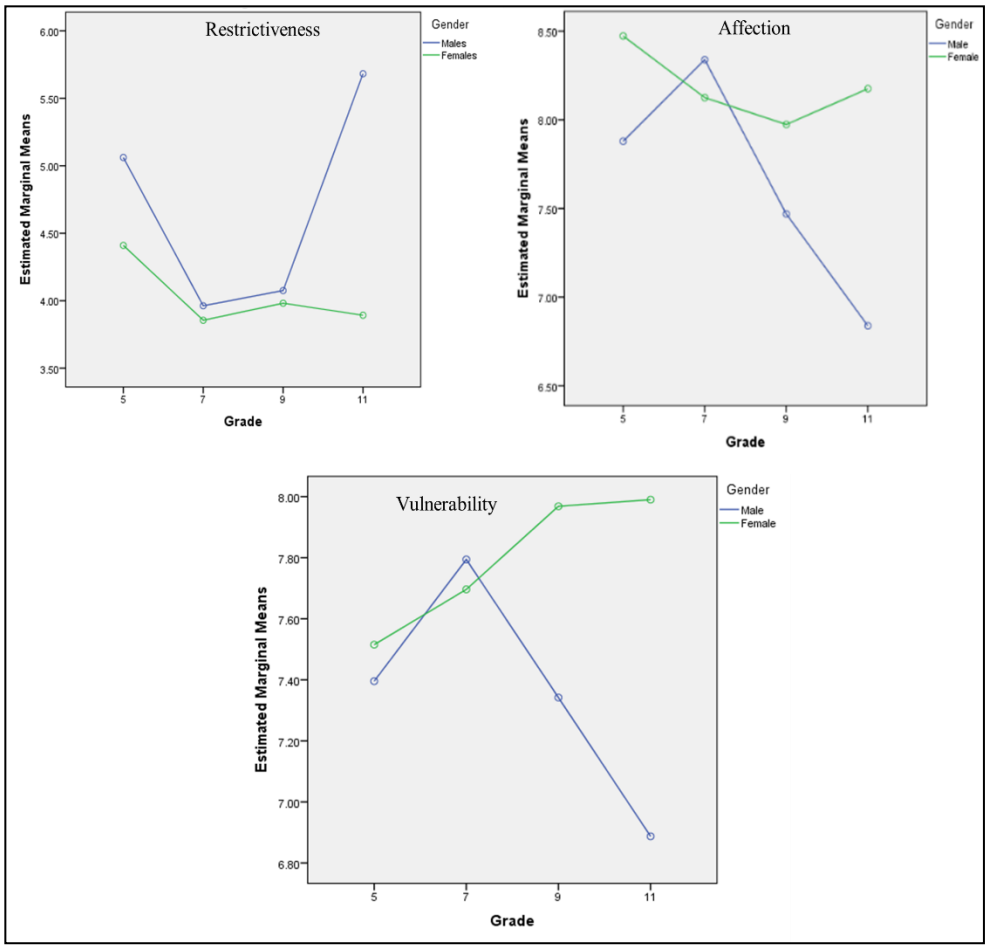

Figure 1: Gender and grade interaction effects in restrictiveness, affection, and vulnerability ; father-child relationship

Differences in Mother-Child Model Based on Gender, Age, and Their Interactions

Regarding the mother-child relationships, One-way MANOVA was conducted to explore the statistical differences in children's perceptions of the AFRT factors based on their age groups. Table 6 presents the descriptive statistics of AFRT factors in mother-child relationships as distributed by grades.

Table 6. Descriptive statistics of the AFRT six factors as distributed by grade groups in the mother-child model

Grades	*N*	Restrictiveness		Affection		Vulnerability		Justice		Acknowledgment		Trust	
		M	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
Five	136	4.75	2.06	8.40	1.36	7.65	1.45	8.28	1.38	8.47	1.28	8.19	1.44
Seven	147	3.91	1.75	8.55	1.44	8.03	1.34	8.35	1.69	8.60	1.43	8.17	1.66
Nine	166	3.98	1.80	8.27	1.44	8.08	1.33	8.26	1.60	8.43	1.47	8.04	1.61
Eleven	152	4.64	1.88	8.03	1.52	7.83	1.47	7.78	1.50	7.87	1.50	7.60	1.58

The one-way MANOVA results showed that Pillai's trace was significant (*Pillai's trace*= 0.14, F= 4.99, *hypothesis df* = 18, *error df* = 1782, *p* =0.000), which suggests significant differences in children's perceptions of their relationships with their mothers based on their grades. In addition, the effect size value (μ^2= 0.048) suggested a small effect size for the differences in the six AFRT factors based on grades. Table 7 displays the differences in AFRT factors separately using tests of between subjects' effects. Note that the Bonferroni adjustment test was used, and thus, comparisons were made at $\alpha \leq 0.008$

Table 7. Tests of between subjects' effects of differences in AFRT factors based on children's gender in the mother-child model

Source		Sum of Squares	df	Mean Square	F	p	Effect Size
	Restrictiveness						
Grades		84.37	3	28.12	7.98	0.000	0.039
Error		2103.394	597	3.52			
	Affection						
Grades		22.13	3	7.37	3.51	0.015	0.017
Error		1252.78	597	2.09			
	Vulnerability						
Grades		17.11	3	5.70	2.90	0.034	0.014
Error		1174.72	597	1.96			
	Justice						
Grades		30.66	3	10.22	4.21	0.006	0.021
Error		1448.31	597				
	Acknowledgment						
Grades		47.25	3	15.75	7.67	0.000	0.037
Error		1225.34	597	2.05			
	Trust						
Grades		33.41	3	11.13	4.45	0.004	0.022
Error		1492.33	597	2.50			

Table 7 shows statistically significant differences in Restrictiveness, Justice, Acknowledgment, and Trust factors of the AFRT based on children's grades. However, no statistically significant differences were reported for Affection and Vulnerability as $p > 0.008$. It is also clear that the effect size values ranged between 0.021 (Justice) and 0.039 (Restrictiveness), which are considered small effect sizes according to Cohen's standards (Lakens, 2013). Sheffe's test of multiple comparisons was conducted to examine the differences between the four grades.

The findings of Sheffe tests showed statistically significant differences ($p = 0.003$) between grades five ($M = 4.75$) and seven ($M = 3.91$), and between grades five and nine ($M = 3.98$), ($p = 0.006$), in Restrictiveness with grade five having higher perceptions of mothers' restrictiveness. On the other hand, statistically significant differences ($p = 0.006$) were found in Acknowledgment between grades five ($M = 8.47$) and eleven ($M = 7.87$), with grade five children showing higher perceptions and between grades seven ($M = 8.60$) and eleven ($p = 0.000$) with grade seven having higher perceptions. In addition, there were statistically significant differences in Acknowlegment between grade nine ($M = 8.43$) and eleven, ($p = 0.007$), with grade nine presenting higher perceptions. However, the Sheffie's test of multiple comparisons demonstrated no statistically significant difference at $\alpha \leq 0.008$ concerning Justice and Trust.

Correlation Between AFRT Factors and Children's Internalizing and Externalizing Behavioral Problems

The following paragraphs answer the third research question: "What are the criterion-related validity indicators of AFRT among Omani school students (grades 5, 7, 9, and 11) as examined by the correlations between AFRT factors and students' externalizing and internalizing behavioral problems?"

Another technique to explore the criterion-related validity of the AFRT is to investigate the correlations between the six factors and children's externalizing and internalizing behavioral problems. Table 8 demonstrates these correlations in the father-child and the mother-child dyads. It is clear from Table 8 that most of the AFRT factors correlated significantly with children's externalizing (i.e., aggression and rebellion) and internalizing (i.e., introversion and anxiety) behavioral problems, which suggests good criterion-related validity. In line with previous literature, the correlations between Restrictiveness and behavioral problems were positive. However, all other five factors (i.e., Affection, Vulnerability, Justice, Acknowledgment, and Trust) correlated negatively with behavioral problems.

Table 8. Correlations between AFRT factors and children's internalizing and externalizing behavioral problems in father-child and mother-child dyads

	Father-child dyad				**Mother-child dyad**			
Factors	**Anxiety**	**Introversion**	**Aggression**	**Rebellion**	**Anxiety**	**Introversion**	**Aggression**	**Rebellion**
Restrictiveness	0.15**	0.31**	0.34**	0.33**	0.19**	0.32**	0.35**	0.33**
Affection	-0.12**	-0.21**	-0.16**	-0.16**	-0.02	-0.15**	-0.19**	-0.17**
Vulnerability	-0.06	-0.19**	-0.22**	-0.18**	0.02	-0.13**	-0.24**	-0.20**
Justice	-0.19**	-0.24**	-0.18**	-0.18**	-0.16**	-0.19**	-0.19**	-0.17**
Acknowledgment	-0.18**	-0.24**	-0.18**	-0.19**	-0.14**	-0.19**	-0.23**	-0.23**
Trust	-0.28**	-0.19**	-0.13**	-0.11**	-0.16**	-0.19**	-0.23**	-0.21**

**Significant at $\alpha \leq 0.01$

Discussion and Conclusion

The current study examined the Arabic Family Relation Test (AFRT) criterion-related validity with its six main first-order factors (i.e., Restrictiveness, Affection, Vulnerability, Acknowledgment, Justice, and Trust). The variables used as criteria were differences in the father-child and the mother-child relationships, differences in children's gender and age, and the correlations between family relationships' factors and internalizing and externalizing behavioral problems.

First, the ability of AFRT to discriminate between the father-child and the mother-child relationships was examined to check whether it is in line with previous studies. The results revealed statistically significant differences between mothers and fathers in the AFRT dimensions. Univariate tests uncovered significant differences in five factors (i.e., Affection, Vulnerability, Justice, Acknowledgement, and Trust), yet no differences were found in Restrictiveness. Mothers presented higher means in all these five factors compared to fathers.

The current study's findings coincide with past studies that approved the criterion-related validity of different family relations tests regarding the differences in the father-child and the mother-child relationships. For instance, similar findings showed that mothers, more than fathers, received higher ratings from their children on Affection, Justice, Acknowledgment, Vulnerability, and Trust, while no differences between the parents were found in Restrictiveness (e.g., Fitriana, 2011; Skoczeń et al., 2015; Skoczeń & Cieciuch, 2012). Some studies also reported the absence of significant differences between fathers and mothers in the authoritarian parenting style, which is similar to restrictive parenting (e.g., Luo et al., 2021); and similar findings were documented as well by some Omani studies (e.g., Alriyami & Aldhafri, 2021; Alsaidi & Aldhafri, 2020; Alsyabi et al., 2021).

Similarly, mothers were rated as more authoritative and showing more supportive practices than fathers (e.g., Abubakar et al., 2015; Uji et al., 2014; Winsler et al., 2005; Zhu et al., 2023). According to Suwada (2021), women have biological and natural aptitude for showing affection, caring, and love. Due to their innate ability and nature, women are inclined to

manage relationships inside the family and to belong in the domestic sphere. Researchers found that the authoritarian mother is the least common parenting style in Oman. They explained that Omani women are known for their kindness, soft nature, and tenderness. More particularly, after the recent developmental changes in Oman, women became keener about knowing and learning about positive parenting and child-rearing (Alriyami & Aldhafri, 2021).

An explanation of the absence of significant differences between mothers and fathers in restrictiveness in this study might be due to the changing roles of fathers and mothers in the present time. Family is a constantly changing and complicated system influenced by social, cultural, and economic shifts. Conventional maternal and paternal roles face successive changes (Suwada, 2021). For example, the ideal image of affectionate mothers and strict fathers faces enormous challenges nowadays (Luo et al., 2021). Hence, in some families, mothers and fathers may practice restrictive roles equally. However, in other cases, fathers tend to display more affection towards their children, while mothers are more restrictive. Supporting this idea, Aldhafri (2021) referred to many studies conducted in non-Western contexts, which found that Arab and Asian parents tend to perform equal authoritarian practices. These practices can be attributed to socialization values in non-Western societies, such as social integrity, obedience, and respect.

Moreover, one plausible explanation for both parents getting the lowest degree of Restrictiveness could be that nowadays, Omani parents are more aware of utilizing positive styles than controlling ones. This increased awareness resulted from many social and family programs targeting families and parents. Many awareness programs, such as lectures and training courses, are conducted these days by different stakeholders in Oman, most popularly, the Ministry of Social Development, the Ministry of Education, counseling centers, and higher education institutions in Oman. Omani parents seem very interested in joining such programs, which has enhanced their knowledge about positive family relationships.

Despite the non-significant differences in Restrictiveness in the current study, some studies reported that fathers were perceived as more authoritarian (e.g., Abubakar et al., 2015; Uji et al., 2014; Winsler et al., 2005) and unjust (Skoczeń & Cieciuch, 2012). Compared to Mothers, the lower rating of fathers in all positive factors of this study may imply that Arab fathers usually tend to be tougher and firmer even if they are not showing excessively restrictive practices. The nature of fathers could be explained as rarely showing affection and love and usually preferring to perform some firm practices with their children. Previous Arabic studies found that children viewed their fathers as more authoritarian (Abubakar et al., 2015; Aldhafri, 2011; Almamari & Aldhafri, 2018) and performed fewer positive practices than mothers (Alqashaan, 2016).

Second, the criterion-related validity of the AFRT was explored through the differences in the father-child and the mother-child relationships based on children's gender, age, and their interactions. As was documented in earlier studies, children's perceptions of their relationships with parents differ based on children's age and gender, which also supported the criterion-related validity of the AFRT (e.g., Aldhafri 2014; Alqashaan, 2016; Moeliono et al., 2018; Oud & Welzen, 1989). The current findings conveyed that in the father-child model, gender and grade interactions were statistically significant in three factors (i.e., Restrictiveness, Affection, and Vulnerability); yet, differences were found based on gender and grades separately in Justice and based on grades only in Acknowledgement and Trust.

It was clear that male children had higher perceptions of their fathers' restrictiveness than female children. Also, male and female grade five children perceived their father as highly restrictive; however, these perceptions changed over different school grades. Likewise, previous studies stated that male children commonly viewed not only fathers but both parents as highly restrictive (e.g., Oud & Welzen, 1989) and more authoritarian (e.g., Someya et al., 2000; Uji et al., 2014). In addition, in Arabic studies, male children had higher perceptions than female children of negative parenting styles practiced by both parents (Aldhafri, 2014; Alriyami & Aldhafri, 2021; Shoaby, 2011). This result highlights the fact that, based on their perceptions, male children are generally exposed to strict or controlling parenting either from both parents or from fathers only. This finding is not limited to Arabic populations but is common in other cultures.

Other essential findings reported by the current data are the different patterns characterized by boys and girls across different ages. While girls and boys viewed their fathers as highly restrictive in grade five, these perceptions were shallow in advanced grades, especially for girls. Still, even though they were low for male students in grades seven and nine, they rose again in grade eleven. This suggests that Omani children perceived their fathers as more restrictive when they are in

early childhood ages, like grade five, and in older ages, like grade eleven- in the case of male children only. Gender and age interaction effects in family relationships were not given much attention in previous studies; however, each effect was studied alone. For instance, in the NFRT, Oud and Welzen (1989) reported no differences between younger and older children in their ratings of fathers' restrictiveness. However, they differed in other test factors and on mothers' restrictiveness. Like the current results, Omani younger students scored their fathers higher in authoritarian styles than older students (Aldhafri et al., 2011). Steinberg and Morris (2001) supported this result by highlighting that parents' authoritarian practices decreased as children got older based on children's perspectives.

Several reasons can justify why male children showed higher perceptions of restrictiveness. One rationale behind that, which is mainly raised by Arab researchers, can be attributed to the way boys are reared in most non-Western societies, with no exception in some Western societies as well. Male children are prepared to build strong personal characteristics reinforcing psychological resilience, taking responsibility, and coping with various life challenges. Parents expect their male children to withstand more strict paternal practices. Conversely, females are treated with more affection and caring due to their personality nature, which demands less toughness in their relationships with their parents. Another justification might be related to how male and female children perceive their parents' practices. It is plausible that male children are more able to report restrictive and unfavorable practices performed by their parents than females can. In all cases, feelings reported by male children towards their fathers or both parents should be given careful attention. Male children should be granted equal love and affection as female children. Also, limited, restrictive parenting should be performed with them; otherwise, those children can look for positive emotions and practices from outside sources (Aldhafri, 2014).

Considering children's age, it was evident in the results that very young male and female children (i.e., Grade 5) felt more fathers' restrictiveness than older children. Boys deviated from this pattern as they also felt a high level of restrictiveness in grade eleven. Consistent with past studies, younger students showed higher scores for fathers' authoritarian parenting than older students (Almamari & Aldhafri, 2018; Alriyami & Alhafri, 2021). On the other hand, Aldhafri et al. (2011) pointed out that older children (i.e., grades 9, 10, 11, 12) perceived higher levels of fathers' authoritarian styles than younger students (i.e., grade 7). Briefly, it can be said that as female children grow up, they share less restrictive relationships with their fathers; yet, male children experience restrictive relationships with their fathers when they are very young and when they are older.

Usually, when children are very young, parents are yet to start shaping the rules inside the family and setting standards to be agreed upon and followed. Thus, they need to be more restrictive, either from the father's or mother's side. When it comes to boys, fathers sometimes ought to practice some restrictive disciplines with their male children as they move to adolescence age. At this age, children start to look for independence and autonomy; hence, sometimes, they attempt to break the family rules and seek some freedom (Aldhafri et al., 2011). Moreover, they are moving towards a new developmental stage as they undergo behavioral and psychological changes. These changes let them feel the importance of showing their self-affirmation and independence (Alriyami & Alhafri, 2021). Therefore, some authoritarian or controlling practices by fathers are needed to keep the family structure as it was set and to ensure that male children still follow the family regulations.

Regarding Affection and Vulnerability factors in the father-child relationships, the interaction effects showed that, generally, female children scored their fathers higher in these two factors compared to male children. Also, younger children showed higher perceptions of their fathers' affection and vulnerability than older children. Considering gender differences in Justice, female children showed higher ratings of their fathers' justice than male children. Regarding grade differences in Justice, Acknowledgment, and Trust, overall findings suggested that younger children rated their fathers higher in these three factors than older children. The higher ratings of younger children in positive father-child relationships were supported by several researchers (e.g., Aldhafri, 2014; Almamari & Aldhafri, 2018; Oud & Welzen, 1989).

Unlike male children, who experienced fewer levels of these factors as they grew up, female children showed higher perceptions when they grew up, especially as noted in Vulnerability and Affection. Unlike older children, younger children need equal love, caring, affection, acknowledgment …etc, because they are still new to their lives and their personalities

are not very strong. They need to feel the support from their fathers as much as they can to enable them to grow up with quality well-being and life adjustment. Also, unlike males, females retain this level of affection and support from their fathers as they grow up because their soft personalities require less harsh and demanding relationships (Aldhafri, 2014; Aldhafri et al., 2011).

Moving to mother-child relationship models, the findings indicated gender differences were in Restrictiveness and Acknowledgment only. Younger children (i.e., grade 5) showed higher perceptions of mothers' restrictiveness than older children (i.e., grades 7 and 9). This relationship pattern is very similar to the Restrictiveness relationship pattern found in father-child relationships, and it aligns with earlier research (e.g., ; Almamari & Aldhafri, 2018; Alriyami & Alhafri, 2021; Moeliono et al., 2018; Oud & Welzen, 1989). As explained earlier, when kids are young, parents establish ground rules or standards that must be adhered to inside the family. As a result, they must be more controlling, either from the mother's or the father's side.

Regarding mothers' Acknowledgment, younger children rated their mothers higher than older children. Previous studies also revealed that younger children rated mothers highly in some positive family relationship factors (e.g., Alriyami & Alhafri, 2021; Moeliono et al., 2018; Skoczeń et al., 2015). Typically, more supportive practices are noticed by younger children as mothers tend to take good care of them when they are very young. Older children may not notice these supportive maternal practices even if they were presented in reality. This is because older children usually want to practice their independence, which sometimes, deceptively, makes them feel that their mothers are not giving them much acknowledgment. In Asian culture, verbal expression of acknowledgment and love is not very common between parents and their children, yet they tend to express support and love through different practices. A study showed that emerging adults perceived instrumental support by parents as an icon of affection in an Asian culture where verbal expression is rare. The young adults emphasized that their perceptions of their parents' support changed over time when they became older and got a clear understanding of their parent's affection, acknowledgment, and sacrifices (Kang & Shih, 2018).

Third, the criterion-related validity of AFRT was also examined through the correlations between the six factors in the test and children's externalizing and externalizing behavioral problems. The findings showed significant positive correlations between Restrictiveness and internalizing and externalizing behavioral problems in both father-child and mother-child dyads. In contrast, significant negative correlations were found between the remaining five factors and internalizing and externalizing behavioral problems also in both dyads. Few exceptions were found, such as Vulnerability with anxiety (i.e., in both dyads) and Affection with anxiety (i.e., in the mother-child dyad), which were not statistically significant correlations.

These findings align with earlier findings that support the same correlations, emphasizing the good criterion-related validity of the AFRT (e.g., Moeliono et al., 2018; Oud & Welzen, 1989; Skoczeń et al., 2015). These frequent results imply that Restrictiveness is one of the harmful and controlling parenting relationship practices that lead to adverse behavioral outcomes among children. However, the provision of all supporting factors: Affection, Justice, Vulnerability, Trust, and Acknowledgment can contribute to better life adjustment among children since they are linked with lower levels of both internalizing and externalizing behavioral problems (e.g., de Maat et al., 2021; Mak et al., 2020; Moeliono et al., 2018; Skoczeń et al., 2015).

However, one remarkable point about the correlations between AFRT factors and behavioral problems should be addressed. The highest correlation coefficients found in the current study were between Restrictiveness and introversion, aggression, and rebellion, with coefficient values higher than 0.30. However, all other correlation coefficients, although significant, were low (i.e., lower than 0.30).

An issue that needs to be elaborated on is the differences between statistical significance and practical significance. Pallant (2010) argued that getting a statistically significant value is not always enough because significance does not indicate the strength of the relationships. The current results showed correlation values ranging between medium and small effect sizes. Therefore, extra investigations of the AFRT's correlations with behavioral problems in different samples and contexts are needed.

Moreover, the measures used to collect data about internalizing and externalizing problems can play a vital role. Therefore, using other measures of behavioral problems could provide different and maybe stronger correlations. In addition, the researchers suggest that further examination of validity indicators is needed by utilizing a larger sample size and age groups and using different criteria.

Several implications can be elicited from the AFRT. Arab researchers can use this test since it is a newly validated tool comprising a wide range of family relationship aspects that previous Arabic instruments have not addressed. Moreover, the AFRT is a practical test for educators, psychologists, and counselors contributing to family relationship assessment programs and interventions. Furthermore, the test was mainly designed to target other dyads inside the family, such as husband-wife, child-siblings, and parent-grandparents (Oud & Welzen, 1989; Skoczeń et al., 2015). Thus, it is practical for a broad and deep understanding of family relationships. In addition, the AFRT can be used for older students, such as undergraduate students, after adaptation and validation.

In conclusion, the AFRT is a new, validated, and promising family assessment test that can be utilized by researchers and practitioners in Arabic environments. However, as a new test, extra examinations and validations are essential.

Declaration of Interest

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Data availability

dataset produced and evaluated in this research can be obtained upon reasonable inquiry from the corresponding author.

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