

Mate Choice in Adolescence: Idealizing Romantic Partners

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ABSTRACT

A number of studies suggest a universal pattern for mate choice preferences in humans, with striking sex differences. Filling a gap in the study of mate choice, we identified relevant characteristics in potential mates during adolescence and assessed their level of importance. Our samples were made up of 467 Brazilian students, and by using an open questionnaire and a Likert scale, we observed sex differences and the assessments of the degree of importance for some factors. However, similarities between the sexes also emerged in our analysis. The use of an open questionnaire allowed us to update the list of traits considered important by adolescents during mate choice, as well as to adapt the instrument that evaluates the importance of these traits to the vocabulary and preferences of adolescents, thus contributing to the understanding of adolescent reproductive behavior.

Keywords: Sexual selection; human mate selection; human sex differences; interpersonal relationships; evolution.

RESUMO

Escolha de Parceiro na Adolescência: Idealizando Parceiros Românticos

Vários estudos sugerem um padrão universal para as preferências na escolha de parceiros em humanos e diferenças sexuais marcantes. Preenchendo uma lacuna no estudo da escolha de parceiros, nós identificamos características relevantes em parceiros em potencial durante a adolescência e avaliamos o nível de importância das mesmas. Nossas amostras foram compostas por 467 estudantes brasileiros e, através do uso de um questionário aberto e de uma escala Likert, nós observamos as diferenças sexuais e as avaliações do grau de importância para alguns fatores. No entanto, similaridades entre os sexos também emergiram durante as análises. O uso de um questionário aberto permitiu uma atualização na lista de traços considerados importantes pelos adolescentes durante a escolha de parceiro, e adaptar o instrumento que avalia a importância desses traços ao vocabulário e à preferências dos adolescentes, contribuindo com a compreensão do comportamento reprodutivo dos mesmos.

Palavras-chave: Seleção sexual; seleção de parceiro em humanos; diferenças sexuais em humanos; relacionamentos interpessoais; evolução.

RESUMEN

Selección de Pareja en la Adolescencia: Idealizando las Parejas Románticas

Varios estudios sugieren un criterio universal de preferencias en la selección de pareja en humanos y marcadas diferencias entre los sexos. Llenando un vacío en el estudio de la selección de pareja, identificamos las características relevantes de las parejas potenciales durante la adolescencia y evaluamos el nivel de importancia de las mismas. Nuestras muestras se han compuesto por 467 estudiantes brasileños, y mediante el uso de un cuestionario abierto y una escala Likert, observamos diferencias entre los sexos y las evaluaciones del grado de importancia atribuida a algunos factores. Sin embargo, similitudes entre los sexos también surgieron durante el análisis. El uso de un cuestionario abierto permitió una actualización en la lista de características consideradas importantes por los adolescentes durante la selección de pareja, y adaptar el instrumento para la evaluación de la importancia de estos rasgos en el vocabulario y hacia las preferencias de los adolescentes, contribuyendo a la comprensión del comportamiento reproductivo de los mismos.

Palabras clave: Selección sexual; selección de pareja en humanos; diferencias sexuales en humanos; relaciones interpersonales; evolución.

INTRODUCTION

Numerous studies have been conducted in an attempt to understand the sexual selection process. It has been suggested that some mate choice patterns are universal, based on the choice of characteristics in potential mates preferred by both sexes, such as courtesy and amiability (Buss and Barnes, 1986). Characteristics assessments also show sex differences, such as female preference for mates with earning potential, in contrast to male preference for female physical appearance (Buss, 1989; Li, Bailey, Kenrick and Linsenmeier, 2002). The preference for a mate's age also shows sex differences. Kenrick and Keefe (1992) described adult age preferences using the assessment of ideal and real mates. They found that women, regardless their own age, preferred slightly older mates. On the other hand, men did not exhibit a well-defined preference at the onset of reproductive life; the difference between their age and their mate's age does increase over time, showing male preference for younger women. These findings have been replicated and corroborated over the time (Buunk, Dijkstra, Fetchenhauer and Kenrick, 2002; Campos, Otta and Siqueira, 2002; Chang, Wang, Shackelford and Buss, 2011; Hayes, 1995; Otta, Queiroz, Campos, Silva and Silveira, 1999; Pawlowski, 2000; Schwarz and Hassebrauck, 2012; Skopek, Schmitz and Blossfeld, 2011; Spinelli, Hattori and Sousa, 2010). However, some characteristics, such as good humor, seem to be important to both sexes at the beginning of reproductive life (Hattori, 2009). In adulthood, women value this characteristic much more than men (Bressler and Balshine, 2006).

The investigation of the importance of specific characteristics in the mate choice process in adults has been discussed in relation to its adaptive value, such as the mate's body odor as a possible attraction clue (Rantala, Eriksson, Vainikka and Kortet, 2006; Santos, Schinemann, Gabardo and Bicalho, 2005), floating asymmetry, indicating the quality of development (Jasienska, Lipson, Ellison, Thune and Ziolkiewicz, 2006; Rhodes, Simmons and Peters, 2005) as well as shoulder-to-hip and waist-to-hip ratios, reflecting preferences for physical attractiveness indicative of high fertility (Jones et al., 2005; Rozmus-Wrzesinska and Pawlowski, 2005). In addition to assessing the personal characteristics of a potential mate, researchers have also evaluated those that influence the quality of the interpersonal relationship with ideal mates, such as faithfulness and commitment, traits that influence mate assessment, especially for long-term relationships (Becker, Sagarin, Guadagno, Millevoi and Nicastle,

2004; Castro, Hattori and Lopes, 2012; Collins, Welsh and Furman, 2009; Marlowe, 2004).

As we know, in order to reproduce, an individual must make effort to survive to reproductive age, then make mating effort (which includes mate choice process) and parental effort. Thus, the willingness to invest in reproduction (mating and parental effort) can also be used to assess one's mate value. The individual variation in the amount of effort devoted to each of these tasks appears to be influenced by the social context and the availability of resources during development. Variations of development environment can contribute to different patterns of attachment to parents, leading the development of different reproductive strategies later in adulthood (Belsky, Steinberg and Draper, 1991). Belsky (1997) proposed that different attachment patterns represent central features of reproductive strategies by promoting fitness gains in different ecological niches, which means that different attachment style would lead to different reproductive strategy. Although, controversial findings on sex differences in romantic attachment, some studies on sex differences presented an age-related decline (Del Giudice, 2009; Schmitt et al., 2003). In fact, a meta-analysis demonstrated that sex differences in early-adulthood showed a peak around 25 years old for anxiety and a linear increasing for avoidance (Del Giudice, 2011).

In an attempt to integrate factors that contribute to the adoption of a particular reproductive strategy, studies on sex differences and personality have been conducted. The results show consistent sex differences (Del Giudice, Booth and Irwing, 2012; Weisberg, DeYoung and Hirsh, 2011) across ages (Feingold, 1994), sex and age difference on personality traits with an especial implication of pubertal changes (Soto, John, Gosling and Potter, 2011), and an influence of the development level of human society, showing a ecological adjustment as attachment patterns did (Schmitt, Realo, Voracek and Allik, 2008).

Considering the numerous factors that influence reproductive behaviors, a number of questions have emerged about the mate choice process during adolescence. Are the characteristics that are deemed important in adulthood already considered so in adolescence? How the sex differences are presented at the onset of reproductive life? Despite earlier studies on human reproductive behavior, there is a scarcity of investigations with adolescents (Collins et al., 2009). Studies to date have focused on determining the characteristics and influences of interpersonal relationships on development (Collins, 2003) or seeking patterns to describe them (Overbeek, Ha, Scholte,

Kemp and Engels, 2007). The difficulty in conducting research with adolescents perhaps is one of the reasons for the dearth of studies with this age group. However, according to Weisfeld (1999), the investigation of changes in adolescence is of great importance, given that part of sex differentiation emerges precisely at this time of life.

In an attempt at filling some of the gaps, we sought to identify traits considered important during mate choice. In addition, we evaluated the degree of importance of these traits, enabling the construction of instruments to assess the mate choice process in adolescence. These first two steps compose the descriptive part of this study. We also made sex comparison looking for sex differences and similarities patterns already found in earlier studies with adults (Buss, 1989; Furnham, 2009; Geary, Vigil and Byrd-Craven, 2004). We hypothesized that adolescents would show mate choice patterns similar to adults, since individuals are biologically able to procreate in this initial period of reproductive life.

METHOD

Participants

We invite students from a public and a private school. Our samples were composed by 467 students, aged between 12 and 19 years, from the city of Natal, Brazil, divided into two samples: Sample 1: 108 girls (M age=15.35 years, SD=1.78) and 56 boys (M age=15.84 years, SD=1.66); Sample 2: 201 girls (M age=15.88 years, SD=1.96) and 102 boys (M age=15.87 years, SD=1.97).

Procedure

For both samples, we applied the instruments after approval was obtained from the Research Ethics Committee (REC) of the Federal University of Rio Grande do Norte, and consent from the school principals, adolescents and their parents. We invite all students enrolled in the last two grades of elementary school and three in high school grades in both schools, using two copies of a term of informed consent (one to be held by the participant's parents or guardians; one to be returned to the researcher). Those who would like to participate and obtained the consent of parents or guardians composed our samples. The students completed the instruments individually, on a volunteer and non-remunerated basis. On average, the Instrument 1 took 15 minutes to be completed, and the Instrument 2, 30 minutes. The application took place in a separated class, so those who did not want to participate or did not obtained the consent of parents or guardians had no contact with the research instruments (REC requirement).

We used two instruments to collect the traits that adolescents consider important in potential mates (Instrument 1) and to assess the importance of these traits (Instrument 2). The results of Instrument 1 (Sample 1) were quantified and categorized to build Instrument 2, which was applied to Sample 2. In both instruments we asked the adolescents to provide their sex and age.

Instrument 1 was an open questionnaire containing the following statement: "Please fill in the spaces below with the traits that you consider most attractive in a person for a short or long-term relationship. The responses are personal. Fill in each line with only one trait". Below this statement were 15 lines to be filled in with the preferred traits, divided into three categories: "physical traits", "behavioral traits" and "other traits". The third category consisted of traits that did not fit into the previous categories, according to the opinion of the participants. The subjects were instructed to include up to five traits for each category.

In Instrument 2, we used a five-point Likert scale with 60 items to assess the degree of importance of the physical traits, behavioral traits, and personal and social habits (from Instrument 1 "other traits") of potential mates. The values attributed varied from "I do not like it/this trait is not important" to "I like it very much/this trait is very important".

Statistical Analyses

For Instrument 1, we grouped the responses by categories and compared the frequencies between sexes using the Mann-Whitney test. Non-parametric tests were applied because the sexes frequencies did not match parametric assumptions. For the analysis of Instrument 2, we used Factorial Analysis with Principal Component extraction method and Varimax rotation method. We used Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity as global diagnostic indicators in order to check if the correlation matrix was factorable. To determine the total explained variance of the sample by response interdependence, we considered an eigenvalue limit greater than or equal to 1 to determine the number of factors analyzed. We considered traits with weights of at least |0.30| to make up the factors and measures of sample adequacy greater than or equal to 0.5 (anti-image correlation matrix) for each item on the scale. Using the regression coefficient of each factor (dependent variable), obtained by factorial analysis, we applied the univariate GLM test to determine differences between the sexes (independent variable) in relation to the importance attributed to the traits that make up each of the factors. The significance level adopted was less than or equal to 5%.

RESULTS

The open questionnaire

We obtained 2,247 answers for the important traits of a potential mate. Of these, 763 were physical traits, 1,015 were behavioral traits and 469 were other traits. We com-

pared intersex frequencies for each category, observing a significant difference for “behavioral traits”, which girls reported more frequently than boys ($U=1,972.5$, $z=-3.25$, $p=.001$). “Physical traits” ($U=2,555$, $z=-1.16$, $p=.247$) and “other traits” ($U=2,416$, $z=-1.64$, $p=.102$) showed no significant differences.

TABLE 1

Description of factors according to eigenvalues, explained variance (%), accumulated explained variance (%), number of items per factor, composition of factors, and weight of each item. For the comparison test between sexes: test value (F), significance level (p) and difference between the means (mean of the girls minus mean of the boys). Sexual differences in the factors are represented by the continuous line boxes (girls) and dotted line boxes (boys); the factors not contained within boxes showed no differences between the sexes.

Factor	1	2	3	4	5	6	7	8
Eigenvalue	3.24	2.76	2.64	2.62	2.49	2.47	2.32	2.20
Explained Variance (%)	5.90	5.01	4.81	4.76	4.52	4.49	4.22	3.99
Number of items	5	3	5	5	4	5	3	4
Friendship and companionship	0.80							
Affectivity and kindness	0.71							
Amiability and courtesy	0.66							
Cooperation and helpfulness	0.60							
Understanding and patience	0.53							
Non-smoker		0.94						
Non-illicit drug user		0.91						
Non-alcohol consumer		0.78						
Buttocks			0.76					
Legs			0.72					
Body shape			0.60					
Breasts			0.58					
Waist and hips			0.51					
Same musical taste				0.76				
Same taste in sports				0.74				
Same religion				0.59				
Skin color				0.45				
Family approval				0.41				
Honesty and sincerity					0.79			
Faithfulness and loyalty					0.75			
Maturity and responsibility					0.44			
Intelligence and wisdom					0.33			
Good body odor						0.83		
Good kisser						0.72		
Desirable and interesting						0.54		
Style and appearance						0.38		
Sensuality						0.38		
Experience in mate choice							0.80	
Morality and reputation							0.61	
Discretion and subtlety							0.46	
Good humor and fun-lovingness								0.80
High-spiritedness and extroversion								0.71
Self-confidence and boldness								0.42
Friendliness and sociability								0.33
Univariate GLM								
F	5.85	3.36	21.14	0.70	2.12	7.70	4.00	0.02
p	0.02	0.07	0.00	0.40	0.15	0.01	0.05	0.90
Difference between means	0.35	0.27	-0.65	0.12	0.22	0.41	-0.29	0.02

continue

TABLE 1 (cont.)

<i>Factors</i>	9	10	11	12	13	14	15	16	17
Eigenvalue	2.14	1.91	1.82	1.79	1.75	1.74	1.69	1.48	1.42
Explained Variance (%)	3.90	3.48	3.32	3.26	3.18	3.17	3.08	2.69	2.58
Number of items	3	2	2	2	3	3	2	2	1
Good dancer	0.75								
Fondness for parties	0.75								
Experience in relationships	0.45								
Sexual performance		0.75							
Genitalia		0.73							
Eyes and eye contact			0.80						
Smile			0.53						
Weight				0.70					
Stomach				0.61					
Teeth					0.75				
Good breath					0.62				
Mouth					0.43				
Back and shoulders						0.71			
Jealousy						0.66			
Arms						0.40			
Determination and objectivity							0.68		
Behavior and civility							0.43		
Height								0.81	
Hair								-0.35	
Being a virgin									0.81
Univariate GLM: regression coefficient and sex									
F	6.24	15.54	6.89	0.02	5.46	14.63	6.14	22.23	2.57
<i>p</i>	0.01	0.00	0.01	0.90	0.02	0.00	0.01	0.00	0.11
Difference between means	0.37	-0.57	0.38	-0.02	0.34	0.55	0.36	0.67	-0.24

The Scale

The first factorial analysis of the 60-item Likert scale showed that the items “quiet and shy”, “financial condition”, “hands”, “nose”, “feet” and “voice” obtained measures of sample adequacy of less than .5 (anti-image correlation matrix), indicating that the inclusion of these items did not allow the formation of factors that satisfactorily described the response variation of the participants. For this reason, these items were discarded and a new factorial analysis was carried out with 54 items, which continued to show measures of sample adequacy above .5 in this new analysis. Global diagnostic indicators showed that the correlation matrix is factorable (KMO: $\alpha = .716$; Bartlett: $\chi^2 = 4,503.4$, $df = 1,485$, $p \leq .001$). An assessment of scale items showed the formation of 17 factors, which explain 66.34% of the total sample variance. A comparison of the regression coefficient measures of each factor showed sex differences for some factors, but not for others, and it allowed us to arrange the factors into 3 groups: no sex difference, girls’ interest, and boys’ interest (Table 1).

It can be observed that factors 2, 4, 5, 8, 12, and 17 showed no sex differences in relation to the mean values of the regression coefficients obtained by factorial analysis. Factor 2 (health habits) consisted of the traits “non-smoker, non-illicit drug user and non-alcohol user”; factor 4 (general similarities) was composed of the traits “same musical taste, same taste in sports, same religion, skin color and family approval”; factor 5 (good character) comprised the traits “honesty and sincerity, faithfulness and loyalty, maturity and responsibility, and intelligence and wisdom”; factor 8 (good humor) consisted of the traits “good humor and fun-lovingness, high-spiritedness and extroversion, self-confidence and boldness, friendliness and sociability”; factor 12 (weight) was composed of the traits “weight and stomach”; and factor 17 (chastity) consisted only of the trait “being a virgin”.

Among the factors showing sex differences are factors 1, 6, 9, 11, 13, 14, 15, and 16, which were reported by the girls as being more important. Factor 1 (reliability) was composed of the traits “friendship and companionship, affectivity and kindness,

amiability and courtesy, cooperation and helpfulness and understanding and patience”; factor 6 (desirability) consisted of the traits “good body odor, good kisser, desirable and interesting, style and appearance, and sensuality”; factor 9 (social habits) comprised the traits “good dancer, fondness for parties and experience in relationships”; factor 11 (facial features) was composed of the traits “eyes, eye contact and smile”; factor 13 (oral hygiene) was composed of the traits “teeth, good breath and mouth”; factor 14 (male traits 1) comprised the traits “back and shoulders, jealousy and arms”; factor 15 (civility) consisted of the traits “determination and objectivity and behavior and civility”; and factor 16 (male traits 2) was composed of the traits “height and hair”.

Factors 3, 7, and 10 were reported as being the most important by the boys. Factor 3 (female traits) was composed of the traits “buttocks, legs, body shape, breasts, and waist and hips”; factor 7 (mate selectivity) comprised the traits “requirements for mate choice, morality and reputation, and discretion and subtlety”; finally, factor 10 (sexuality) consisted of the traits “sexual performance and genitalia”.

DISCUSSION

The use of an open questionnaire allowed us to update the list of traits considered important by adolescents during mate choice, and adapt the instrument that evaluates the importance of these traits to the vocabulary and preferences of adolescents. For example, the trait “household skills” was present on the list of traits evaluated over decades (Buss, 1989; Hill, 1945; Hoyt and Hudson, 1981; Hudson and Henze, 1969; McGinnis, 1958), but was not reported as an important trait in adolescent responses on our first instrument. As observed in other studies with adults, traits related to financial condition are not of great importance to men (Buss, 1989), and sex differences seem to persist even when their mate earns a higher income (Moore, Cassidy, Smith and Perrett, 2006). However, we underscore that the interest of adolescents for earning skills did not fit the grouping of traits that formed the factors, as previously shown in studies with adults (Borgerhoff Mulder, 1990; Buss, 1989; Castro and Lopes, 2011; Li et al., 2002). Accordingly, the trait “financial condition” was removed from our analyses. These examples illustrate traits that do not arouse interest in adolescents because they do not consider them important. Since most adolescents are not required to support a household, they show little or no concern for financial matters at the time of mate choice. It is worth remembering that adolescents may indicate the

same degree of importance during the assessment of traits reported on the second instrument, given that it is a Likert scale, but we observed a wide variation in responses in the following description of sex similarities and differences.

Sexual similarities

According to exploratory analyses, which showed similar interest in “physical traits” and “other traits”, we observed that adolescents generally gave similar importance to certain traits in the assessment of health habits, character and humor. This set of factors (including chastity and general similarities) demonstrates the concern of adolescents, regardless of sex, for relevant traits in a mate.

We found that the great importance given to health traits suggests investment in a mate that does not bring health problems to the relationship, such as sexually transmissible diseases, and that can contribute to the production of healthy children. Indeed, good health might be linked to a partner’s reproductive value (Gangestad and Simpson, 2000; Hamilton and Zuk, 1982). Moreover, this set of traits points to qualities that promote the establishment of romantic relationships; for example, when good character, good humor and cultural similarities (daily activities) are equally valued by both sexes. The traits grouped into general similarities may reflect the interest of these adolescents in certain traits shared by the social group, which has been suggested as an important reference during this period of life (Connolly, Craig, Goldberg and Pepler, 2004). Preferring mates with similar habits and social values may facilitate assessment of the potential mate, approximation and compatibility, resulting in less conflicting relationships (Alvarez and Jaffe, 2004; Buston and Emlen, 2003; Lutz-Zois, Bradley, Mihalik and Moorman-Eavers, 2006; Morry, 2005).

Sex differences

In addition to the aforementioned similarities, sex differences also emerged in exploratory and confirmatory analyses. We observed no sex differences in the number of “physical traits” on the open questionnaire. However, intersex comparison for each factor on the scale showed that boys valued “physical traits” more than girls, as we can observe in the factors valued more highly by the boys: female physical traits, selectivity and sexuality. A similar pattern was observed in a study with adults, which suggests that men prioritize a mate’s physical attractiveness, over her wealth (Li et al., 2002). Furthermore, showing preference for female physical attractiveness suggests that boys use these traits as a means of identifying the sexual

maturity of potential mates. These preference patterns for particular traits in potential mates suggest that, in addition to traits of common interest to both sexes, boys also assess potential mates by virtue of their reputation. In the ultimate analysis, as widely suggested in the literature, choosing a partner with a good reputation might decrease paternal uncertainty (Buss, 2002).

Initial exploratory analysis showed that girls were more interested in “behavioral traits” compared to their male counterparts. Factor analysis of these preferences showed that girls were concerned about a greater number of factors (eight) than boys (three). Among the factors given greater importance by the girls were the reliability, desirability and social habits of their potential mates. These traits indicate an interest not only in establishing but also in maintaining relationships.

Buss and Schmitt (1993) suggest that younger individuals and those that are between one long-term relationship and another are more disposed to use short-term relationships as a strategy for evaluating their own value as a mate and that of their partner in a new relationship than older persons or those involved in long-term relationships. In adolescents, this disposition can be confirmed by their interest in having romantic and/or sexual experiences. These experiences require the creation of bonds (Adams, Laursen and Wilder, 2001), especially for girls, and sex similarities point to the search for mates with similar traits that facilitate the formation and maintenance of the relationship. Therefore, having some sex similarities seems to be part of the strategy in the search and retention of potential mates. Moreover, the traits that show differences in the assessment of boys and girls also suggest the search for potential mates that meet specific needs. Finally, we suggest that girls seek mates for lasting romantic experiences, whereas boys seek sexual experiences. However, both sexes look for social support in their potential romantic mates.

In sum, this study provides a new assessment of mate choice in adolescence, by determining the traits that adolescents consider important in potential mates and assessing the importance of these characteristics. This method allowed us to update a set of traits used in previous research with adults and describe adolescent preferences with respect to idealized romantic mates, showing sex differences and similarities. Finally, we present a set of traits that might be used to answer further questions that arise in future studies on mate choice in adolescence.

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