

Parenting Styles among Single-Child and Multi-Child Mothers: A Cross-Sectional Study in Arak, Iran



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Abstract:

Introduction: Parenting styles, as defined by Baumrind's dimensions of responsiveness and demandingness, critically influence child development.

Aim: This study aimed to compare parenting styles in single-child and multi-child mothers who referred to healthcare centers in Arak, Iran.

Material and Methods: A descriptive-cross-sectional study was conducted in 2025 on 214 mothers (107 with one child, 107 with two or more children recruited from Arak healthcare centers via cluster random sampling. Participants completed the Baumrind Parenting Styles Questionnaire. Data were analyzed using SPSS26 with non-parametric tests: the Mann-Whitney U test to compare parenting style scores between groups and the Kruskal-Wallis and Chi-Square tests for demographic comparisons.

Results: Significant differences in parenting styles were found based on the number of children. Mothers with a single child scored significantly higher on the authoritarian style (29.45 ± 5.867 vs. 10.88 ± 5.159 , $p < 0.001$). In contrast, mothers with multiple children scored significantly higher on the permissive style (30.06 ± 6.567 vs. 11.23 ± 5.697 , $p < 0.001$). No significant difference was observed in the authoritative style ($p = 0.816$). Demographic variables like parental age and education did not determine style inclination.

Discussion: The findings of this study indicate that the number of children in a family is a significant factor associated with maternal parenting styles in the Iranian context of Arak.

Conclusion: These results highlight the need for tailored parental education programs to support both single-child and multi-child families in adopting balanced parenting strategies.

Keywords: Iran, Childbirth, Child order, Parenting, Reproductive health, Tailored parental education programs.

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1. INTRODUCTION

Diana Baumrind, a clinical and developmental psychologist, initiated extensive research on preschool-aged children and their parents in the 1960s. She observed that different parental approaches significantly influence children's behavior and personality. Baumrind's theory is based on two primary dimensions of parental behavior:

Responsiveness: The degree to which parents are sensitive and receptive to their child's emotional and developmental needs. This dimension encompasses parental warmth, affection, and support.

Demandingness: The degree to which parents expect mature and responsible behavior from their children and, to achieve this goal, establish and enforce rules and limitations.

Based on the combination of these two dimensions, Baumrind identified four main parenting styles: Authoritarian (high demandingness, low responsiveness), Permissive (low demandingness, high responsiveness), Authoritative (high demandingness, high responsiveness), and Uninvolved/Neglectful** (low demandingness, low responsiveness) [1, 2].

The foundation of parenting styles is parents' efforts to control and socialize their children. Parents strive to transmit the norms and values of their society to their children [3, 4]. Parenting styles can be described as parental behaviors that shape children's behavioral and emotional patterns across various domains, such as decision-making, conflict resolution, managing expectations, and adherence to rules, throughout their lives [3]. Numerous studies indicate that parenting styles significantly impact children's social skills; for instance, a democratic parenting style is positively associated with the development of social skills, whereas permissive and authoritarian styles are negatively associated [5]. Another study found that children with higher problem-solving skills in science were more likely to have been raised by parents who employed an authoritative parenting style [6]. Specifically, warm and supportive parenting enhances self-regulatory abilities, fosters social behaviors and moral values, and increases adolescents' acceptance of others' needs [2]. Findings indicated that perceived authoritarian fathering was significantly associated with higher levels of anxiety and lower levels of resilience, whereas authoritative parenting was linked to the most favorable psychological outcomes [7].

Another study found that only-child adolescents experienced less warm ($\beta = -0.54, p < 0.001$) and trust-encouragement ($\beta = -0.34, p < 0.01$) parenting styles and had shorter parental companionship time ($\beta = -0.26, p < 0.001$). Middle-child adolescents had higher scores on peer relationship symptoms and more permissive parenting styles. Last-born adolescents were more likely to experience indulgent parenting styles [8]. According to the overall meta-analysis results, authoritative parenting had the potential to reduce sibling conflicts. Neglectful, inconsistent, indulgent, and authoritarian parenting styles were positively associated with sibling conflicts [9]. One

study showed that permissive and passive parenting styles increased the likelihood of sibling rivalry; however, this association was not statistically significant [10].

Iran has undergone one of the most rapid fertility transitions in recent decades, with fertility declining from high to below-replacement levels [11-13]. The country's Total Fertility Rate (TFR) decreased from 6.2 births per woman in 1986 to 2.5 in 1996 and further to 1.8 in 2011, remaining below the replacement level of 2.1 births per woman [14-16]. This demographic shift has been accompanied by a substantial reduction in the annual population growth rate, from 3.9% in 1986 to 1.2% based on the 2016 national census.

Given the increasing prevalence of single-child families in Iran and other countries, it is essential to understand the dominant parenting styles to which these children are exposed. Since parenting style plays a significant role in shaping their future mental health [17, 18], identifying these patterns can contribute to the prevention of psychological problems in adulthood among future generations. Furthermore, policymakers in the field of family health need to identify the prevailing parenting styles within these families in order to design and implement appropriate parenting education programs for prospective parents. Therefore, this study aims to investigate the relationship between the number of children and the selection of parenting styles by parents, specifically mothers.

2. METHODS

2.1. Study Design and Population

This research was a descriptive-cross-sectional study conducted in 2025 in the city of Arak. The statistical population consisted of all mothers with one child, two children, or more, who had an electronic health record in the Integration Health System.

2.2. Setting Study

The study was conducted in healthcare centers in the city of Arak.

2.3. Inclusion and Exclusion Criteria

214 mothers participated in this study. Inclusion criteria were mothers aged 18 to 40 years, with one or more children aged 5 to 7 years, and who had not separated from the child's father. Participants were excluded from the study if they became pregnant or withdrew from further cooperation.

2.4. Sample Size

Based on the study by Navabakhsh *et al.*, to achieve the study objectives and compare the mean parenting style score with a maximum error of $\alpha = 0.05$ and 80% power, a sample size of 107 individuals per group was determined [19]. Other sample size determination values are provided below:

$$d = \mu_1 - \mu_2 = 2.12, 1 - \beta = 0.9$$

2.5. Sampling Method

The sampling method was cluster random sampling. The list of urban health centers in Arak was obtained through the Arak Province Health Center. The city was then divided into four areas (north, west, east, and center), and from the comprehensive urban centers located in these areas, four centers were randomly selected (*via lottery*). It should be noted that from each center, 50-60 individuals were entered into the study using convenience sampling.

2.6. Instruments

This study utilized Baumrind's Parenting Questionnaire. The questionnaire comprises 30 items, divided equally into three 10-item scales measuring authoritative, authoritarian, and permissive parenting styles. Responses are collected on a five-point Likert scale, ranging from "totally agree" to "totally disagree," with corresponding scores from 0 to 4 for each item. In its Farsi form, the Baumrind Parenting Styles Questionnaire has established test-retest reliability, with values of 0.73 for the authoritative subscale, 0.77 for the authoritarian subscale, and 0.69 for the permissive subscale [20].

2.7. Implementation

After obtaining an introduction letter and an ethical approval code from the Vice Chancellor for Research of Arak University of Medical Sciences, the researcher visited the designated centers. Following an introduction of the research objectives, a list of eligible individuals was prepared from the "SIB" system, and these individuals were subsequently contacted by phone. Upon their agreement and after an in-person visit, obtaining written informed consent, and explaining the research objectives, they were asked to complete the Baumrind Parenting Styles Questionnaire.

2.8. Statistical Analyses

The data were then analyzed using SPSS26 statistical software and descriptive and analytical statistics. The non-parametric Kruskal-Wallis test was used to compare parenting styles between single-child and multi-child groups with respect to age, education level, and marriage duration. The Mann-Whitney U test was used to compare the mean parenting styles between single-child and multi-child mothers. Additionally, Spearman's test was used to examine the correlation between parenting style and the education levels of the women and their spouses, as well as age at marriage.

3. RESULTS

Demographic information and marriage-related characteristics of the participants, including age, education, marriage duration, and parental age at marriage, are presented descriptively. The statistical population consisted of 214 mothers with children in Arak, categorized into two equal groups: 107 mothers with one child and 107 mothers with two or more children.

In the one-child parent group, the mean age of fathers was 34.43 (± 5.921), and in the group with two or more children, it was 40.75 (± 6.341). For the authoritarian parenting style, the mean score in the one-child group was 29.45 (± 5.867), and in the group with two or more children, it was 10.88 (± 5.159) ($p = 0.001$) (Table 1).

Table 1. Quantitative demographic characteristics of participants.

Variable	Group	Mean (Standard Deviation)
Husband's age	One Child	34.43 (± 5.921)
	Multiple Children	40.75 (± 6.341)
Woman's age	One Child	31.00 (± 4.682)
	Multiple Children	37.06 (± 3.644)
Husband's age at marriage	One Child	27.39 (± 5.741)
	Multiple Children	28.82 (± 5.840)
Woman's age at marriage	One child	23.96 (± 4.367)
	Multiple children	25.13 (± 4.409)
Husband's Education Level (Number (Percent))		
Group	Education Level	Number (Percent)
One child	Illiterate	2 (1.9%)
	High School Diploma	66 (61.7%)
	Associate Degree	10 (9.3%)
	Bachelor's Degree	21 (19.6%)
	Master's/PhD	8 (7.5%)
Multiple children	Illiterate	6 (5.6%)
	High School Diploma	80 (74.8%)
	Associate Degree	4 (3.7%)
	Bachelor's Degree	13 (12.1%)
	Master's/PhD	4 (3.7%)
Women's Education Level (Number (Percent))		
Group	Education Level	Number (Percent)
One child	Illiterate	3 (2.8%)
	High School Diploma	77 (72.0%)
	Associate Degree	8 (7.5%)
	Bachelor's Degree	14 (13.1%)
	Master's/PhD	5 (4.7%)
Multiple children	Illiterate	6 (5.6%)
	High School Diploma	80 (74.8%)
	Associate Degree	5 (4.7%)
	Bachelor's Degree	14 (13.1%)
	Master's/PhD	2 (1.9%)

For the authoritative and reassuring style, the mean score in the first group was 17.79 (± 6.476) and in the second group was 17.97 (± 6.720) ($p = 0.816$).

Finally, for the permissive style, the one-child group had a mean of 11.23 (± 5.697), and the group with two or more children had a mean of 30.06 (± 6.567) ($p = 0.001$) (Table 2).

Spearman's test indicated that parental demographic variables, including age and education, and age at marriage, did not play a determining role in the inclination

towards different parenting styles, neither in single-child families nor in multi-child families.

Table 2. Comparison of mean parenting style scores in single-child and multi-child women.

Parenting Style	Group	Mean Score (SD)	p-value
Authoritarian	One Child	29.45 (± 5.867)	0.001
	Multiple Children	10.88 (± 5.159)	
Authoritative	One Child	17.79 (± 6.476)	0.816
	Multiple Children	17.97 (± 6.720)	
Permissive	One Child	11.23 (± 5.697)	0.001
	Multiple Children	30.06 (± 6.567)	

4. DISCUSSION

The results of this study revealed that the number of children plays a significant role in the selection of parenting styles. Specifically, single-child families had higher scores on the authoritarian style, while multi-child families obtained higher scores on the permissive style. No significant difference was observed in the authoritative style. These findings suggest that parents in single-child families tend towards greater control and strictness, whereas parents in multi-child families exhibit more flexible and permissive behavior. A study in China showed that single-child migrant women with preschool-aged children employed an authoritative parenting style. Furthermore, authoritative parenting predicted children's behavioral/attention regulation abilities and led to a reduction in child behavioral problems according to teachers [21]. Migrant status and cultural differences may account for the divergent findings compared to the present study.

No significant difference was observed between single-child and multi-child families in the authoritative style. This indicates that the authoritative style may be employed as a balanced and rational style among parents, being less influenced by the number of children and more influenced by mental health and emotional stability [22]. Another study showed that parenting styles can be associated with the parents' socioeconomic status. In that study, the authoritative style was positively correlated with high socioeconomic status, while the authoritarian style was negatively correlated [23]. In the present study, parenting styles were not associated with parental education level. Another study indicated that multi-child mothers may be more anxious and protective towards their last-born children. That study recommended that counselors consider birth order in counseling sessions and advise mothers to grant more autonomy to their last-born children [24]. A study investigated the association between adolescents' perception of parental parenting styles; 504 adolescents participated. The results showed significant differences in perceived parenting styles between the two genders; boys reported higher levels of control from both parents. Adolescents who perceived their parents' parenting style as responsive and supportive of autonomy showed a significant association with their

psychological well-being, while excessive control from the father was associated with negative outcomes [25]. A study on 150 students showed that fathers' parenting styles affect mental health. The results indicated that adolescents who experience a permissive parenting style have poorer mental health compared to those under authoritative and authoritarian styles [26].

Since parenting styles may have a significant relationship with mental health [27, 28], it is necessary for parents, especially women who play a major role in child-rearing, to receive necessary parenting education before becoming parents.

5. LIMITATIONS OF THE STUDY

While this study provides valuable insights into the relationship between the number of children and parenting styles, several limitations should be considered when interpreting the findings. A primary limitation is the cross-sectional design, which, while identifying associations, cannot establish causality or determine the direction of the observed relationships. The generalizability of the findings is also constrained by the sampling method, as participants were recruited exclusively from healthcare centers in a single city (Arak), and the use of convenience sampling within selected clusters may introduce selection bias. Furthermore, the reliance on maternal self-report for data on parenting styles is susceptible to social desirability bias, and the absence of multi-informant reports, such as from fathers or through observational methods, limits the objectivity of the measurements. Another significant consideration is the lack of data on key potential confounding variables, including detailed socioeconomic status, maternal mental health, marital relationship quality, and child temperament, which makes it difficult to isolate the unique effect of the number of children. Finally, restricting the sample to mothers of children aged 5 to 7 years limits the applicability of the results to families with children in other developmental stages.

CONCLUSION

The findings of this study indicate that the number of children in a family is a significant factor associated with maternal parenting styles in the Iranian context of Arak. Specifically, single-child families demonstrated a greater tendency toward an authoritarian style, characterized by high control, whereas multi-child families leaned significantly toward a more permissive approach. It appears that Iranian families may employ distinct parenting strategies depending on family size. However, this relationship is likely complex and not deterministic.

These findings will have practical applications for mental health professionals and educational planners. For example, educational interventions can be designed for single-child parents to make them aware of their potential inclination towards strictness and to replace it with more interactive strategies. Similarly, multi-child families can be supported in understanding the importance of consistent rules and adequate supervision.

AUTHORS' CONTRIBUTIONS

The authors confirm contribution to the paper as follows: K.V. and M.F.: Conception and design, provision of study materials for patients, data collection and assembly, data analysis and interpretation, article writing, reviewing, and editing; M.F.: Conception and design, data analysis; K.V.: interpretation and editing. All the authors read and approved the final manuscript.

ABBREVIATION

TFR = Total Fertility Rate

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The thesis of general medicine was approved under the ethical code in the ethics committee of Arak University of Medical Sciences, Iran (no. IR.ARAKMU.REC.1404.076).

HUMAN AND ANIMAL RIGHTS

All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

The participants in this study signed the written informed consent forms.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data that support the findings of this study are available from Arak University of Medical Sciences, but restrictions apply to their availability. These data were used under license for the current study and are therefore not publicly available. Data are, however, available from the corresponding author [K.V] upon reasonable request and with permission of Arak University of Medical Sciences.

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