



Research article

Iranian women's attitude toward childbearing and its' association with generalized trust, social support, marital satisfaction and governmental childbearing incentives

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ABSTRACT

Background: Having a child is important event for families worldwide. Attitudes toward childbearing are influenced by many factors. The aim of the present study was to investigate Iranian women's attitude toward childbearing and its association with generalized trust, social support, marital satisfaction, mental health, and socio-economic characteristics in Qazvin province.

Methods: A cross-sectional survey study was conducted between April and July 2022. Using convenience sampling, 347 women with no children or one child in Qazvin province (Iran) participated in the study. Data were collected via the Iranian online platform *Porsline*. The survey included a demographic and fertility characteristics questionnaire, Attitudes Toward the Government's Childbearing Incentives Scale (ATGCIS), Attitudes Toward Fertility and Childbearing Scale (ATFCS), ENRICH Marital Satisfaction Scale (ENRICH MSS), Patient Health Questionnaire (PHQ-4), Multidimensional Scale of Perceived Social Support (MSPSS), and Generalized Trust Scale (GTS).

Findings: The average age of participants was 35.66 years (SD = 6.89). The score of attitudes toward fertility and childbearing was 84.66 out of 134 (SD = 19.17). The average number of expected children by the couple was 2.36 (SD = 1.35). Multivariable linear regression found a positive and significant relationship between participants' attitudes toward fertility and childbearing (ATFC) and (i) governmental childbearing incentives ($\beta = 0.365$, $p < 0.001$, with 1.37 increase in ATFC with each unit increase in this scale) (ii) generalized trust (i.e., individual's expectation of others' trustworthiness), ($\beta = 0.155$, $p < 0.003$, with 0.60 increase in ATFC with each unit increase in generalized trust) and (iii) marital satisfaction ($\beta = 0.146$, $p < 0.005$, with 0.26 increase in ATFC with each unit increase marital satisfaction). The multivariable linear regression model also showed that attitudes toward fertility and childbearing was the only predictor of couples' expected number of children in the future ($\beta = 0.214$, $p < 0.001$, with 0.38 increase in couples' expected number of children with each unit increase in ATFC).

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Conclusion: Government incentives were the strongest independent predictor of participants' attitudes toward childbearing which can indirectly influence couples' expected number of children in the future. Consequently, governments may be able to influence couples' childbearing decisions by providing appropriate incentives. Generalized trust and marital satisfaction were other significant predictors of attitudes toward childbearing. Therefore, implementing programs to improve generalized trust, and increasing marital satisfaction might be other influential measures in couples' childbearing decisions.

Problem or Issue	What are predictors of attitude toward childbearing among Iranian women?
What is Already Known	Some social and economic factors including income, job, women's employment, couple's economic and social independence, place of residence, access to quality housing, and the absence of family support policies may affect couples' childbearing decision.
What this Paper Adds	Using a multivariable analysis and considering previous proposed variables, the present study found that government incentives were the strongest independent predictor of participants' attitudes toward childbearing which can indirectly influence couples' expected number of children in the future. Also generalized trust and marital satisfaction were other significant predictors of attitudes toward childbearing.

1. Introduction

The family, the oldest and smallest human social structure, plays an important role in maintaining and developing all societies [1]. Forming a family and having an acceptable rate of childbearing is an important challenge for contemporary societies [2]. Based on some recent evidence, delayed childbearing has become the norm in high-resource societies [3]. In recent years, couple's childbearing has been delayed and mother's age at first childbirth has increased [4]. Depending on a woman's social status, being aged between 25 and 35 years is the best time to have a first child, as by this time, most women have completed their education and acquired some skills in the labor market [5]. Delay in childbearing has many consequences for both mother and child [6] including increased the risk of inadvertent infertility, reduced number of children per family [7,8], and increased pregnancy complications (including miscarriage, multiple pregnancy, ectopic pregnancy, fetal chromosomal abnormalities [such as Down's syndrome], low birth weight, gestational diabetes, gestational hypertension, fetal cleft palate, congenital heart disease, stillbirth, and maternal death) [9]. Therefore, the delay in childbearing is an important public health issue that should be included in the agenda of public health policies for the coming years [10].

One study found that Turkish young people had mostly positive attitudes toward marriage and childbearing, but social and economic factors may have negative effects on marriage and childbearing [2]. Based on evidence from different cultures, changes in lifestyle and socio-economic factors [11,12] such as income [13], job [13], women's employment [14,15], education [13,16], couple's economic and social independence [14,15], place of residence [13], and access to quality housing and mortgage loans to provide housing [17] are factors in the decision of young families to have children. Overall, the effectiveness of contraceptives, changes in values, gender equality, housing conditions, economic uncertainty, and the absence of family support policies are among the reasons that lead to the postponement of childbearing among families [18].

Most developed and developing countries have faced an increase in the urbanization process with decreased birth rate equal or lower than the worldwide total fertility rate (TFR) of 2.1 children [19]. Iran is one of the countries that has experienced a severe drop in the total TFR in the past three decades from 6.9 children in 1984 [20] to 1.65 children in 2021 [21]. Due to decreased TFR and increased life expectancy in Iran, it is predicted that the aging population will increase from less than 10% in 2015 to more than 30% in 2050 [22]. Besides the decreased TFR, the probability of having two or more children has decreased in the past 20 years. This has been greatly influenced by socio-economics where the desire to have a second child is lower than the desire to have a first child [20]. In Iran, due to the significant changes in childbearing and the increasing age of the population, the law to support the family and the youth of the population was approved by the Islamic Council on October 30, 2021. In this law, some incentives were considered to encourage the couples' childbearing decisions. Considering the approval of the aforementioned law and the variety of variables affecting couples' childbearing decisions, the present study was carried out in Qazvin province, Iran. Qazvin was selected as study setting because it was one of the provinces with a lower total fertility rate compared to the national total fertility rate in 2021 (1.44 vs. 1.65 [23]).

1.1. Aims of study

The aims of the present study were to assess (i) attitudes toward fertility and childbearing among married women without children or with one child, (ii) couples' expected number of children in the future among married women without children or with one child, and (iii) the association of their childbearing attitudes and decisions with (a) social factors such as government incentives related to the family and youth protection law, generalized trust and social support; (b) family factors including marital satisfaction; and (c) individual and social characteristics, including mental health.

2. Methods

2.1. Study design and setting

The present cross-sectional study was conducted between April and July 2022 in Qazvin province (Iran). The province is one of the Iran's 31 provinces in the north-west of the country. It has six counties comprising Qazvin, Takestan, Abyek, Buin Zahra, Alborz and Avaj. The province had a population of nearly 1.3 million individuals in 2021. Qazvin is home to a wide range of ethnic groups who mostly speak the Persian language.

2.2. Participant eligibility

Women were eligible if they (i) had been married for at least one year, (ii) were childless or had only one child in the family, (iii) and lived in Qazvin province. Being divorced or widowed and/or not consenting to participate in the study were the exclusion criteria.

2.3. Sample size estimation

To determine the sample size for linear multivariable analysis, Green's general rule [24] was used ($n = 50 + 8K$) considering 15 predictive variables (k). The minimum sample size was estimated to be 170 participants. Due to the convenience sampling, the estimated sample size was doubled to 340 participants.

2.4. Sampling procedure

Convenience sampling was used to collect the data. The surveys were distributed electronically using the Iranian online platform *Porsline*. The maximum time required to complete the survey was 25 min. The link of the survey was sent to individuals via social networks, SMS, and email. The survey link was deactivated when the estimated sample size had been reached.

2.5. Measures

The key variables examined in the present study were child bearing attitudes, generalized trust, social support, marital satisfaction, mental health, attitudes toward the governmental childbearing incentives, and demographic and fertility characteristics.

Demographic and fertility characteristics questionnaire: These questions asked about age, level of education, employment status, socio-economic status, expected number of children in the future, number of current children (none/one), and number of previous abortions.

Attitudes Toward the Government's Childbearing Incentives Scale (ATGCIS): The ATGCIS comprises five items developed by the research team to assess participants' attitudes toward influence of the Iranian government's new childbearing incentives on childbearing decisions including (i) paying a monthly allowance by government for a newborn child, (ii) increasing the amount of maternity leave for employed women, (iii) having childcare centers near the workplace, (iv) having incentive payments for childbearing, and (v) overall confidence regarding the government's childbearing facilities and incentives. Items (e.g., "The existence of child care centers (kindergartens) near my workplace will be effective in my decision of childbearing") are responded on five-point Likert from 1 (*strongly disagree*) to 5 (*strongly agree*). The response of all items was summed to calculate the total score. Total scores ranged from 5 to 25, with higher scores indicating a more positive attitude toward the government's childbearing incentives. The qualitative face validity and content validity of the ATGCIS was assessed and confirmed by five faculty members of the School of Nursing and Midwifery. The construct validity of the ATGCIS was investigated using exploratory factor analysis (EFA). As there were five items in the scale, 10 individuals per item (a total 50 participants) completed the pilot scale to assess construct validity. With Kaiser-Meyer-Olkin (KMO) index of 0.71 and significant correlation between pairs of variables based on Bartlett sphericity test ($p < 0.001$), the sample size was suitable for conducting EFA [25]. Based on EFA, these items explained 75.92% of variance. In the present study, the internal reliability of the scale was good (Cronbach's alpha = 0.76).

Attitudes Toward Fertility and Childbearing Scale (ATFCS): The ATFCS has 27 items (e.g., "I look forward to becoming a mother one day") comprising three subscales (the importance of fertility for the future, childbearing as an obstacle in the present, and social identity) [26]. The ATFCS has been translated to Persian and has good psychometric properties [27]. In the Persian version, four items (Items 9, 23, 24 and 26) were removed (for various psychometric reasons) and the remaining 23 items were in the following subscales: child is the pillar of life (eight items); postponing fertility to the future (six items); child hinders life (five items); and fertility requires the fulfillment of antecedents (four items). All items are rated on a five-point Likert scale from 1 (*totally disagree*) to 5 (*totally agree*). The total score is the sum of all items (ranging from 23 to 115) with higher scores indicating better attitude towards fertility and childbearing [27]. The reliability of the scale was excellent in the present study (Cronbach's alpha = 0.92). Due to different number of items in each subscale and to have comparable results for subscales, the adjusted mean score for subscales was calculated by dividing sum of each subscale by number of items. Consequently, the possible range of adjusted mean score ranged from 1 to 5.

ENRICH Marital Satisfaction Scale (ENRICH MSS): The ENRICH MSS has 15 items (e.g., "My partner and I understand each other perfectly") rated on a five-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale assesses marital satisfaction. The total score is sum of all items ranging from 15 to 75 with higher scores indicating greater marital satisfaction [28]. The scale has been translated into Persian and has good psychometric properties [29]. The reliability of the scale was excellent in the present study (Cronbach's alpha = 0.91).

Patient Health Questionnaire (PHQ-4): Combining the two items from the PHQ-2 and the two items from the Generalized Anxiety Disorder-2 (GAD-2) scale, the PHQ-4 is an ultra-brief screening scale used to assess anxiety and depression [30]. The good psychometric properties of the PHQ-4 have been assessed and confirmed [31]. PHQ-4 items (e.g., “Over the last two weeks, how often have you been bothered by feeling nervous, anxious or on edge?”) are rated using four-point Likert scale from 0 (*not at all*) to 3 (*nearly every day*). The total score is the sum of all item ranging from 0 to 12 with higher scores indicating poorer mental health [30]. The scale has been translated into Persian and has good psychometric properties [32]. The reliability of the scale was excellent in the present study (Cronbach’s alpha = 0.90).

Multidimensional Scale of Perceived Social Support (MSPSS): The MSPSS has 12 items (e.g., “There is a special person who is around when I am in need”) rated on a seven-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale assesses social support received from three sources (family, friends, and others). The total score is sum of all items ranging from 12 to 84 with higher scores indicating greater social support [33]. The scale has been translated into Persian and has good psychometric properties [34]. The reliability of the scale was excellent in the present study (Cronbach’s alpha = 0.95).

Generalized Trust Scale (GTS): The six-item GTS Items (e.g., “Most people are basically honest”) are rated on a five-point Likert scale from 1 (*completely disagree*) to 5 (*completely agree*). The scale assesses individual’s expectation of others’ trustworthiness. The total score is the sum of all items and ranges from 6 to 30 with higher score indicating higher level of trust [35]. The scale has been translated into Persian and has good psychometric properties [36]. The reliability of the scale was very good in the present study (Cronbach’s alpha = 0.85).

2.6. Ethical considerations

The study protocol was reviewed and approved by Institutional Review Board and the Ethics Committee in Biological Research (with ref code of IR.QUMS.REC.1400.487). Informed consent from participants was acquired electronically. With regards the aim of study, participants’ required eligibility criteria, their willingness to participate, and data confidentiality were explained on the first page of the electronic survey. They were asked to complete the survey if they provided their consent to participate.

2.7. Statistical analysis

SPSS software (version 25) was used for data analysis. Means and standard deviations (SDs) were used to report continuous variables. Frequencies and percentages were used to report categorical variables. Association of attitudes toward fertility and childbearing, and expected number of children in the future with study variables (i.e., generalized trust, social support, marital satisfaction, mental health, and attitudes toward the governmental childbearing incentives) were assessed using Pearson correlation coefficients. Two linear regression models were run to assess the independent predictors of attitudes toward fertility and childbearing, and expected number of children in the future. In the multi-variable model, dependent variables (including generalized trust, social support, marital satisfaction, mental health, and attitudes toward the governmental childbearing incentives) were entered using the stepwise approach. The assumptions of linear regression model (e.g., normal distribution of dependent variables, absence of outliers, variance inflation factor (VIF) < 2 and tolerance < 1 for all variables) were confirmed. A p -value of <0.05 was set as the significance level of all tests. Finally, conceptual map was developed to better present the association between the study variables (see Fig. 1).

3. Results

A total of 347 married women participated in the present study of which 68 were childless (19.6%) and 279 had one child (80.4%). The average ages of women and their husband were 35.87 years (SD = 7.38) and 39.35 years (SD = 7.08), respectively. A total of 106 individuals reported at least one previous abortion (30.5%). Moreover, the average expected number of children by the family in the future was 2.36 (SD = 1.35). Table 1 shows the other demographic and fertility characteristics.

Participants’ mean attitude score on the ATFCS was 84.66 out of 115 (SD = 19.17). Adjusted means (and SDs) for each ATFCS subscale were: (i) child is the pillar of life = 3.66 (SD = 0.92; eight items), (ii) postponing fertility to the future = 2.77 (SD = 1.05; six items); (iii) child hinders life = 2.93 (SD = 0.97; five items), and (iv) fertility requires the fulfillment of antecedents = 2.08 (SD = 0.84; four items). Mean participant scores were 17.58 (out of 30) for generalized trust, 54.90 (out of 84) for social support, 52.20 (out of 75)

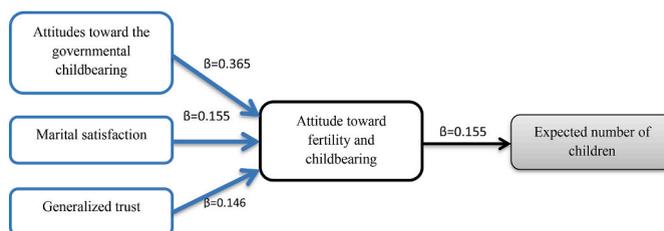


Fig. 1. Conceptual map presenting predictors of attitude toward participants’ fertility and childbearing and its’ predictor role for participants’ expected number of children.

Table 1
Summary characteristics of participants (N = 347).

Variable	Frequency (%)
Women's education	
Less than high school diploma	33 (9.5)
High school diploma	74 (21.3)
Academic degree	240 (69.2)
Spouse's education	
Less than high school diploma	49 (14.1)
High school diploma	81 (23.3)
Academic degree	217 (62.5)
Women's occupational status	
Housewife	137 (39.5)
Government job	189 (53.6)
Non-government job	24 (6.9)
Spouse's job	
Unemployed	25 (7.2)
Government job	153 (44.1)
Self-employed job	153 (44.1)
Retired	16 (4.6)
Place of residence	
Urban	292 (84.1)
Rural	55 (15.9)
Perceived household economic status	
Weak	75 (21.6)
Fair	214 (61.7)
Good	58 (16.7)
Expected number of children in the future	
One	79 (26.4)
Two	126 (42.1)
Three	48 (16.1)
Four or more	25 (8.3)
Not yet decided	21 (7)

for marital satisfaction, 4.04 (out of 12) for mental health, and 16.11 (out of 25) for attitudes toward the governmental childbearing. Attitude towards fertility and childbearing was significantly associated with marital satisfaction ($r = 0.207$); mental health ($r = -0.151$); perceived social support ($r = 0.228$); generalized trust ($r = 0.246$); and attitudes toward the governmental childbearing incentives ($r = 0.387$). The inter-correlations between all the study variables are shown in Table 2.

The multivariable linear regression model showed a positive and significant relationship between participants' attitudes toward fertility and childbearing and (i) generalized trust ($\beta = 0.155$, $p < 0.003$), (ii) marital satisfaction ($\beta = 0.146$, $p < 0.005$), and (iii) attitude toward governmental childbearing incentives ($\beta = 0.365$, $p < 0.001$). The multivariable linear regression model also showed that attitudes toward fertility and childbearing was the only predictor of couples' expected number of children in the future ($\beta = 0.214$, $p < 0.001$). Table 3 shows the results of multivariable linear regression models. A conceptual map (Fig. 1) was designed based on multivariable linear regression results presenting predictors of attitude toward participants' fertility and childbearing and its' predictor role for participants' expected number of children. The map shows that more positive attitude toward governmental childbearing incentives, higher generalized trust, and higher marital satisfaction might lead to better attitudes toward fertility and childbearing. Better attitudes toward fertility and childbearing might lead to a higher expected number of children (which would result in a higher fertility rate).

Table 2
Mean (SD) of study variables and their inter-correlations.

Variables	Inter items' Pearson correlation coefficients					
	1	2	3	4	5	6
1. Attitudes toward fertility and childbearing	1	0.207 ^a	-0.151 ^a	0.228 ^a	0.246 ^a	0.387 ^a
2. Marital satisfaction		1	-0.509 ^a	0.443 ^a	0.320 ^a	0.016
3. Mental health			1	-0.381 ^a	-0.458 ^a	-0.074
4. Perceived social support				1	0.514 ^a	0.128 ^a
5. Generalized trust					1	0.132 ^a
6. Attitudes toward the governmental childbearing incentives						1
Mean (SD)	84.66 (19.17)	52.20 (11.54)	4.04 (3.36)	54.90 (14.58)	17.58 (4.67)	16.11 (5.08)
Possible range	23-115	15-75	0-12	12-84	6-30	5-25

^a Correlation is significant at the 0.05 level (two-tailed).

Table 3

Results of multivariable linear regression models^a presenting predictors of attitudes toward fertility and childbearing, and expected number of children in the future.

Independent variable	Predictors	Unstandardized Coefficients		Standardized coefficients	Sig.
		B (95% CI)	Std. error	beta	
Attitude toward fertility and childbearing	Attitudes toward governmental childbearing incentives	1.37 (1.01; 1.74)	0.19	0.365	<0.001
	Marital satisfaction	0.26 (0.09; 0.43)	0.09	0.155	0.003
	Generalized trust	0.60 (0.18; 1.01)	0.21	0.146	0.005
Expected number of children in the future	Attitude toward fertility and childbearing	0.38 (0.18; 0.59)	0.10	0.21	<0.001

^a Both models adjusted for socio-demographic characteristics.

4. Discussion

The present study assessed attitudes toward fertility and childbearing and participants' expected number of children in the future among married women without children or with a single child in Qazvin (a province with lower total fertility rate compared to national total fertility rate level). Participants had the highest mean score on the 'child is the pillar of life' subscale. Another key finding of present study was that 66.5% of the participants reported their optimal number of children was to have two or more children, and only 26.4% of participants reported wanting only one child for their lifetime. Consistently, the importance of having a child in the family has been reported as a necessity in previous studies and the desire to have a child has varied from 28% to 90% in different cultures [37–41].

The multivariable linear regression model showed a positive and significant relationship between participants' attitudes toward fertility and childbearing and governmental childbearing incentives (including increasing the amount of maternity leave for employed women, having kindergartens near the workplace, paying a specific amount of financial support by the government at time of childbirth), marital satisfaction, and generalized trust. Also, participants' attitudes toward fertility and childbearing were the only predictor of couples' expected number of children in the future.

Governmental childbearing incentives offered to individuals were the strongest predictor of attitudes toward fertility and childbearing. One probable reason that women may consider governmental incentives as an important factor for their future fertility decisions, might be related to the fact that most of the participants had governmental jobs and incentives such as generous maternity leave (nine months). Such initiatives may not be possible and/or as generous in private sector. To examine this further, exploratory analysis was carried out examining if there was any association between women's job with their attitudes toward childbearing and importance of governmental childbearing incentives. Although housewives had higher attitudes toward childbearing compared to employed individuals, there was no significant difference between women who worked in the governmental sector or the private sector. Also, no significant association was found between women's job and their attitudes toward importance of governmental childbearing incentives. A government's encouraging or restrictive policies are influential factors in families decision to have children [42]. Nasrabadi et al. reported that implementing maternity leave and extending its duration provides an opportunity for couples to have a child at the optimal time and prevent a long delay. However, due to numerous institutional obstacles of childbearing, increasing the amount of maternity leave by itself cannot increase the number of desired children by couples [43]. Suitable economic conditions for childbearing should be provided by governments and a series of supportive programs and policies should be adopted, especially broad access to childcare as well as flexibility of the labor market [43]. Employment of women is among the factors that affect the family's childbearing decisions directly or indirectly [44–46]. In the present study, marital satisfaction and generalized trust were the other predictors of participants' attitude toward fertility and childbearing. Previous studies have consistently shown that marital satisfaction has a direct relationship with the decision to have children in the family [47–49]. Ghafari et al. observed that fear of social insecurity reduces fertility [42]. Therefore, having robust multifaceted interventions including provision of appropriate national governmental incentives, and the designing and implementing programs for improving generalized trust and marital satisfaction by healthcare professionals (e.g., midwives, family health care providers, clinical psychologists, family psychologists, etc.), could facilitate childbearing.

4.1. Limitations

The present study has some limitations. First, the study used a cross-sectional design, which at best can only describes the associations between variables and not causal relationships. Secondly, the participants in the present study were childless women and single child mothers, and the findings cannot be generalized to all women. Thirdly, sampling was done via an online platform using convenience sampling to recruit eligible participants, and was therefore unrepresentative. Fourth, all study variables were assessed using self-report measures, which may be subject to biases such as social desirability.

4.2. Conclusion

Government incentives were the strongest independent predictor of participants' attitudes toward childbearing which can indirectly influence couples' expected number of children in the future. So, governments may be able to influence couples' childbearing decisions by providing appropriate incentives. Generalized trust and marital satisfaction were other significant predictors of attitudes toward childbearing. Therefore, implementing programs to improve generalized trust and increasing marital satisfaction might be other influential measures to help facilitate couples' childbearing decisions.

Ethical statement

The study protocol was reviewed and approved by Institutional Review Board and the Ethics Committee in Biological Research affiliated to Qazvin University of Medical Sciences (decree code: IR.QUMS.REC.1400.487). Informed consent from participants was acquired electronically. With regards the aim of study, participants' required eligibility criteria, their willingness to participate, and data confidentiality were explained on the first page of the electronic survey. They were asked to complete the survey if they provided their consent to participate.

Author contribution statement

Zainab Alimoradi: conceived and designed the experiments; performed the experiments; analyzed and interpreted the data; contributed reagents, materials, analysis tools and data; writing the paper. Mehran Alijanzadeh conceived and designed the experiments; analyzed and interpreted the data; contributed reagents, materials, analysis tools and data. Nasim Bahrami: conceived and designed the experiments; Elahe Jafari, Mohsen Noori, Fatemeh Miri and Mahsa Joftyar: performed the experiments. Mark D. Griffiths: Writing and editing of the paper.

Data availability statement

Data will be made available on reasonable request.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Not applicable.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.heliyon.2023.e16162>.

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