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Latent profiles of subsequent fertility pressure and their association with intention to have another child among parous women in China: a cross-sectional study

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Abstract

Background

Subsequent fertility pressure may reflect interacting social determinants, including household resources, employment conditions, access to childcare, health concerns, and family expectations. This study aimed to identify latent profiles of subsequent fertility pressure, examine factors associated with profile membership, and compare intention to have another child across profiles.

Methods

A cross-sectional online survey was conducted from March to July 2025. Parous women of reproductive age were recruited from 21 provinces and autonomous regions and four municipalities in China using convenience sampling guided by prespecified demographic strata. Participants completed a general information questionnaire, the Subsequent Fertility Pressure Scale for Women of Childbearing Age, and a single-item measure of intention to have another child. Latent profile analysis identified pressure profiles. Multinomial logistic regression examined factors associated with profile membership, and the Kruskal-Wallis H test compared fertility intention across profiles.

Results

Among 2,123 participants, the median fertility-pressure score was 117.00 (IQR 103.00-133.00). Three profiles were identified: moderate pressure with prominent health impairment and childcare pressure (15.50%), moderately high pressure with a multidimensional pattern (62.41%), and high pressure with prominent child growth and development pressure (22.09%). Annual household income, childcare arrangement, availability of affordable high-quality childcare, ideal number of children and lineage-continuation beliefs were associated with profile membership (all $P < 0.05$). Intention to have another child was weak overall and differed across profiles ($P < 0.001$), and all Bonferroni-adjusted pairwise comparisons were significant (all adjusted $P < 0.001$).

Conclusions

Subsequent fertility pressure was heterogeneous and associated with household resources, childcare arrangements and service availability, reproductive preferences, and sociocultural beliefs. Public health responses should combine affordable childcare, employment protection, income-sensitive support, and accessible reproductive and maternal health services while respecting reproductive autonomy. Longitudinal and more representative studies are needed.

Background

China has introduced national and local measures to support childbearing in response to persistently low fertility and rapid population ageing. Policy relaxation alone, however, does not remove the practical constraints that shape whether women want or feel able to have another child. From a public health perspective, reproductive decisions are influenced by social determinants including household resources, employment security, caregiving infrastructure, gendered divisions of unpaid work, and access to reproductive and maternal health services[1–3]. Understanding how these conditions combine is important for policies that seek to improve health and wellbeing while safeguarding reproductive autonomy.

Subsequent fertility pressure refers to the multidimensional pressure experienced by parous women when considering another child. It includes financial strain, work-related demands, health concerns, childcare responsibilities, concerns about children's growth and development, and tension within family relationships [4]. When these demands exceed the resources available to women and their families, they may generate anxiety about another pregnancy and weaken subsequent fertility intention [4].

Previous research on low fertility in China has examined economic costs, work-family conflict, childcare availability, gender norms, and policy environments [1, 5, 6]. These factors span several social determinants of health, yet less attention has been given to how they cluster within individual women. Analyses based only on a total pressure score can obscure multidimensional patterns, including differences in the relative prominence of financial, occupational, health, caregiving, and family pressures. Identifying these patterns may inform proportionate public health and social-policy responses.

Latent profile analysis (LPA) is a person-centred method that identifies unobserved subgroups from patterns across continuous indicators [7]. Our team previously clarified the concept of subsequent fertility pressure using Rodgers' evolutionary method [4]. The multidimensional scale developed by our team has been used in a previous study of subsequent fertility pressure[8]. Applying LPA to these dimensions can reveal distinct configurations of pressure and the population groups most exposed to them. This study therefore aimed to identify latent profiles of subsequent fertility pressure among parous women in China, examine sociodemographic, employment, childcare, and sociocultural factors associated with profile membership, and compare intention to have another child across profiles.

Methods

Study design and participants

A cross-sectional online survey was conducted from March to July 2025. Parous women of reproductive age were recruited by convenience sampling, with recruitment guided by prespecified strata for region, household registration, employment type, household income, and number of existing children.

Participants came from 21 provinces and autonomous regions and four municipalities across China.

The study population and questionnaire data partially overlapped with those of our previously published study, which examined overall levels of subsequent fertility pressure and their associated factors[8]. Although both studies used the same Subsequent Fertility Pressure Scale for Women of Childbearing Age, the present study included a partly different analytical sample and focused on identifying latent profiles of fertility pressure and examining their associations with subsequent fertility intention.

The inclusion criteria were as follows: (1) married women; (2) aged 18–49 years; (3) having reproductive capacity and at least one healthy child; (4) able to understand and complete the questionnaire; and (5) willing to participate and provide informed consent. Women with a psychiatric disorder or cognitive impairment that prevented questionnaire completion were excluded.

Sample size

Sample-size requirements for latent profile analysis depend on factors such as profile separation, the number of indicators, profile proportions, and other model characteristics rather than a universal minimum sample size [9]. The final analytic sample comprised 2,123 participants.

Ethical considerations

The study was approved by the Ethics Committee of Nanjing Maternal and Child Health Hospital (approval no. 2022KY-110-01). All participants received electronic information about the study and provided electronic informed consent before accessing the questionnaire. Participation was voluntary, and responses were treated confidentially.

Measures

General information questionnaire

A study-specific questionnaire developed by our research team was used to collect sociodemographic and family characteristics, including region of residence, ethnicity, age, educational attainment, household registration, medical insurance, pension insurance, employment type, annual household income, number of existing children, primary childcare arrangement, availability of childcare services in the residential community, ideal number of children, and endorsement of lineage-continuation beliefs.

Subsequent Fertility Pressure Scale for Women of Childbearing Age

The research team previously developed the Subsequent Fertility Pressure Scale for Women of Childbearing Age. The 24-item scale covers five dimensions: financial pressure (5 items), work-related pressure (5 items), health impairment and childcare pressure (5 items), pressure related to children's growth and development (6 items), and family relationship pressure (3 items). Items are rated from 1 to 7, producing a total score of 24–168; higher scores indicate greater pressure regarding another child. The scale demonstrated strong internal consistency (Cronbach's alpha = 0.940), split-half reliability (0.837), and test-retest reliability (0.843). Item-level content validity indices ranged from 0.875 to 1.000.

Intention to have another child

Subsequent fertility intention was assessed using a study-specific single item: “In the absence of policy restrictions, I intend to have another child within the next three years.” Responses ranged from 1 (definitely do not intend to have another child) to 7 (definitely intend to have another child), with higher scores indicating stronger intention.

An English translation of the complete survey questionnaire, including the general information questions, the Subsequent Fertility Pressure Scale for Women of Childbearing Age and its response options, and the single-item measure of subsequent fertility intention, is provided in Additional file 1.

Data collection and quality control

Trained investigators recruited eligible participants online and invited them to complete the questionnaire on the Wenjuanxing platform by scanning a QR code. Recruitment was monitored across the prespecified demographic strata to improve sample diversity. The first page described the study purpose, survey content, completion instructions, voluntariness, and confidentiality. Participants could proceed only after providing electronic informed consent. The platform permitted one submission per IP address or device identifier and required responses to all items. After data collection, questionnaires were excluded if completion time was implausibly short or if responses showed evident regular or invariant patterns.

Statistical analysis

Latent profile analysis (LPA) was conducted in Mplus version 8.3 using the five dimensions of the Subsequent Fertility Pressure Scale as continuous indicators. One- to five-profile solutions were compared using the Akaike information criterion (AIC), Bayesian information criterion (BIC), sample-size-adjusted BIC (aBIC), entropy, Lo–Mendell–Rubin adjusted likelihood ratio test (LMRT), bootstrap likelihood ratio test (BLRT), average posterior probabilities (AvePPs), profile size, and substantive interpretability [9, 10]. A significant LMRT or BLRT was interpreted as evidence favouring the k-profile over the k – 1-

profile solution, together with information criteria, classification quality, profile size and interpretability [9, 10]. The final solution was selected based on statistical fit, classification quality, parsimony, interpretability, and replication of the best log-likelihood value. Other analyses were conducted in SPSS version 26.0. Categorical variables were summarized as frequencies and percentages and compared using chi-square tests. Non-normally distributed continuous variables were summarized as medians and interquartile ranges (IQRs) and compared using the Kruskal-Wallis H test. Potential common method bias was assessed using Harman's single-factor test. Multinomial logistic regression was used to examine factors associated with profile membership. Subsequent fertility intention was compared across profiles using the Kruskal-Wallis H test. All tests were two-sided, and $P < 0.05$ was considered statistically significant.

Results

Assessment of common method bias

Because all study variables were self-reported, Harman's single-factor test was used to assess whether a single factor dominated the observed covariance[11]. An unrotated exploratory factor analysis extracted six factors with eigenvalues greater than 1. The first factor explained 43.19% of the total variance, below the commonly used 50% threshold [12]. This result did not indicate a dominant single-factor structure, although it does not exclude all forms of common method bias [11, 12].

Participant characteristics and study variables

Of 2,212 submitted questionnaires, 2,123 met the eligibility and quality-control criteria, yielding a valid-response rate of 95.98%. Participant characteristics, subsequent fertility pressure scores, and subsequent fertility intention scores are presented in Table 1.

Table 1
Participant characteristics and study variables by latent profile

Variable		Total (n = 2123)	Moderate pressure-health impairment and childcare pressure prominent (n = 329)	Moderately high pressure-multidimensional pattern (n = 1,325)	High pressure-prominent child growth and development pressure (n = 469)	*Test statistic*	*P* valu
Region [n (%)]	Eastern	1813(85.40)	277(84.19)	1146(86.49)	390(83.16)	8.279	0.21
	Central	68(3.20)	14(4.26)	40(3.02)	14(2.99)		
	Western	50(2.36)	11(3.34)	29(2.19)	10(2.13)		
	Northeast	192(9.04)	27(8.21)	110(8.30)	55(11.73)		
Ethnicity [n (%)]	Han	2065(97.27)	320(97.26)	1293(97.58)	452(96.38)	1.907	0.38
	Minority	58(2.73)	9(2.74)	32(2.42)	17(3.62)		
Only child [n (%)]	Yes	846(39.85)	140(42.55)	520(39.25)	186(39.66)	1.212	0.54
	No	1277(60.15)	189(57.45)	805(60.75)	283(60.34)		
Age [n (%)]	≤ 29	140(6.59)	26(7.90)	86(6.49)	28(5.97)	1.359	0.85
	30□39	1424(67.07)	220(66.87)	887(66.94)	317(67.59)		
	≥ 40	559(26.33)	83(25.23)	352(26.57)	124(26.44)		
Education level [n (%)]	Junior high or below	73(3.44)	9(2.74)	43(3.25)	21(4.48)	10.206	0.11
	High school/technical secondary	100(4.71)	12(3.65)	57(4.30)	31(6.61)		
	Junior college/Bachelor'	1723(81.16)	271(82.37)	1074(81.06)	378(80.60)		
	Master's or above	227(10.69)	37(11.25)	151(11.40)	39(8.32)		
Household registration [n (%)]	Urban	1631(76.83)	264(80.24)	1026(77.43)	341(72.71)	6.900	0.03
	Rural	492(23.17)	65(19.76)	299(22.57)	128(27.29)		
Medical insurance [n (%)]	Yes	2079(97.93)	325(98.78)	1301(98.19)	453(96.59)	5.778	0.05
	No	44(2.07)	4(1.22)	24(1.81)	16(3.41)		
Pension insurance [n (%)]	Yes	2030(95.62)	322(97.87)	1270(95.85)	438(93.39)	9.718	0.00
	No	93(4.38)	7(2.13)	55(4.15)	31(6.61)		
Employment type [n (%)]	Public sector	1084(51.06)	203(61.70)	680(51.32)	201(42.86)	43.815	< 0.00
	Non-public sector	924(43.52)	119(36.17)	583(44.00)	222(47.33)		
	Unemployed	115(5.42)	7(2.13)	62(4.68)	46(9.81)		
Annual household income [n (%)]	< 100,000 RMB	361(17.00)	24(7.29)	191(14.42)	146(31.13)	107.916	< 0.00
	100,000–300,000 RMB	1249(58.83)	198(60.18)	808(60.98)	243(51.81)		
	300,000–500,000 RMB	386(18.18)	74(22.49)	255(19.25)	57(12.15)		
	> 500,000 RMB	127(5.98)	33(10.03)	71(5.35)	23(4.90)		
Number of existing children [n (%)]	1	1468(69.15)	247(75.08)	919(69.36)	302(64.39)	12.757	0.01
	2	633(29.82)	81(24.62)	389(29.36)	163(34.75)		
	≥ 3	22(1.04)	1(0.30)	17(1.28)	4(0.85)		

Note: *Pearson's x^2 test was used for categorical variables, whereas the Kruskal-Wallis H test was used for non-normally distributed continuous variables. Different superscript letters indicate statistically significant differences between profiles based on Bonferroni-adjusted post hoc pairwise comparisons (all adjusted P < 0.001).*

Variable		Total (n = 2123)	Moderate pressure-health impairment and childcare pressure prominent (n = 329)	Moderately high pressure-multidimensional pattern (n = 1,325)	High pressure-prominent child growth and development pressure (n = 469)	*Test statistic*	*P* valu
Childcare arrangement [n (%)]	Self-care	682(32.12)	85(25.84)	400(30.19)	197(42.00)	29.239	< 0.00
	Family support	1441(67.88)	244(74.16)	925(69.81)	272(58.00)		
Availability of childcare services [n (%)]	Government-provided affordable high-quality services	529(24.92)	142(43.16)	306(23.09)	81(17.27)	101.616	< 0.00
	Market-provided affordable high-quality services	308(14.51)	56(17.02)	206(15.55)	46(9.81)		
	No affordable high-quality services	1286(60.57)	131(39.82)	813(61.36)	342(72.92)		
Ideal number of children [n (%)]	≤ 1	637(30.00)	77(23.40)	341(25.74)	219(46.70)	80.560	< 0.00
	2	1347(63.45)	229(69.60)	892(67.32)	226(48.19)		
	≥ 3	139(6.55)	23(6.99)	92(6.94)	24(5.12)		
Son preference for lineage continuation [n (%)]	Agree	114(5.37)	25(7.60)	71(5.36)	18(3.84)	46.036	< 0.00
	Neutral	360(16.96)	89(27.05)	221(16.68)	50(10.66)		
	Disagree	1649(77.67)	215(65.35)	1033(77.96)	401(85.50)		
Total subsequent fertility pressure score (median, IQR)		117.00(103.00,133.00)	87.00(79.00,93.00)	115.00(107.00,124.00)	149.00(141.00,160.00)	1559.623	< 0.00
Financial pressure (median, IQR)		26.00(22.00,30.00)	19.00(14.00,21.00)	25.00(22.00,28.00)	32.00(29.00,35.00)	979.671	< 0.00
Work-related pressure (median, IQR)		22.00(18.00,28.00)	15.00(10.00,19.00)	22.00(18.00,25.00)	32.00(28.00,35.00)	963.677	< 0.00
Health impairment and childcare pressure (median, IQR)		28.00(25.00,33.00)	22.00(20.00,24.00)	28.00(25.00,31.00)	35.00(33.00,35.00)	1111.868	< 0.00
Child growth and development pressure (median, IQR)		27.00(24.00,31.00)	20.00(16.00,23.00)	27.00(24.00,29.00)	37.00(33.00,42.00)	1259.989	< 0.00
Family relationship pressure (median, IQR)		14.00(12.00,17.00)	11.00(8.00,13.00)	14.00(12.00,16.00)	18.00(15.00,21.00)	564.477	< 0.00
Subsequent fertility intention score (median, IQR)		1.00(1.00,2.00)	2.00(1.00,4.00)[a]	1.00(1.00,2.00)[b]	1.00(1.00,1.00)[c]	192.555	< 0.00

Note: *Pearson's x^2 test was used for categorical variables, whereas the Kruskal-Wallis H test was used for non-normally distributed continuous variables. Different superscript letters indicate statistically significant differences between profiles based on Bonferroni-adjusted post hoc pairwise comparisons (all adjusted P < 0.001).*

Latent profiles of subsequent fertility pressure

The five scale dimensions were entered as continuous indicators in models containing one to five profiles. As the number of profiles increased, the AIC, BIC, and aBIC progressively decreased, whereas the likelihood-ratio tests and classification indices did not uniformly identify a single best-fitting solution (Table 2). The two-profile solution showed an entropy of 0.769 and AvePPs ranging from 0.921 to 0.943. For the three-profile solution, the AIC, BIC, and aBIC decreased substantially, entropy increased to 0.809, and AvePPs ranged from 0.875 to 0.918, indicating good classification quality. The BLRT favored the three-profile over the two-profile solution ($P < 0.001$), although the LMRT did not reach statistical significance ($P = 0.062$).

Although the information criteria continued to decrease for the four- and five-profile solutions, the four-profile model did not improve entropy (0.809) and generated a small profile comprising only 2.40% of the sample. The five-profile solution showed lower entropy (0.787), lower minimum AvePP (0.841), and an even smaller profile comprising 1.27% of participants. The LMRT also remained non-significant for both the four- and five-profile solutions ($P = 0.055$ and $P = 0.107$, respectively). After increasing the random-start values, the best log-likelihood values were replicated and the BLRT solutions were obtained without evidence of local-maxima problems. Considering statistical fit, classification quality, profile size, parsimony, and interpretability, the three-profile solution was retained.

Figure 1 shows the three profiles. Profile 1 included 329 women (15.50%) and had the lowest scores across the five indicators, with health impairment and childcare pressure being relatively prominent within the profile. This profile was labeled "moderate pressure with prominent health impairment and childcare pressure." Profile 2 included 1,325 women (62.41%) and showed moderately high pressure across multiple dimensions, particularly financial pressure, health impairment and childcare pressure, and child growth and development pressure, without a single overwhelmingly dominant dimension. It was labeled "moderately high pressure with a multidimensional pattern." Profile 3 included 469 women (22.09%) and had the highest scores across the five indicators, with child growth and development pressure being the most prominent dimension, followed by health impairment and childcare pressure. It was labeled "high pressure with prominent child growth and development pressure."

Table 2
Fit indices for latent profile models of subsequent fertility pressure (n = 2,123)

Model	AIC	BIC	aBIC	Entropy	LMRT	BLRT	Class proportions	AvePP
1	67426.730	67483.336	67451.565	—	—	—	—	—
2	64907.092	64997.661	64946.827	0.769	< 0.001	< 0.001	0.595/0.405	0.921–0.943
3*	63926.618	64051.151	63981.255	0.809	0.0623	< 0.001	0.155/0.624/0.221	0.875–0.918
4	63376.580	63535.076	63446.117	0.809	0.0552	< 0.001	0.024/0.359/0.462/0.155	0.873–0.949
5	63155.419	63347.879	63239.857	0.787	0.1065	< 0.001	0.013/0.108 /0.449/0.129/0.301	0.841–0.932

Note: *"—" indicates that the value is not applicable. * Indicates the retained model.*

Factors associated with latent profile membership

Univariate analysis

Characteristics across the three latent profiles are presented in Table 1.

Multinomial logistic regression

Latent profile membership was entered as the dependent variable, with the high-pressure profile as the reference category. Variables associated with profile membership in the univariate analyses were entered as independent variables; coding is shown in Table 3. In the multinomial logistic regression, significant category-specific associations with latent profile membership were observed for annual household income, childcare arrangement, ideal number of children, availability of affordable high-quality childcare services, and endorsement of lineage-continuation beliefs (all $P < 0.05$; Table 4).

Table 3
Coding of variables entered into the multinomial logistic regression

Variables	Code
Household registration	urban = 1; rural = 2
Pension insurance	yes = 1; no = 2
Employment type	dummy variables with “unemployed (0,0)” as reference; public sector (1,0), non-public sector (0,1)
Annual household income	dummy variables with “>500,000 RMB (0,0,0)” as reference; <100,000 RMB (1,0,0), 100,000–300,000 RMB (0,1,0), 300,000–500,000 RMB (0,0,1)
Number of existing children	dummy variables with “≥3 (0,0)” as reference; 1 child (1,0), 2 children (0,1)
Childcare arrangement	self-care = 1; family support = 2
Availability of childcare services	dummy variables with “no affordable high-quality services (0,0)” as reference; government-provided affordable high-quality services (1,0), market-provided affordable high-quality services (0,1)
Ideal number of children	dummy variables with “≥3 (0,0)” as reference; ≤1 child (1,0), 2 children (0,1)
Son preference for lineage continuation	dummy variables with “disagree (0,0)” as reference; agree (1,0), neutral (0,1)

Table 4
Multinomial logistic regression of latent profile membership (n = 2,123)

Variables		Moderate pressure–health and childcare pressure prominent profile				
		β	**SE**	***P***	***OR***	**95% CI**
Constant		-1.804	1.312	0.169	—	—
Childcare arrangement	self-care	-0.534	0.172	0.002	0.586	(0.418, 0.822)
Annual household income	< 100,000 RMB	-1.938	0.373	< 0.001	0.144	(0.069, 0.299)
Ideal number of children	≤ 1	-1.107	0.351	0.002	0.330	(0.166, 0.658)
Availability of childcare services	government-provided affordable high-quality services	1.430	0.186	< 0.001	4.180	(2.902, 6.022)
	Market-provided affordable high-quality services	0.964	0.236	< 0.001	2.623	(1.652, 4.165)
Son preference for lineage continuation	agree	1.112	0.348	0.001	3.041	(1.539, 6.009)
	neutral	1.244	0.215	< 0.001	3.469	(2.278, 5.284)
Variables		**Moderately high pressure – multidimensional pattern profile**				
		β	**SE**	**P**	**OR**	**95% CI**
Constant		1.514	0.705	0.032	—	—
Childcare arrangement	self-care	-0.390	0.121	0.001	0.677	(0.535, 0.858)
Annual household income	< 100,000 RMB	-0.651	0.277	0.019	0.521	(0.303, 0.897)
Ideal number of children	≤ 1	-0.948	0.262	< 0.001	0.387	(0.232, 0.647)
Availability of childcare services	government-provided affordable high-quality services	0.444	0.149	0.003	1.560	(1.164, 2.090)
	market-provided affordable high-quality services	0.548	0.183	0.003	1.729	(1.208, 2.476)
Son preference for lineage continuation	neutral	0.529	0.179	0.003	1.698	(1.196, 2.409)

Note: *The high-pressure profile with prominent child growth and development pressure was the reference outcome category.*

Intention to have another child across profiles

Intention to have another child differed significantly across the three profiles ($H = 192.555$, $P < 0.001$; Table 1). The median score was 2.00 (IQR 1.00–4.00) in the moderate-pressure profile, 1.00 (IQR 1.00–2.00) in the moderately high-pressure profile, and 1.00 (IQR 1.00–1.00) in the high-pressure profile. Bonferroni-adjusted post hoc pairwise comparisons showed significant differences between all three profile pairs (all adjusted $P < 0.001$), with pairwise comparisons indicating lower fertility-intention scores at higher levels of fertility pressure.

Discussion

Principal findings

This study used a person-centred approach to identify heterogeneity in subsequent fertility pressure among parous women in China and yielded three distinct profiles: a moderate-pressure profile with relatively prominent health impairment and childcare pressure, a moderately high-pressure profile with a multidimensional pattern, and a high-pressure profile with prominent child growth and development pressure. More than four-fifths of the participants were classified into the latter two profiles, indicating that substantial subsequent fertility pressure was common in this sample. The profiles differed primarily in their overall level of pressure, while also showing differences in the relative prominence of specific dimensions. This finding illustrates the added value of a person-centred approach over analyses based solely on total or mean scores.

The present findings suggest that subsequent fertility pressure may be better understood as the result of an imbalance between anticipated demands associated with another child and the resources available to absorb those demands. For parous women, the decision about another pregnancy is made in the context of existing parenting responsibilities rather than in isolation [13]. Economic expenditure, employment demands, physical recovery, childcare responsibilities, and expectations regarding the development of existing children may therefore accumulate and interact. When resources such as stable income, employment protection, family support, and accessible childcare are limited, pressures originating in one domain may spill over into others. This may explain why the largest subgroup was not characterised by a single dominant source of pressure but by moderately high pressure across several domains.

The three profiles should also be interpreted as relative configurations within profiles rather than absolute diagnostic categories. For example, health impairment and childcare pressure was the most prominent dimension within the moderate-pressure profile, although its absolute score remained lower than that observed in the two higher-pressure profiles. Similarly, economic, occupational, health, childcare, and family-related burdens were all elevated, with child growth and development pressure being the most prominent dimension within the overall configuration. This distinction is important when interpreting LPA findings and reinforces the need to avoid reducing the profiles to simple “low”, “medium”, and “high” categories.

Interpretation of the three latent profiles

The moderate-pressure profile was the smallest subgroup and showed comparatively lower pressure across most dimensions, with health impairment and childcare pressure emerging as the most salient domain. This pattern suggests that even among women with relatively favourable economic and occupational circumstances, another pregnancy may still be perceived as physically and practically demanding. For women who have already experienced pregnancy, childbirth, postpartum recovery, and childcare, concerns about another pregnancy may be based not only on hypothetical expectations but also on their previous embodied and caregiving experiences. The anticipated physical burden of pregnancy and birth may therefore coexist with concerns about sleep disruption, time scarcity, childcare workload, and the ability to maintain adequate care for existing children.

This finding has particular relevance for maternal and child health and nursing practice. Discussions concerning subsequent fertility should not focus exclusively on reproductive intention or contraceptive needs. For some women, uncertainty about another child may primarily reflect concerns about physical recovery, maternal health, childcare capacity, and the practical feasibility of combining care for multiple children. Preconception counselling, postpartum follow-up, reproductive health assessment, and community nursing services could therefore provide opportunities to identify such concerns and link women with appropriate health and childcare resources [14, 15]. Importantly, these services should support women in evaluating their own circumstances rather than assuming that reducing health concerns should necessarily result in another pregnancy [3].

The moderately high-pressure profile with a multidimensional pattern accounted for nearly two-thirds of the sample and may represent the most common form of subsequent fertility pressure in the surveyed population. No single dimension overwhelmingly defined this group; instead, financial, health, childcare, employment, and child-development concerns coexisted at moderately high levels. This pattern suggests that subsequent fertility pressure often arises from multiple moderate constraints that reinforce one another, rather than from one extreme difficulty.

Such accumulation is important because relatively manageable challenges may become substantial when experienced simultaneously. For example, childcare costs may be tolerable when employment is stable and family support is available, whereas the same costs may become difficult when working hours are inflexible or caregiving support is uncertain. Similarly, concerns about maternal health may become more consequential when women anticipate employment interruption or when formal childcare is unavailable. This interconnectedness may help explain why interventions addressing a single domain in isolation may have limited effects. Financial subsidies, health education, employment protection, and childcare provision are likely to operate through related pathways, and their effectiveness may depend partly on whether other constraints remain unresolved [16].

The high-pressure profile showed the highest scores across all five dimensions and represented approximately one-fifth of the sample. Within this profile, child growth and development pressure was the most prominent dimension, followed by health impairment and childcare pressure. This pattern may indicate that for women already experiencing substantial pressure, concerns about another child extend beyond the immediate demands of pregnancy and infant care to the potential consequences for the upbringing and development of existing children. Women may anticipate that another child would require additional financial expenditure, caregiving time, parental attention, and educational resources, potentially increasing competition for limited family resources. At the same time, the high scores across all five dimensions suggest a broader pattern of cumulative resource constraint, in which financial, temporal, physical, caregiving, and emotional demands compete simultaneously for limited resources.

From a service perspective, this group may be particularly difficult to support through a single intervention. For example, reproductive health counselling alone cannot resolve unaffordable childcare, while childcare provision alone may not sufficiently address unstable employment or financial insecurity. A more coordinated approach may therefore be required, linking maternal and reproductive health services with community childcare, social support, employment-related resources, and family services [16]. Nevertheless, because the profiles were derived statistically at the population level, they should be used to understand patterns of need rather than to categorise individual women clinically [7].

Factors associated with latent profile membership

Household income showed a clear association with latent profile membership. Compared with women from households with annual incomes above RMB 500,000, women with annual household incomes below RMB 100,000 had lower odds of belonging to either the moderate-pressure or moderately high-pressure profile rather than the high-pressure profile. In other words, lower-income women were relatively more likely to be classified into the high-pressure profile. This association is consistent with previous evidence showing that economic resources are central to fertility-related decision-making [2, 17]. However, the present findings suggest that income may influence subsequent fertility pressure through pathways extending beyond the direct monetary cost of another child.

For parous women, lower household income may reduce the family's capacity to buffer multiple forms of uncertainty. Financial constraints may limit access to paid childcare, reduce flexibility in responding to maternal health needs, increase concern about education and housing expenditure, and magnify the consequences of temporary income loss associated with pregnancy or caregiving [18, 19]. In this sense, household income may function not merely as a measure of purchasing power but also as a form of risk-buffering capacity. Families with greater financial resources may be better positioned to purchase services or absorb disruptions, whereas families with fewer resources may have less room to compensate when employment, health, or childcare difficulties occur. This may help explain why lower income was associated with membership in profiles characterised by pressure across several domains rather than only with financial pressure.

At the same time, this finding requires cautious interpretation. The unemployed group was relatively small and may include women with very different circumstances, including those temporarily outside the labour market because of childcare responsibilities. Therefore, employment type should not be interpreted as a simple hierarchy of occupational advantage. Future research should distinguish employment stability, working hours, workplace flexibility, maternity protection, perceived discrimination, and career interruption, as these mechanisms may be more informative than broad employment categories.

Childcare arrangements provided further evidence that time and caregiving resources are central components of subsequent fertility pressure. Women who were primarily responsible for caring for existing children themselves had higher odds of membership in the high-pressure profile than those receiving family support. The significance of this finding extends beyond the availability of an additional caregiver. Self-provided childcare may indicate that women have fewer opportunities to redistribute daily care work, rest, maintain employment, or respond to unexpected demands. The anticipated addition of another child may therefore represent not simply “one more child” but an intensification of an already concentrated caregiving burden.

Although support from grandparents or other relatives may reduce immediate care demands [13], informal family care should not be treated as an unlimited or universally available resource. It may depend on relatives' age, health, proximity, employment, and willingness to provide care and may sometimes introduce additional intergenerational negotiation or conflict [20, 21]. The observed association therefore supports the importance of diversifying childcare resources rather than relying predominantly on families to absorb care responsibilities.

The association between affordable, high-quality childcare and profile membership provides particularly important structural evidence. Compared with women reporting no affordable high-quality childcare services, those with access to either government- or market-provided affordable high-quality childcare had higher odds of belonging to the moderate- or moderately high-pressure profiles rather than the high-pressure profile. The availability of affordable, high-quality childcare was therefore associated with a lower relative likelihood of membership in the high-pressure profile. Several interconnected mechanisms may help explain this association. Reliable childcare can reduce the direct time burden of caregiving, facilitate continued employment, make working schedules more manageable, and reduce dependence on grandparents or other informal caregivers [22]. In turn, these effects may alleviate not only childcare pressure but also financial, occupational, and family-related concerns.

Although the magnitude of the associations differed between government- and market-provided services, both showed associations in the same direction, underscoring the potential importance of effective access to affordable and trusted childcare. For parents, childcare is likely to function as a meaningful resource only when it is affordable, trusted, accessible, stable, and compatible with working hours [2, 22]. Thus, increasing the number of childcare places without ensuring affordability and quality may not produce an equivalent reduction in perceived pressure. The present findings therefore support an emphasis on effective access rather than service supply alone.

Ideal family size was also associated with profile membership. Compared with women who regarded three or more children as ideal, women whose ideal number of children was one or fewer were relatively more likely to belong to the high-pressure profile than to either the moderate- or moderately high-pressure profile. One possible interpretation is that women who envisage a smaller ideal family may perceive another pregnancy as less compatible with their available financial, caregiving, health, or life-course resources. However, the direction of this relationship cannot be determined from the present cross-sectional data. Higher perceived fertility pressure may contribute to a smaller reported ideal family size, while women who already prefer smaller families may also evaluate the demands of another child more negatively. Ideal family size should therefore be interpreted as part of the broader reproductive preference context rather than as a causal determinant of fertility pressure.

A more complex finding concerned lineage-continuation beliefs. Compared with women who disagreed with such beliefs, women who agreed were more likely to belong to the moderate-pressure profile rather than the high-pressure profile, whereas women with a neutral attitude were more likely to belong to either the moderate- or moderately high-pressure profile rather than the high-pressure profile. This finding should be interpreted cautiously and should not be taken to imply that traditional son preference is protective or desirable. Only a small proportion of participants endorsed the belief, and the cross-sectional design does not allow the underlying mechanism to be determined.

Several explanations are possible. Traditional fertility beliefs may be correlated with desired family size, perceived meaning attached to childbearing, or the availability of support from relatives who share similar expectations. Conversely, women who reject lineage-based expectations may differ systematically in

employment, reproductive preferences, family negotiation, or other unmeasured characteristics. The observed association may therefore reflect broader family and sociocultural contexts rather than a direct effect of the belief itself. Future studies should distinguish more clearly among son preference, ideal family size, perceived reproductive pressure from relatives, reproductive autonomy, and actual material or childcare support. Such differentiation would help avoid conflating cultural expectations with practical family resources.

Subsequent fertility pressure and intention to have another child

Overall intention to have another child was low and differed across the three profiles. The moderate-pressure profile showed the highest median fertility-intention score, and Bonferroni-adjusted post hoc comparisons indicated significant differences between all three profile pairs. This pattern is consistent with previous findings suggesting an inverse relationship between fertility-related pressure and subsequent fertility intention [23, 24]. However, the profile-based findings extend this relationship by showing that reproductive intention may be shaped not by a single source of difficulty but by the combined configuration of anticipated demands.

For women who already have children, another pregnancy may be evaluated in relation to the wellbeing of both themselves and their existing family. The anticipated costs of another child may include not only additional expenditure but also possible effects on maternal health, employment continuity, available caregiving time, and the resources that can be devoted to existing children. When several domains are perceived as difficult simultaneously, another pregnancy may therefore appear less compatible with maintaining current family functioning or desired standards of childcare.

The relatively higher intention observed in the moderate-pressure profile is also informative. Even within this group, the median intention score was only 2 on a seven-point scale, indicating that lower pressure alone was not sufficient to produce strong subsequent fertility intention. This suggests that fertility pressure and fertility intention, although related, should not be treated as opposite ends of the same construct [25]. Women may experience manageable pressure yet still prefer not to have another child for reasons not captured by the pressure scale. Conversely, some women experiencing substantial pressure may still desire another child. Reproductive preferences therefore remain multidimensional and should not be inferred solely from socioeconomic or caregiving circumstances.

Because of the cross-sectional design, directionality cannot be established. Higher perceived pressure may weaken intention to have another child, but women who already have weak fertility intentions may also evaluate the anticipated costs of another child more negatively. Both constructs may additionally be influenced by unmeasured factors such as previous pregnancy experiences, partner preferences, family dynamics, or longer-term life plans. Longitudinal research is therefore needed to examine whether transitions between pressure profiles precede changes in fertility intention and, more importantly, whether either predicts subsequent reproductive behaviour [26].

Implications for nursing, maternal health, and public health practice

The findings have several implications for nursing and maternal and child health practice. First, assessment of reproductive needs among parous women should extend beyond asking whether they intend to have another child. Nurses and other healthcare professionals may gain a more meaningful understanding of women's needs by exploring the domains underlying reproductive uncertainty, including previous pregnancy and birth experiences, current health concerns, childcare workload, employment constraints, financial strain, and available family or community support. Second, different patterns of pressure may require different forms of support. Women whose pressure is dominated relatively by health and childcare concerns may benefit from preconception health assessment, counselling regarding pregnancy-related risks, postpartum recovery support, and assistance in accessing childcare [14, 15]. Women experiencing moderately high pressure across several domains may require broader service navigation and coordinated social support. For women in the high-pressure profile, in whom child growth and development concerns are particularly prominent alongside high pressure across all domains, support may need to address not only reproductive and maternal health but also childcare capacity, family resources, and concerns about maintaining adequate care and developmental opportunities for existing children. Third, the findings highlight the limits of approaches that treat low fertility primarily as a matter of individual willingness. Much of the variation between profiles was associated with household resources, employment conditions, caregiving arrangements, and availability of childcare. These are upstream conditions that cannot be addressed solely through individual counselling. Income-sensitive support, accessible and quality-assured childcare, employment protection, flexible working arrangements, and greater sharing of unpaid care may therefore be relevant components of a broader supportive environment [16].

Importantly, the purpose of such measures should not be to encourage women to have additional children. From a maternal and public health perspective, the appropriate objective is to reduce avoidable constraints, improve health and wellbeing, and enable women and families to make reproductive decisions that are consistent with their own preferences. Evaluation of fertility-support policies should therefore consider outcomes such as maternal wellbeing, access to childcare, continuity of employment, caregiving burden, and reproductive autonomy, rather than changes in birth numbers alone [3].

Strengths and limitations

This study has several strengths. The relatively large sample allowed the use of LPA to move beyond average levels of fertility pressure and identify profiles reflecting differences in overall pressure level as well as the relative prominence of specific pressure domains. The analysis further integrated household, employment, childcare, and sociocultural characteristics, providing a more contextualised understanding of the conditions associated with different pressure profiles. Examining subsequent fertility intention across the profiles also provided preliminary evidence regarding the potential behavioural relevance of these patterns.

Several limitations should nevertheless be considered. First, participants were recruited through online convenience sampling, and the sample was disproportionately concentrated in eastern China, urban areas, and women with relatively high educational attainment. The distribution and meaning of the identified profiles may therefore differ among rural women, women with lower socioeconomic status, migrant populations, or women living in regions with

different employment and childcare environments. The profiles should consequently not be interpreted as nationally representative prevalence categories. Second, the cross-sectional design prevents conclusions about temporal or causal relationships. Household resources, employment, childcare arrangements, fertility pressure, and fertility intention may influence one another over time. Longitudinal studies are needed to determine whether women transition between pressure profiles as employment, childcare availability, family resources, or health circumstances change and whether such transitions predict subsequent pregnancy or birth. Third, the study relied on self-reported measures. Although Harman's single-factor test did not indicate a dominant single-factor structure, this procedure cannot exclude common-method bias or socially desirable responding [11, 12]. In particular, sociocultural beliefs and fertility intentions may be sensitive to social expectations. Fourth, intention to have another child was measured using a single item. Although this approach is straightforward, reproductive intention is a complex construct that may include timing, certainty, partner agreement, perceived feasibility, and the distinction between desire and intention. Future studies could use multidimensional measures and examine actual reproductive outcomes. Finally, latent profiles are model- and sample-dependent. Classification does not imply that women naturally fall into fixed categories, and individual women may have probabilities of belonging to more than one profile. In addition, the five scale dimensions contain different numbers of items; therefore, differences in raw dimension scores should not be interpreted as directly equivalent differences in latent severity. Replication in independent and more socioeconomically diverse samples, together with longitudinal validation of profile stability and transitions, would strengthen the robustness and practical value of the findings. In addition, profile membership was assigned according to the most likely latent class for subsequent multinomial logistic regression; therefore, classification uncertainty was not fully propagated into the regression analysis [27].

Conclusions

Subsequent fertility pressure was heterogeneous among the parous women surveyed, and most participants belonged to moderately high- or high-pressure profiles. Intention to have another child differed significantly across profiles and was highest in the moderate-pressure profile. Household resources, childcare arrangements and services, reproductive preferences, and sociocultural beliefs were associated with profile membership. These findings indicate that fertility pressure is patterned by interacting individual, family, social and structural conditions. Public health strategies should integrate childcare, social protection, occupational policy, and reproductive and maternal health services while safeguarding reproductive autonomy. The profiles and their associations should be confirmed in representative, longitudinal studies.

Abbreviations

LPA
Latent profile analysis
AIC
Akaike information criterion
BIC
Bayesian information criterion
aBIC
Sample-size-adjusted Bayesian information criterion
LMRT
Lo–Mendell–Rubin adjusted likelihood ratio test
BLRT
Bootstrap likelihood ratio test
AvePP
Average posterior probability
IQR
Interquartile range
OR
Odds ratio
CI
Confidence interval

Declarations

Ethics approval and consent to participate

This study was conducted in accordance with the principles of the Declaration of Helsinki. The study was approved by the Ethics Committee of Nanjing Maternal and Child Health Hospital (approval no. 2022KY-110-01). All participants received electronic information about the study and provided electronic informed consent before accessing the questionnaire. Participation was voluntary, and all responses were treated confidentially.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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Author Contribution

S.C. designed the study, conducted the questionnaire survey, and drafted and revised the manuscript. L.L. performed data curation and statistical analysis, and contributed to manuscript drafting and revision. Y.L. and L.L. contributed to data collection. A.Z. and Z.Z. provided research supervision. X.F. supervised the study, critically revised the manuscript, and provided funding support. S. C. and L.L. contributed equally to this work and share first authorship. All authors read and approved the final manuscript.

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Data Availability

The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

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Figures

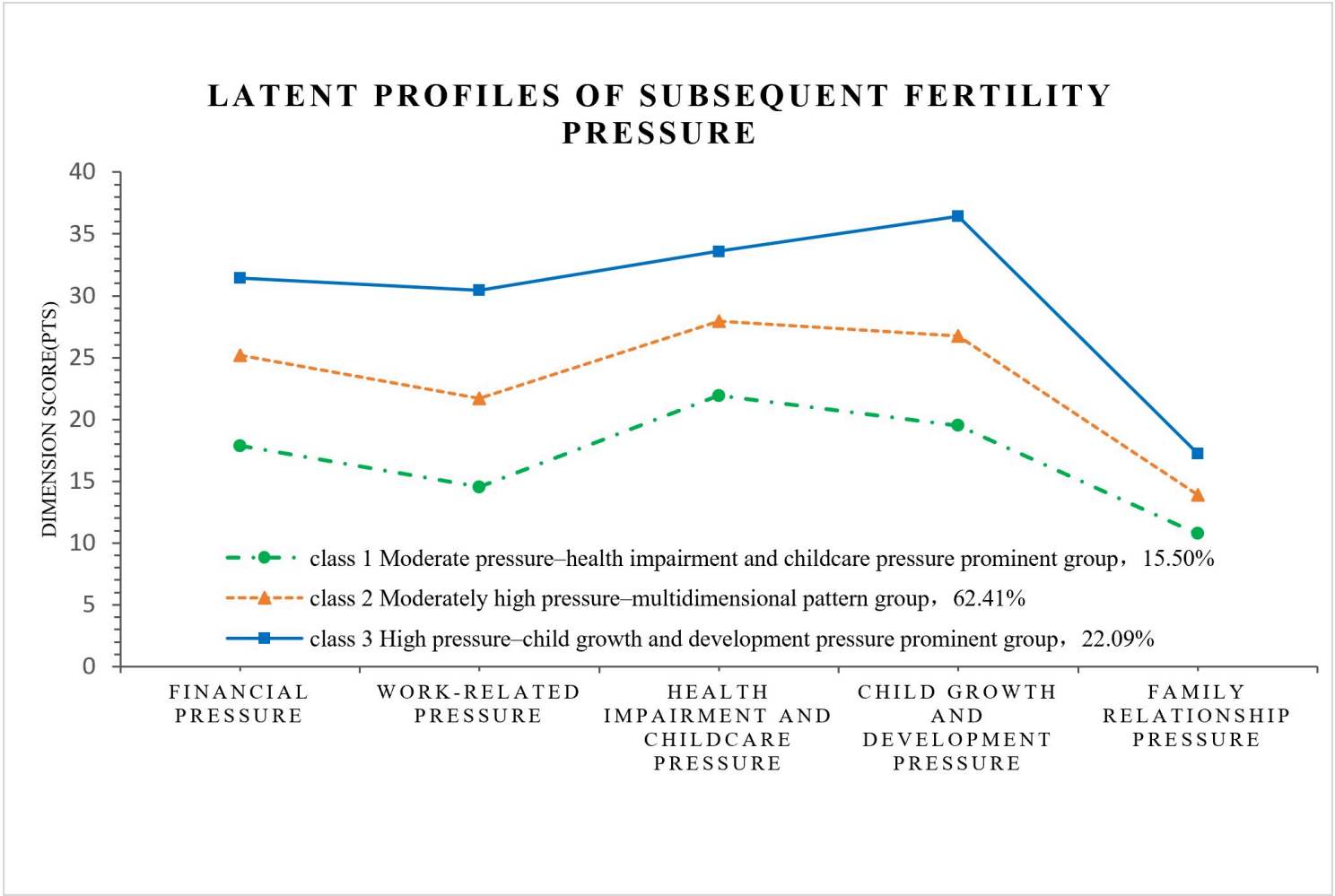


Figure 1

Indicator patterns for the three latent profiles of subsequent fertility pressure

Supplementary Files

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- Additionalfile1.Englishtranslationofthesurveyquestionnaire.pdf