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Assessment of the health literacy mediating role in the relationship between fatalistic tendency and family planning among women

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Abstract

Promoting family planning is an essential public health goal for improving maternal and infant health; however, sociocultural barriers—particularly fatalism—continue to shape women's behaviors and attitudes. This study examined the mediating role of health literacy in the relationship between women's fatalistic tendencies and their family planning attitudes. Using a cross-sectional correlational design, data were collected from 657 married women aged 18–49 in Kırşehir, Türkiye, through 30-cluster sampling. Data were collected through face-to-face interviews conducted during home visits between February 28 and June 1, 2022, using structured questionnaires. Measures included the Fatalistic Tendency Scale, Family Planning Attitude Scale, and the Turkey Health Literacy Scale-32. Data were analyzed using IBM SPSS Statistics v23. Mediation analysis was conducted using PROCESS v3.5 with 5,000 bootstrap samples. Fatalistic tendency was negatively associated with health literacy, while health literacy showed a positive association with family planning attitudes. An indirect effect of fatalistic tendency on family planning attitudes through health literacy was identified. Findings highlight the importance of improving health literacy to mitigate fatalistic beliefs and support informed reproductive decision-making, emphasizing culturally sensitive, interdisciplinary interventions. *(Afr J Reprod Health 2026; 30 [20]:97-110).*

Keywords: Family Planning, Fatalistic Tendency, Health Literacy

Résumé

La promotion de la planification familiale est essentielle à l'amélioration de la santé maternelle et infantile. Toutefois, les obstacles socioculturels, notamment le fatalisme, influencent les attitudes et comportements des femmes. Cette étude a examiné le rôle médiateur de la littératie en santé dans la relation entre les tendances fatalistes et les attitudes envers la planification familiale. Une étude corrélationnelle transversale a été menée auprès de 657 femmes mariées âgées de 18 à 49 ans à Kırşehir, en Türkiye, sélectionnées par échantillonnage en 30 grappes. Les données ont été recueillies lors d'entretiens en face à face à domicile entre le 28 février et le 1er juin 2022. Les instruments comprenaient l'Échelle de tendance fataliste, l'Échelle d'attitude envers la planification familiale et l'Échelle turque de littératie en santé-32. Les analyses ont été réalisées avec IBM SPSS 23 et PROCESS 3.5, en utilisant 5 000 échantillons bootstrap. La tendance fataliste était négativement associée à la littératie en santé, tandis que celle-ci était positivement associée aux attitudes envers la planification familiale. La littératie en santé exerçait un effet médiateur. Ces résultats soulignent l'importance d'interventions interdisciplinaires, culturellement adaptées, visant à améliorer la littératie en santé, atténuer les croyances fatalistes et favoriser des décisions reproductives éclairées. *(Afr J Reprod Health 2026; 30 [20]: 97-110).*

Mots-clés : Planification familiale, tendance fataliste, littératie en santé.

Introduction

In 2023, over 700 women died daily from preventable pregnancy- and childbirth-related causes—nearly one every two minutes. More than 90% occurred in low- and lower-middle-income countries, highlighting global inequalities in essential health Access.[1] Unintended pregnancies, a major contributor, often lead to unsafe abortions and severe complications. SustainableDevelopment Goals 3.7 promotes universal access to sexual and reproductive health, emphasizing family planning (FP) to reduce unintended pregnancies and maternal mortality.[2] However, access alone is insufficient; sociocultural and psychological barriers still limit women's utilization of these services.

One major barrier is fatalism—the belief that life events are predetermined by fate or divine will. Fatalistic tendency refers to an individual's measurable inclination toward such beliefs.[3] In this study, it is defined as a psychometric construct

reflecting endorsement of fatalistic beliefs. Such beliefs may discourage women's reproductive decision-making, leading them to view unintended pregnancies as inevitable. Evidence shows that fatalistic tendency is associated with lower use of modern contraceptives and higher rates of unintended pregnancies.[4,5] Fatalistic tendencies can reduce women's sense of agency and reinforce passive health behaviors, particularly in patriarchal societies with limited autonomy. While such beliefs may function as coping mechanisms in restrictive settings, they paradoxically hinder informed reproductive choices even when services are available.[6]

Health literacy (HL) the ability to access, understand, evaluate, and use health information—acts as a key cognitive and functional determinant of health behavior. Higher literacy promotes awareness of reproductive rights, informed choices, and use of modern contraceptives.[7] Conversely, low literacy sustains fertility misconceptions, limits healthcare utilization, and worsens reproductive outcomes.[8] In Türkiye, a national study reported that only 31.1% of individuals had adequate HL.[9]

Recent evidence suggests that health literacy is an important factor in women's reproductive health decisions and contraceptive preferences. In a study conducted among married women aged 18–49 in Türkiye, health literacy levels were found to be moderate, and women with higher health literacy were more likely to report a preference for modern contraceptive methods. Although no significant relationship was found between current contraceptive method use and health literacy, the findings indicate that improving women's health literacy may support more informed and effective family planning choices.[10]

Furthermore, community-based health literacy interventions have been shown to improve individuals' ability to access, understand, and use health information, leading to positive changes in health behaviors and decision-making processes. Such interventions often include educational programs, community participation, and the involvement of healthcare professionals to support individuals in making informed health decisions. Strengthening health literacy through community-based strategies may therefore play an important role in promoting healthier behaviors and improving reproductive health outcomes.[11]

Attitudes toward FP include beliefs, emotions, and intentions regarding fertility regulation and contraceptive use, significantly influencing reproductive behaviors and outcomes. Positive attitudes promote contraceptive use, fertility control, and maternal–child health.[7-9,12] These attitudes are shaped by experiences, sociocultural norms, perceived contraceptive effectiveness, and trust in healthcare systems.[5] Women's fatalistic tendencies, HL, and FP attitudes are influenced by individual, sociodemographic, cultural, and psychological factors. Fatalistic beliefs are more common among women with lower education, limited income, or rural/traditional residence, where patriarchal norms restrict autonomy.[5,6] HL relates to education, employment, healthcare access, and information exposure, with younger, educated, and economically empowered women showing higher levels and making informed choices.[8,9,13] FP attitudes are similarly shaped by contraceptive experiences, cultural and religious norms, spousal support, and perceptions of safety and efficacy.[4,7,12] Together, these factors interact with structural determinants influencing reproductive behavior, reinforcing the study's theoretical model and clarifying barriers and facilitators of FP decisions.

This study takes a comprehensive approach to examine the relationship between fatalistic tendency and FP attitudes, emphasizing the mediating role of HL. Based on the Health Belief Model, fatalistic tendencies are conceptualized as perceived barriers, whereas HL enhances perceived benefits, control, and readiness to act.[14,15] However, research on their combined effects is limited, leaving gaps in understanding the cognitive and sociocultural dynamics of reproductive decision-making. Many women may hold negative contraceptive attitudes due to internalized norms, psychological constraints, or limited autonomy. Ignoring these underlying factors risks overlooking why some women hesitate or avoid FP services despite their availability.

This study aimed to examine the relationship between fatalistic tendency and women's attitudes toward family planning and to

evaluate the mediating role of health literacy in this relationship.

Methods

Study setting

This study was conducted in the city center of Kırşehir, Türkiye. The study population consisted of married women aged 18–49 years registered at Family Health Centers (FHCs) located in the city center.

Study design

This research employed a cross-sectional analytical design with a correlational approach and mediation analysis.

Sample size

The target population consisted of approximately 27,000 married women aged 18–49 years registered at Family Health Centers in the city center of Kırşehir. The minimum sample size was calculated using Epi Info version 7.2.6.0, assuming a 27.6% prevalence of adequate health literacy, a 95% confidence level, and a 5% margin of error, resulting in a minimum required sample of 304 participants.[9]

Because cluster sampling was planned, the sample size was multiplied by a design effect of 2, increasing the required sample to 608 participants. To compensate for potential non-response and incomplete questionnaires, the target sample size was increased to 660 participants.Participants were selected using the 30-cluster sampling method, which is commonly used in field-based epidemiological studies.[16] Clusters were determined from Family Health Centers located in neighborhoods with different socioeconomic levels in the city center. In accordance with the 30-cluster design, 22 women were included from each cluster to ensure equal distribution. Family Health Centers were grouped into three clusters according to their geographical location, and each cluster was further divided into 3 subclusters. The number of married women aged 18–49 to be included from each subcluster was determined by weighting the population according to the population-to-sample ratio. Households to be visited were then selected using a simple random sampling method, and eligible women were invited to participate in the study. After data cleaning, three questionnaires were excluded due to extreme outliers, and the final sample consisted of 657 women.

Cluster determination

In Kırşehir's city center, healthcare is delivered by 47 family physicians. Their service areas were stratified by neighborhood socio-economic status (low, medium, high) and proportionally weighted by population density. Thirty clusters were then selected using simple random sampling, and within each cluster, household addresses were randomly chosen until the target sample size was reached. In total, data were collected through face-to-face interviews with 660 women.

Data collection

Data were collected between February 28 and June 1, 2022, through home visits and face-to-face interviews using structured questionnaires. During data cleaning, three questionnaires were excluded due to extreme outliers statistically inconsistent with the overall distribution. These cases, identified by z-scores exceeding ±3 on multiple key variables, were removed to avoid biasing the results. The final sample comprised 657 participants.

Inclusion criteria

Women were eligible to participate if they met all of the following criteria: being registered with a Family Health Center in Kırşehir, aged 18–49 years, legally married, and currently residing in Kırşehir.

Exclusion criteria

Women who declined to participate in the study, were unable to communicate effectively during the face-to-face interview, or submitted incomplete questionnaires were excluded from the study. In addition, questionnaires identified as extreme outliers during the data cleaning process were removed from the final analysis.

Measurement tools

Data were collected using a structured Personal Information Form and three standardized scales. The Personal Information Form included 41 items: 9 on sociodemographic characteristics, 15 on fertility history, and 17 on FP attitudes and behaviors. All instruments were developed following an extensive literature review.4[5,17-21] THLS-32 measured HL, the Family Planning Attitude Scale (FPAS) assessed FP attitudes, and the Fatalistic Tendency Scale (FTS) evaluated fatalistic tendencies. Permission to use all standardized scales was obtained from the original authors via email.

THLS-32

The THLS-32 developed by Okyay and Abacıgil (2016) was used to assess health literacy levels. The scale was developed based on the conceptual framework of the European Health Literacy Survey and is designed to evaluate health literacy among individuals aged 15 years and older. The scale includes 32 items and consists of two main dimensions: *treatment and services* and *disease prevention and health promotion*. These dimensions are evaluated across four information-processing competencies: *accessing, understanding, evaluating, and applying health-related information*.

Each item is rated on a five-point response scale ("very easy", "easy", "difficult", "very difficult", and "I do not know"). During scoring, responses are coded from 4 (very easy) to 0 (I do not know). The total score is standardized using the formula Index = (mean – 1) × (50/3), resulting in a score ranging from 0 to 50, where higher scores indicate higher health literacy levels. Health literacy levels are categorized as *inadequate (0–25)*, *problematic/limited (>25–33)*, *adequate (>33–42)*, and *excellent (>42–50)*.

In the original study, the Cronbach's alpha coefficient was 0.93 for the overall scale, 0.88 for the treatment and services dimension, and 0.86 for the disease prevention and health promotion dimension.[22] In the present study, the Cronbach's alpha coefficient was 0.95 for the overall scale, 0.91 for the treatment and services dimension, and 0.92 for the disease prevention and health promotion dimension.

FPAS

The FPAS was developed by Orsal and Kubilay (2006) to assess attitudes toward family planning. The scale consists of 34 items and is structured as a five-point Likert-type scale. Responses are scored from 1 (strongly agree) to 5 (strongly disagree). The total score ranges from 34 to 170, with higher scores indicating more positive attitudes toward family planning.

The scale includes three subscales: *Attitudes of Society toward Family Planning* (15 items; items 1–15; score range 15–75), *Attitudes toward Family Planning Methods* (11 items; items 16–26; score range 11–55), and *Attitudes toward Birth* (8 items; items 27–34; score range 8–40).

The original study reported a Cronbach's alpha coefficient of 0.90 for the overall scale.[23] In the present study, the Cronbach's alpha coefficient was 0.93 for the total scale, while the reliability coefficients for the subscales were 0.88 for Attitudes of Society toward Family Planning, 0.93 for Attitudes toward Family Planning Methods, and 0.77 for Attitudes toward Birth.

FTS

The FTS developed by Kaya and Bozkurt (2015) was used to assess individuals' fatalistic beliefs. The scale consists of 24 items and includes four subscales: *Predetermination*, *Personal Control*, *Superstition*, and *Luck*. The total score ranges from 24 to 120, with higher scores indicating higher levels of fatalistic tendency. The *Personal Control* subscale is reverse-coded, and higher scores indicate a lower perception of personal control.

In the original study, the Cronbach's alpha coefficient was reported as 0.86 for the total scale, with reliability coefficients of 0.86 for Predetermination, 0.78 for Personal Control, 0.81 for Superstition, and 0.71 for Luck.[6] In the present study, the Cronbach's alpha coefficient was 0.81 for the overall scale, while the subscale reliability coefficients were 0.83 for Predetermination, 0.79 for Personal Control, 0.83 for Superstition, and 0.63 for Luck.

Ethics approval

This study was approved by the Ethics Committee on January 5, 2022 (Approval No. 2022/34). All participants were informed about the study's purpose and procedures and provided both written and verbal consent to participate voluntarily.[24] The study was conducted in accordance with the ethical principles of the Declaration of Helsinki.

Statistical analysis

Data were analyzed using IBM SPSS Statistics v23. Descriptive statistics summarized the data. Normality was assessed via skewness and kurtosis.[25] Group comparisons were performed using independent samples t-tests and one-way ANOVA with LSD post hoc tests. Pearson correlation analysis was used to examine the relationships between fatalistic tendency, health literacy, and family planning attitudes.[26] The mediating role of HL between FTS and FPAS was tested using PROCESS v3.5 (Model 4) with 5,000 bootstrap samples. Statistical significance was set at $p \leq 0.05$.

Research hypotheses

H0: There is no significant relationship between health literacy and attitudes toward family planning.
H1: Fatalistic tendency is negatively associated with HL.
H2: HL is positively associated with attitudes toward FP.
H3: Fatalistic tendency is negatively associated with attitudes toward FP.
H4: HL mediates the effect of fatalistic tendency on attitudes toward FP.

Results

The participants' mean age was 36.6 ± 7.9 years. Most participants were college graduates and reported moderate income levels, and a considerable proportion were employed. A notable proportion of women reported a history of unintended pregnancy and miscarriage, and some had less than a two-year interval between their last two pregnancies. Regarding family planning, the majority of participants reported using a contraceptive method, most of which were modern methods (Table 1).

Table 2 shows participants' mean scale scores and health literacy levels based on the THLS-32. Over half of the participants demonstrated adequate or excellent health literacy. The mean number of living children was 2.1 ± 1.1. Most participants reported using a contraceptive method, and the majority of these were modern methods.

Table 3 presents the comparison of women's characteristics with their mean THLS-32, FPAS, and FTS scores. Women with a university education, employment in the healthcare sector, and higher income levels had significantly higher THLS-32 and FPAS scores and lower FTS scores. Post hoc comparisons revealed that women aged 18–24 had significantly higher THLS-32 scores than those aged 35–44 and 45–49 ($p < 0.05$). In addition, women with a college education had significantly higher THLS-32 and FPAS scores and lower FTS scores compared with women with lower education levels ($p < 0.05$). Similarly, higher income levels were associated with higher THLS-32 and FPAS scores and lower FTS scores ($p < 0.05$).

Table 4 presents the mediation analysis examining the role of THLS-32 in the relationship between FTS and FPAS. FTS was significantly associated with THLS-32 ($\beta = –0.130$, $p = 0.001$). In the model including both variables, health literacy was a significant positive predictor of FPAS ($\beta = 0.285$, $p < 0.001$). The indirect effect of FTS on FPAS through THLS-32 was significant ($\beta = –0.057$, 95% CI [–0.097, –0.021]), indicating a mediating role of health literacy.

Figure 1 illustrates the total and mediating effects of fatalistic tendency (FTS) on family planning attitudes (FPAS). In the initial model, FTS showed a significant negative direct effect on FPAS. When health literacy (THLS-32) was included as a mediator, FTS negatively predicted health literacy, while health literacy positively

Table 1: Sociodemographic characteristics, Fertility characteristics and FP status of women participating in the study

Variables (n=657)		n	%	Variables (n=657)		n	%
Age (36.6±7,9) (min: 18-max: 49))							
Number of Pregnancies (2.6±1.6) (min: 0- max: 13)							
Average Number of Living Children (2.1±1.1) (min: 0- max: 6)							
Average Age	18-24	4	.7	**Unintended Pregnancy Experience**	Yes	31	9.9
	25-34	26	4.4		No	26	0.1
	35-44	58	9.3				
	45-49	29	9.6				
Religious Beliefs	Muslim	657	100.0	**History of Miscarriage**	Yes	162	24.7
					No	495	75.3
Highest Educational Attainment*	Primary School	126	19.1	**Type of Miscarriage (n=162)**	Voluntary	29	17.9
	Middle School	92	14.0		Involuntary	133	82.1
	High School	208	31.7				
	College	231	35.2				
Family Type	Extended	71	10.8	**Interval Between Last Two Pregnancies (n=502)**	Less Than Two Years	134	26.7
	Nuclear	586	89.2		Two Years or More	368	73.3
Working	Yes	259	39.4	**Use of FP Methods**	Yes	565	86.0
	No	398	60.6		No	92	14.0
Income Assessment	Low	23410	3.5	**Type of FP Method Used (n=565)**	Modern	447	79.1
	Moderate	224	62.4		Traditional	118	20.9
	High		34.1				

n=Sample size, *Educational status categories were based on the Turkish education system classification.

Table 2: Women's fertility characteristics, family planning status, and scale mean scores

Characteristic	n	%
Number of Pregnancies (2.6±1.6) (min: 0- max: 13)		
Average Number of Living Children (2.1±1.1) (min: 0- max: 6)		
Unintended Pregnancy Experience (n=657)		
Experienced Unintended Pregnancy	131	19.9
Did Not Experience Unintended Pregnancy	526	80.1
History of Miscarriage (n=657)		
Experienced Miscarriage	162	24.7
Did Not Experience Miscarriage	495	75.3
Type of Miscarriage (n=162)		
Voluntary Miscarriage	29	17.9
Involuntary Miscarriage	133	82.1
Interval Between Last Two Pregnancies (n=502)		
Less Than Two Years	134	26.7
Two Years or More	368	73.3
Use of FP Methods (n=657)		
Uses FP Method	565	86.0
Does Not Use FP Method	92	14.0
Type of FP Method Used (n=565)		
Modern Method	447	79.1
Traditional Method	118	20.9
THLS-32 Level		
Inadequate HL	79	12.0
Problematic-Limited HL	226	34.4
Adequate HL	202	30.7
Excellent HL	150	22.8
Scales	$\bar{X}$ **±SD**	**Min-Max**
FTS	65.0±11.5	26.0-107.0
FPAS	128.9±17.7	49.0-165.0
THLS-32	34.5±8.7	0-50.0

n=Sample size, X̄±SD=Mean ± Standard Deviation, THLS-32= Turkey Health Literacy Scale-32, FPAS= Family Planning Attitude Scale, FTS= Fatalistic Tendency Scale

Table 3: Comparison of THLS-32, FPAS, and FTS mean scores according to women's characteristics

Variables		n	THLS-32 $\bar{X}$±SD	p	FPAS$\bar{X}$±SD	p	FTS$\bar{X}$±SD	p
Age[a]	18-24	44	36.3±8.3	***0.033***	129.0±17.6	0.308	67.4±9.6	***0.002***
	25-34	226	35.7±8.8		130.0±18.3		65.0±10.4	
	35-44	258	33.8±8.7		128.9±16.6		63.3±12.5	
	45-49	129	33.5±8.5		126.5±18.6		67.8±11.1	
Last graduated school[a]	Primary School	126	31.3±8.1	***0.000***	121.5±15.6	***<0.000***	67.3±9.5	***0.001***
	Middle School	92	34.2±8.9		124.2±15.5		67.3±11.3	
	High School	208	34.8±8.5		128.1±17.1		67.0±10.4	
	College	231	36.2±8.5		135.5±17.8		61.3±12.4	
Family type[b]	Extended	71	33.2±8.4	0.188	124.1±19.2	***0.016***	65.1±11.0	0.996
	Nuclear	586	34.7±8.7		129.5±17.4		65.1±11.6	
Working[b]	Yes	259	35.2±8.9	0.119	131.7±17.9	***0.001***	63.5±12.3	***0.005***
	No	398	34.1±8.6		127.0±17.3		66.1±10.8	
Whether she is a health worker[b]	Health worker	65	37.5±8.3	***0.004***	137.0±19.4	***<0.000***	60.7±10.8	***0.001***
	Not a health worker	592	34.2±8.7		128.0±17.3		65.6±11.4	
Self-reported income level[a]	Low	23	33.2±9.2	***0.011***	122.8±19.5	***0.037***	65.8±9.8	***0.047***
	Moderate	410	33.8±8.6		128.1±17.6		65.9±11.6	
	High	224	35.9±8.7		131.0±17.5		63.5±11.2	
Interval Between Last Two Pregnancies(n=502) [b]	Less Than Two Years	134	34.2±8.9	0.877	127.0±16.0	0.086	66.0±11.3	0.440
	Two Years or More	368	4.1±8.7		128.0±18.7		65.1±11.9	
Use of FP Methods (n=657)[b]	Yes	565	34.5±8.8	0.440	129.1±17.5	0.386	65.1±11.7	0.783
	No	92	35.2±7.6		127.4±18.4		64.8±10.1	
Type of FP Method Used (n=565) [b]	Modern	447	34.4±8.7	0.906	129.5±17.3	0.372	65.0±11.6	0.501
	Traditional	118	34.5±9.6		127.8±18.3		65.8±11.9	
Who made the decision about the contraceptive method used?[a]	Recommended by a physician	83	32.2±8.6	0.071	132.1±17.4	0.195	65.4±12.0	***p=0.016***
	Recommended by Healthcare worker	157	34.5±9.3		127.2±15.9		67.5±11.2	
	Self-decided	304	35.0±8.4		129.1±18.2		64.0±11.8	
	Requested by spouse	24	35.4±10.6		131.9±19.1		62.8±10.3	

a= ANOVA, b=Independent t test, n=Sample size, THLS-32= Turkey Health Literacy Scale-32, $\bar{X}$±SD=Mean ± Standard Deviation, FPAS= Family Planning Attitude Scale, FTS= Fatalistic Tendency Scale, $p < 0.05$ was considered statistically significant

Table 4: Analyzing the mediating ınfluence of THLS-32 score on the relationship between FTS score and FPAS score

Dependent Variables	Independent Variables	β1 (Bootstrap %95 CI)	β2	Standart Error(SE)	t	p	F	p	R^2
THLS-32	Constant	40.989 (37.185 – 44.794)		1.938	21.155	**<0.001**	11.332	**0.001**	0.017
	FTS	-0.099 (-0.156 - -0.041)	-0.130	0.029	-3.366	**0.001**			
FPAS	Constant	115.064 (105.377 – 124.751)		4.933	23.324	**<0.001**	32.267	**<0.001**	0.090
	FTS	-0.096 (-0.21 – 0.018)	-0.063	0.058	-1.660	0.097			
	THLS-32	0.581 (0.43 – 0.732)	0.285	0.077	7.576	**<0.001**			
FPAS	Constant	138.876 (131.095 – 146.658)		3.963	35.046	**<0.001**	6.569	**0.011**	0.010
	FTS	-0.154 (-0.272 - -0.036)	-0.100	0.060	-2.563	**0.011**			
Indirect Effect									
		β1 (%95 CI)	SE						
FTS---> THLS-32---> FPAS		-0.057 (-0.097 - -0.021)	0.020						

THLS-32 = Turkey Health Literacy Scale-32, FPAS = Family Planning Attitude Scale, FTS = Fatalism Tendency Scale, β_1 = Unstandardized beta coefficient, β_2 = Standardized beta coefficient, CI = Confidence Interval, R^2 = Coefficient of determination, p = Significance level, F = F-statistic, t = t-statistic, Bold p-values indicate statistical significance at $p < 0.05$.

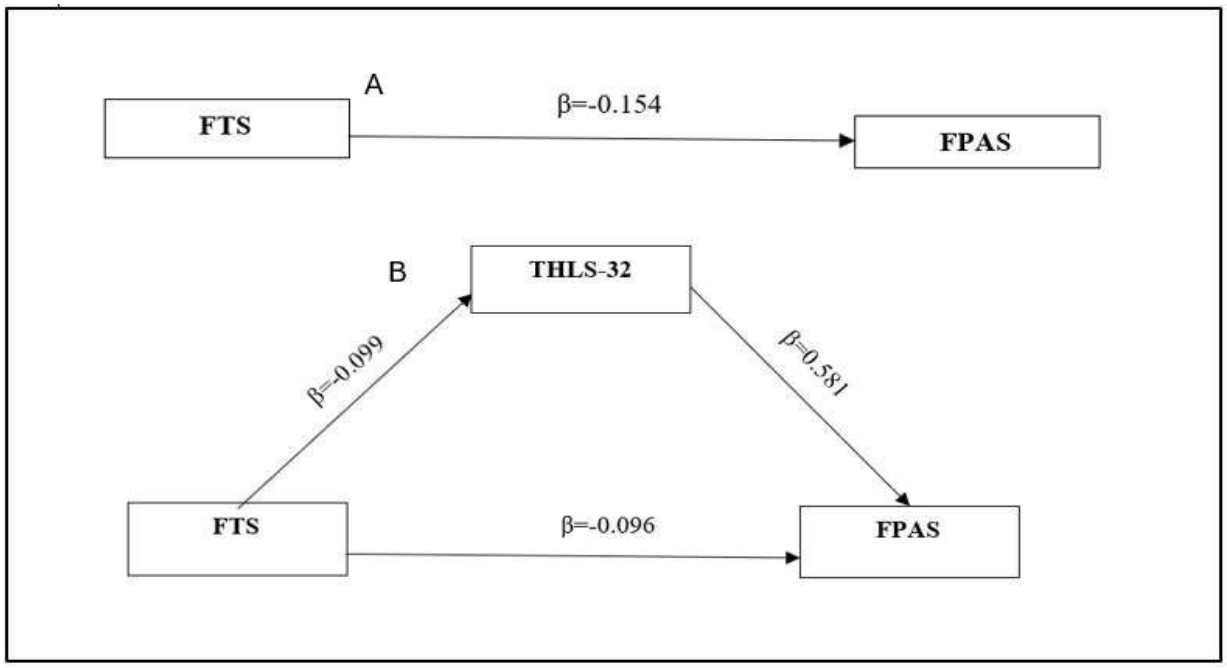


FIGURE 1A. Total Effect of FTS on FPAS
FIGURE 1B. The Mediating Model of the Indirect Effect of FTS Score on FPAS Score Through THLS-32 Score

Note: FTS = Fatalism Tendency Scale; FPAS = Family Planning Attitude Scale; β = Standardized beta coefficient.

predicted FPAS. The direct effect of FTS on FPAS decreased but remained negative, indicating a partial mediating role of health literacy.

Discussion

Fatalistic tendencies reduce perceived control over life events and motivation to seek or use health information. In this study, higher fatalism was significantly associated with lower HL. Similarly, previous research has demonstrated that fatalistic beliefs are associated with poorer health behaviors and self-care practices, while higher self-efficacy is linked to improved engagement in health-promoting behaviors.[27] A study in Türkiye also found that women with lower HL had stronger fatalistic tendencies.[28] This association may reflect cultural norms, personal experiences, and religious beliefs.

HL is crucial for promoting awareness and informed reproductive choices, particularly regarding FP methods and reproductive rights. The European HL Model associates HL with informed decision-making and health autonomy.[29] In this study, 53.5% of participants had adequate or excellent HL, exceeding national and international averages.[13,30] This relatively high rate may reflect the region's proximity to the capital, developed infrastructure, and high proportion of public employees—factors linked to higher education and health awareness.

Women with higher HL are more likely to engage with healthcare services and make informed fertility decisions. A study in Ghazni, Afghanistan, found that women with higher HL were significantly more likely to use contraceptives deliberately and with better understanding.[31] Likewise, research in eastern Uganda showed that HL-focused interventions increased contraceptive uptake.[8] However, some studies found no significant link between HL and FP attitudes.[7] These mixed findings highlight the role of sociocultural factors; among Muslim women, for instance, cultural norms and limited access to reliable information may reinforce beliefs that FP methods are religiously impermissible, leading to negative attitudes. Similarly, evidence from Arab countries indicates that sociocultural norms and

gender roles play a critical role in shaping reproductive attitudes and contraceptive behaviors. A recent regional review reported that cultural expectations regarding motherhood, gender dynamics, and disparities in access to reproductive health services significantly influence family planning decisions among women in the Arab region.[32]

Fatalistic tendency is a key factor influencing FP attitudes. A study in Iğdır, Türkiye, found that individuals with higher fatalism held more negative views toward modern FP methods.[5] Likewise, research among elderly African American women in the southeastern U.S. showed that stronger fatalistic beliefs were associated with lower participation in breast cancer screenings.[3] Together, these findings indicate that fatalism serves as a significant psychological barrier to healthcare utilization.

A key finding of this study is the partial mediating role of HL in the relationship between fatalistic tendency and FP attitudes. The analysis indicated that higher HL levels mitigate the negative impact of fatalistic beliefs on FP attitudes. These results align with the Health Belief Model, which conceptualizes fatalism as a *perceived barrier* and HL as enhancing perceived benefits and readiness to act.[14]

Women's HL, FP attitudes, and fatalistic tendencies are influenced by sociodemographic factors such as age, education, employment, income, and family structure. In this study, university-educated, employed, and higher-income women had significantly higher HL and FP attitude scores and lower fatalism. These results are consistent with findings from Türkiye, showing that higher education enhances access to and use of health information, promoting positive FP attitudes.[33] Conversely, women with lower education often struggle to comprehend FP-related information.4,[5,34] Socioeconomic status is also critical; women with higher income and stable employment are better positioned to access and apply health knowledge.[35] For instance, a study in Tanzania linked television ownership—an indicator of economic status—to greater FP knowledge.[4] Similarly, a national study conducted among women in Saudi Arabia reported that fertility attitudes varied significantly according to sociodemographic characteristics such as age, marital status, education, and occupation, highlighting the importance of social and demographic determinants in shaping women's reproductive perspectives.[36]

Age also affects these outcomes. In this study, HL was highest among women aged 18–24, while FP attitudes peaked at 25–34, though not significantly. Fatalism was strongest among the youngest (18–24) and oldest (45–49) women, possibly due to limited autonomy in youth and traditional norms or reduced engagement with health resources in later life. The literature presents mixed findings: Ethiopian women aged 35–39 had the highest HL[37], whereas Afghan data showed HL declined with age.[31] Regarding FP attitudes, women aged 18–31 often reported more positive views, though not significant[38], while in Senegal, women aged 35–39 showed higher modern FP use.[7] In eastern Türkiye, fatalism increased with age.[5] These variations likely reflect differences in life stage, fertility goals, access to information, and sociocultural perceptions of FP. This study raises an important question: to what extent do women in gendered social structures possess genuine agency in fertility and FP decisions? Women's autonomy depends not only on their HL levels but also on social norms shaped by spouses, families, and communities. Therefore, HL interventions should adopt a gender-sensitive approach, promoting behavioral change both at the individual level and within the broader sociocultural context. In line with the research questions of this study, these findings suggest that the relationship between fatalistic tendencies, health literacy, and family planning attitudes should be interpreted within the broader context of women's autonomy in reproductive decision-making. Strengthening women's access to health information and decision-making capacity may help mitigate the negative influence of fatalistic beliefs on family planning attitudes.

Limitations

The questionnaire's 25–30-minute length may have led some participants—particularly those with lower education or limited attention—to provide rushed responses. Given the sensitivity of FP and

reproductive health topics, social desirability bias may have influenced participants to provide socially acceptable responses. Moreover, the cross-sectional design prevents causal inference; although the mediation model demonstrates associations among fatalistic tendency, HL, and FP attitudes, it cannot establish causality. Finally, as the sample included only married women from a province near Türkiye's capital, the findings may not generalize to more rural or culturally diverse populations.

Conclusion

Fatalistic tendency was negatively associated with both health literacy and family planning attitudes, whereas health literacy showed a positive relationship with family planning attitudes. Health literacy also demonstrated a partial mediating effect, indicating that higher health literacy levels may reduce the negative impact of fatalistic beliefs on women's attitudes toward family planning. Expanding culturally sensitive and gender-responsive interventions, supported by healthcare professionals and community leaders, may enhance the accessibility and effectiveness of family planning services. Future studies should further explore the sociocultural mechanisms shaping fatalism and reproductive behavior and include men to provide a more comprehensive understanding of family planning dynamics.

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Conflict of ınterest

The authors declare that there are no conflicts of interest, financial or otherwise, related to the content of this manuscript.

Data Availability statement

To access the data analyzed in this study, please contact the corresponding author.

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Contribution of Authors

SA and FÇ contributed to the conception and design of the study, data collection, and preparation of the manuscript. Sümeyye Ahi additionally performed the statistical analyses and finalized the manuscript. Both authors critically reviewed and approved the final version of the manuscript.

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