

The Role of the COVID-19 Pandemic on Childbearing Intentions in Iranian Women: A Path Analysis

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Abstract

Background: The novel Coronavirus disease is a newly-emerged global challenge that has rapidly spread throughout the world. The COVID-19 pandemic may lead to couples not being physically and mentally ready to assume a parenting role. Given the changes in reproductive behaviors and the lack of accurate information about childbearing factors during the Coronavirus pandemic, the present study investigates the role of the COVID-19 pandemic in Iranian couples' childbearing intentions based on the theory of planned behavior (TPB) model.

Methods: The present descriptive-analytical, cross-sectional, web-based study was conducted on 400 married Iranian women in their reproductive age. Sampling was carried out over four months from 12 July 2020 using official online social networks popular among the public. Data were collected using a demographic checklist and the researcher-made questionnaire entitled "Factors related to childbearing intentions during the COVID-19 pandemic", which was designed based on the main constructs of the planned behavior model. Data were then analyzed in AMOS-24 using path analysis.

Results: The mean age of the participants was 33.41 years. Testing the indirect relationships of the mediation model effect showed a positive relationship between knowledge ($\beta = 0.226, p < .001$) and subjective norms ($\beta = 0.155, p = .001$) about COVID-19. Anxiety about COVID-19 mediated the relationship of knowledge ($\beta = .105, p = .009$), attitude ($\beta = -0.125, p = .002$), subjective norms ($\beta = .238, p < .001$), and perceived behavioral control ($\beta = .513, p < .001$) about COVID-19 with childbearing intentions.

Conclusions: Childbearing intentions had a direct relationship with knowledge, subjective norms, and perceived behavioral control in relation to COVID-19, and COVID-19-induced anxiety had a mediating role among the TPB constructs for performing an intended behavior (childbearing desire). Designing appropriate interventions to increase childbearing desires through anxiety-reducing and relaxation techniques will prove more effective.

Background

The novel Coronavirus disease is a newly-emerged global challenge that has rapidly spread throughout the world [1]. COVID-19 disease was first reported in late December 2019 in Wuhan, China, and subsequently affected many countries, including Iran [2]. COVID-19 is highly contagious and affects all age groups [3]. According to the World Health Organization's reports, as at 18th December 2020, a total of 75,633,879 known cases of COVID-19, resulting in 1,674,511 deaths due to complications of the disease, had occurred in the world [4]. With the increase in the prevalence of COVID-19, people's concerns and anxiety grow too [5], and as the frequency of infections and deaths by COVID-19 rises, people experience more mental problems such as depression, stress, and anxiety (especially financial anxiety) [6–8]. In a similar vein, for up to one year after the SARS epidemic of 2003–2004, couples experienced high levels of anxiety and stress and showed signs of depression and posttraumatic stress [9].

Moreover, given that most couples of reproductive ages are likely to get pregnant, they inevitably have to make a decision about the right time to have children [10]. Physical and mental readiness and having no diseases are the main factors involved in couples' decision-making about the right time to have children [11]. The COVID-19 pandemic may make couples physically and mentally unprepared to assume a parenting role, since there is a limited range of information about this disease, and as time passes by, new information is released about how it affects people, the mechanism of the virus, and its emergence and symptoms [12]. This limited proven scientific information about COVID-19 has faced experts and the general public with such questions as the possibility of maternal-fetal virus transmission, maternal and fetal abnormalities during pregnancy, virus transmission through sex, possible virus transmission during childbirth, breastfeeding, etc., and has also forced service providing systems to provide counseling to couples before childbearing. The information limitations in this area exacerbate people's fears and concerns, and appear to affect their childbearing intentions [13].

On the one hand, some studies have suggested that women's likelihood of infection with the coronavirus increases during pregnancy and they could also transmit the virus to their fetus [14, 15]; on the other hand, some studies have reported the possibility of testicular damage and infertility in men who contract COVID-19 [16–17]; these findings can make it difficult for couples to choose the right time for childbearing. Consequently, deciding about childbearing in this period is a highly important matter. A study conducted in Italy showed that the COVID-19 pandemic affects childbearing intentions, but made no reference to the factors predicting childbearing intentions during this period [13].

Therefore, since reproduction is a voluntary behavior that is affected by many factors, for a more accurate explanation of this behavior, it is better to investigate these factors through behavior change theories. Various studies have investigated reproductive behaviors using behavior change theories [18–20]. One of the theories of interest to demographers in this area is the Theory of Planned Behavior (TPB), designed by Ajzen in 1991 [21]. According to this theory, a behavioral intention (childbearing desire in this instance) is the main determinant of behavior, and the intention to perform a reproductive behavior is affected by three sets of factors, including the subject's attitude toward the behavior, subjective norms, and perceived behavioral control [22, 23]. Attitude reflects the subject's positive or negative evaluation of conducting a certain behavior; norms refer to the fact that perceived social pressures may make a person perform or not perform a particular behavior; and finally, perceived behavioral control means the perceived difficulty or ease of performing a particular behavior, which is presumed to affect the behavior both directly and indirectly [23]. Conner & Armitag reviewed all the other theories and models and then concluded that the TPB is the most appropriate and complete theory for studying behavior [24]. According to recent evidence, this theory has been most popular and useful for properly understanding couples' decision-making about having children [25].

One of the main opportunities provided by the TPB is the assessment of change in a person's attitude, norms, and intention over time and in special circumstances [26], including the COVID-19 pandemic. Based on evidence, the lack of knowledge mainly leads to a negative attitude, which may affect the intention to perform a behavior. These epidemics and outbreaks often have severe consequences, and

may even affect people's mental health. Moreover, fear and anxiety about epidemic diseases affect people's behaviors [27]. Moreover, there are disagreements in studies about the anxiety and concerns about having children in this pandemic. The prevalence of anxiety among pregnant women during the COVID-19 pandemic was reported as 17.2% in a study in Wuhan, China [28]. In another study, Yassa et al. reported an increase in anxiety and concern about pregnancy and childbearing during the COVID-19 pandemic [29]. Nonetheless, in the study by Zhu et al., childbearing desire had not changed compared to before the COVID-19 pandemic in 66.2% of the participants and none of the couples had any anxiety about this pandemic [30]. Consequently, the present study used the TPB as a model for path analysis to investigate the role of the COVID-19 pandemic in the childbearing intentions of Iranian couples using anxiety about COVID-19 as the mediating variable.

Given the changes in reproductive behaviors and the lack of accurate information about the childbearing factors during the Coronavirus pandemic, the present study was carried out to examine the role of the COVID-19 pandemic in Iranian couples' childbearing intentions based on the planned behavior model (Fig. 1). While providing an overview of the current situation, this study seeks to facilitate policy-makers' decision-making based on the existing laws by identifying the factors related to this decision and through appropriate interventions designed by health service authorities and providers.

The study hypotheses are:

- H1. There is a relationship between knowledge about COVID-19 and childbearing intentions.
- H2. There is a relationship between attitude toward COVID-19 and childbearing intentions.
- H3. There is a relationship between subjective norms about COVID-19 and childbearing intentions.
- H4. There is a relationship between perceived behavioral control toward COVID-19 and childbearing intentions.
- H5. There is a relationship between knowledge and anxiety about COVID-19.
- H6. There is a relationship between attitude and anxiety about COVID-19.
- H7. There is a relationship between subjective norms and anxiety about COVID-19.
- H8. There is a relationship between perceived behavioral control and anxiety about COVID-19.
- H9. There is a relationship between childbearing intentions and anxiety about COVID-19.
- H10. Anxiety about COVID-19 mediates the relationship between knowledge about COVID-19 and childbearing intentions.
- H11. Anxiety about COVID-19 mediates the relationship between attitude toward COVID-19 and childbearing intentions.
- H12. Anxiety about COVID-19 mediates the relationship between subjective norms about COVID-19 and childbearing intentions.
- H13. Anxiety about COVID-19 mediates the relationship between perceived behavioral control toward COVID-19 and childbearing intentions.

Methods

Participants, recruitment setting, and sampling procedure

The present descriptive-analytical, cross-sectional, web-based study was conducted on 400 married Iranian women over four months from 12 July 2020. The sample size was determined with a 95%

confidence interval, 5% error, 33% P [31], and taking into account 10% withdrawals using $n = \frac{P(1-P)Z^2}{d^2}$.

This research was approved by the Ethics Committee of the Research Deputy of Shahid Beheshti University of Medical Sciences (IR.SBMU.RETECH.REC.1399.390), and sampling began after obtaining the necessary permissions from the university authorities.

Initially, married Iranian women in reproductive age (15-45 years) with reading and writing literacy were included. Then, pregnant, breastfeeding, postmenopausal, and infertile women were excluded. Given the COVID-19 pandemic, the study was conducted on the web using official online social networks popular among the public. The research poster was published on social networks to inform the public and contained a brief introduction to the research history, the study objectives, participants' characteristics, the voluntary nature of participation in the study, the confidentiality of the data, and a link to the online questionnaire. The eligible participants willing to take part in the study first completed the informed consent form at the top of the electronic questionnaire, and then completed the questionnaires.

Measures

Data were collected using the demographic questionnaire and the childbearing intentions and related factors questionnaire.

Social and demographic variables

The demographic questionnaire was researcher-made and inquired about variables such as age, spouse's age, duration of marriage, education, occupation, monthly household income, housing status, and household size.

Childbearing decision-making factors

The researcher-made "Factors related to childbearing intentions during the COVID-19 pandemic" questionnaire was designed according to the main constructs of the TPB [23, 32] and based on a review of literature and was validated using face and content validity methods. This questionnaire asked about the effect of the COVID-19 pandemic on childbearing intentions, the number of children, appropriate birth spacing, and the right time to have children. To assess its face validity, the questionnaire was distributed among 15 eligible women, who were asked to comment on its appearance, clarity of the chosen words, and the logical sequence of the items. The impact score was also calculated to examine the quantitative face validity, and the item was kept for the next analyses if the impact score was >1.5. To assess validity, eight experts (reproductive health experts, midwives, and epidemiologists) were invited, and the Content

Validity Ratio (CVR) and Content Validity Index (CVI) were determined. The reliability of the questionnaire was assessed using the internal consistency method with Cronbach's alpha coefficient. The "Factors related to childbearing intentions during the COVID-19 pandemic" questionnaire contained 33 items in four dimensions (supplementary 1), as follows:

Knowledge and attitude about COVID-19

This dimension included 16 items related to knowledge and three related to the attitude of couples about the decision to have children during the COVID-19 pandemic. "False" or "I don't know" responses scored 0 in the knowledge part, and correct answers scored 1 point, and the scoring ranged from 0 to 16 in this part. The responses to the attitude questions scored one point for "agree", two for "disagree", and three for "no comments", and the scores for this part ranged from 3 to 9. The reliability of this dimension was assessed with Cronbach's alpha coefficient of 0.607 for the knowledge questions and 0.70 for the attitude part.

Subjective norms about COVID-19

This dimension of the questionnaire was assessed with four questions, including (1) People think we should have children as soon as possible; (2) I think I will be ridiculed by others if I have children; (3) Physicians (midwives) advise against childbearing during the coronavirus spread; and (4) My physician (midwife) thinks that I should have children sooner rather than later because of my fertility age limit. The scores in this dimension ranged from 1 for "totally disagree" to 7 for "totally agree", with the minimum score of 4 for the perceived subjective norms, and a maximum of 28. The reliability of this dimension was determined with Cronbach's alpha coefficient of 0.60.

Perceived behavioral control toward COVID-19

This dimension was assessed with four questions, including (1) I'm going to have children even if it is too expensive; (2) I shall not be deprived of the blessing of having children because of the coronavirus problems and barriers; (3) I can look after myself and my child; and (4) Financial problems, especially after the spread of the coronavirus, do not let me consider having children. The scores for this part ranged from 1 for "totally disagree" to 7 for "totally agree", with the minimum score of 4 and a maximum of 28 for perceived behavioral control. The reliability of this dimension was determined with Cronbach's alpha coefficient of 0.83.

Anxiety about COVID-19

This dimension included six items, and the answers to the questions ranged from 1 point for "totally disagree" to 7 for "totally agree". (1) I am extremely worried about the spread of the coronavirus; (2) I believe I might catch the coronavirus at any given moment; (3) I'm concerned about transmitting the coronavirus to those around me; (4) My daily activities have been disrupted by coronavirus-related anxiety; (5) I'm extremely worried by thoughts of getting pregnant and visiting for prenatal care and tests during the coronavirus outbreak; and (6) Thinking about going to the hospital for childbirth during the

coronavirus outbreak makes me extremely anxious. The scores in this dimension ranged from 6 to 42. The reliability of this dimension was determined with Cronbach's alpha coefficient of 0.80.

Statistical analysis

SPSS 26 was used to summarize the demographic characteristics of the subjects. Categorical variables and continuous variables were summarized using frequencies and percentages as well as arithmetic mean and standard deviation (SD), respectively. The missing data were replaced using the mean imputation method. The relationship between the study variables (i.e. knowledge, attitude, subjective norms, perceived behavioral control and anxiety about COVID-19) and childbearing intentions were assessed through Pearson's correlation analysis.

The present research followed the approach suggested by Hayes (2013) using PROCESS macro _{3.5} to explore the research mediation model. First, the direct relationships between the four concepts including knowledge, attitude, subjective norms, and perceived behavioral control about COVID-19 and childbearing intentions without including anxiety about COVID-19 were tested (total effects model). Second, the mediator (i.e. anxiety about COVID-19) was added to the model to develop a mediation model (mediation effects model).

In this model, knowledge, attitude, subjective norms and perceived behavioral control about COVID-19 were modeled as antecedent variables influencing childbearing intentions directly and indirectly through anxiety about COVID-19 as the mediator. The model was assessed using AMOS version 24 software. All the path coefficients were estimated using the maximum likelihood method and their significance was assessed using bootstrapping with 2000 replications. Next, the standard error of the indirect relationships was estimated by the bootstrapping approach. Bootstrapping is more accurate and has a higher statistical power than the approaches proposed by Sobel (1982) and Baron and Kenny (1986). The coefficient of determination (R^2) was also calculated to evaluate how well the model explained the outcome.

Results

Sample characteristics

The mean age of the participants was 33.41 years ($SD= 5.36$) and the mean age of their partners was 35.38 years ($SD= 5.30$). The mean duration of marriage was 9.53 years ($SD= 5.65$) and the mean parity was 1.04 ($SD=0.83$).

Table 1 presents other demographic details and the effect of COVID-19 on the timing of childbearing, birth spacing, and the desired number of children in participants' views. In the present study, only 40.3% of the participants were willing to have children during the COVID-19 pandemic.

Correlation

Table 2 shows that knowledge ($r = .129, p = .01$), subjective norms ($r = .244, p < .001$) and perceived behavioral control ($r = .579, p < .001$) about COVID-19 had a significant positive relationship with childbearing intentions. Anxiety ($r = -.127, p = .01$) and attitude ($r = -.303, p < .001$) about COVID-19 were negatively correlated with childbearing intentions.

Assessing the total effects mediation model showed a significant relationship for knowledge ($\beta = .084, p = .036$), attitude ($\beta = -0.132, p < .001$), subjective norms ($\beta = 0.223, p < .001$), and perceived behavioral control ($\beta = 0.527, p < .001$) about COVID-19 with childbearing intention hypotheses number H1 to H4, respectively.

Path Analysis Model

The findings confirm that the mediation model used well examines the relationship of knowledge, attitude, subjective norms and perceived behavioral control about COVID-19 with childbearing intentions. Nonetheless, the findings did not support hypothesis number H6 regarding the relationship between attitude and anxiety about COVID-19 ($\beta = 0.071, p = .170$).

Testing the indirect relationships of the mediation model showed a positive relationship between knowledge ($\beta = 0.226, p < .001$) and subjective norms ($\beta = 0.155, p = .001$) about COVID-19, thus confirming hypotheses number H5 and H7. Also, a negative relationship was found for anxiety and perceived behavioral control ($\beta = -0.146, p = .001$) about COVID-19 with childbearing intentions ($\beta = -0.096, p = .017$), which supports H8 and H9.

Anxiety about COVID-19 mediated the relationship of knowledge ($\beta = .105, p = .009$), attitude ($\beta = -0.125, p = .002$), subjective norms ($\beta = .238, p < .001$), and perceived behavioral control ($\beta = .513, p < .001$) about COVID-19 with childbearing intentions and supports H10 and H13, respectively. The model explained 41% of the variance in anxiety and 46% of the variance in childbearing intentions.

Discussion

This study evaluated the mediating role of anxiety about COVID-19 in the relationship between childbearing intentions and the dimensions of the Theory of Planned Behavior (TPB) in a broad sample of Iranian women.

According to recent evidence, psychosocial factors in TPB are effective in the formation of fertility goals [33]. In the present study, the desire to have children had a positive and significant relationship with constructs including knowledge, subjective norms, and perceived behavioral control during the COVID-19 pandemic, but a negative and significant correlation with anxiety and attitude about Covid-19. In line with the present findings, Li et al. (2019) also found that all the constructs of TPB affected childbearing intentions while perceived behavioral control was the strongest construct determining the desire to have children, followed by attitude and subjective norms [25]. In another study, the researchers concluded that

childbearing intentions have positive and significant relationships with all the three constructs of TPB (namely attitude, subjective norms, and perceived behavioral control) [34].

Various studies have demonstrated the effect of attitude on fertility goals [22, 35]. Attitude means “The degree of an individual’s favorable or unfavorable assessment of the intended behavior”. In other words, attitude perceives and classifies the perspectives, beliefs, and feelings of the individual toward a broad range of different issues [21]. In the population examined in the present study, 17.3% had negative attitudes, 49.6% had no comments, and 37.9% had positive attitudes toward the intended behavior (i.e. childbearing during the pandemic). According to another study, both positive and negative attitudes affected the childbearing desire [36]. In agreement with the present findings, Yassa et al. reported that anxiety and concerns about pregnancy and childbearing increase during the COVID-19 pandemic [29], which can explain the diminished desire to have children in the present study. Moreover, a number of psychological factors, such as fear, anxiety, and stress, are likely to affect the individual’s attitude [37, 38]. Anxiety disorders are described as excessive and ongoing concern about something or excessive or irrational fear of a situation or an object, and these fears or concerns significantly affect the person’s performance in an adverse manner [39]. In their study, Liu et al. concluded that the major attitudes toward COVID-19 (i.e. “totally agree” or “totally disagree”) could easily be changed through anxiety and stress [40].

The anxiety and concerns among the public largely vary during the COVID-19 pandemic. Recent evidence suggests that people in quarantine have significant levels of anxiety, stress, and anger [41]. According to the present findings, COVID-19-induced anxiety had positive and significant relationships with the scores of knowledge and subjective norms, but negative and significant relationships with perceived behavioral control and childbearing desire. In agreement with the present findings, Micelli et al. showed that the concern and anxiety induced by the COVID-19 pandemic had an impact on the desire of couples who had already planned to have children. In addition, most study subjects who had planned to have children before the coronavirus outbreak belonged to older age groups, and were therefore more anxious and concerned about future infertility than the consequences of infection with the virus [13]. In contrast to the present study, the results obtained by Sogut et al. showed no significant relationship between the score of knowledge and COVID-19-induced anxiety [42]. In another study, COVID-19 knowledge had negative relationships with symptoms of general anxiety, depression, and psychological distress [43]. Moreover, according to recent evidence, in the event of phenomena with high mortality rates, following an initial decline in fertility, fear and anxiety about losing one’s child become further motivation to have more children [44, 45].

In the present study, the higher scores of knowledge, subjective norms, and perceived behavioral control about COVID-19 directly and indirectly led to an increase in childbearing intentions; however, the attitude toward COVID-19 only directly affected the desire to have children without the mediation of anxiety. As reported in previous epidemics, illness and quarantine may have a major effect on pregnancy and childbirth, but it is still not clear whether and how COVID-19 affects the rate of childbirth and if it reduces the rates or not [13].

In the present study, among the constructs of TPB, COVID-19-induced anxiety had a mediating role in the intention to carry out the behavior (childbearing desire). Recent studies on the trend of changes in psychological symptoms during previous pandemics have shown that although the initial reactions to a pandemic are identified with increasing levels of anxiety and concern, these symptoms gradually abate in the course of the pandemic [46]. Interventions to increase the childbearing desire through anxiety-reducing and relaxation techniques will therefore be more effective. Holding web-based (virtual) classes and providing information about safety techniques against COVID-19 infection before and during pregnancy, during childbirth, and in the postpartum period will probably reduce some of the further stresses and anxieties experienced by couples, and women should routinely be screened for psychosocial vulnerabilities. In addition, there is no evidence suggesting that pregnant women are more prone to COVID-19 infections or more severe complications following infection with this virus [47]. Consequently, because of the inadequate knowledge about COVID-19, couples should be more conservative in deciding to cancel their pregnancy plans.

The strengths of the present study include the use of a path analysis model to test the TPB model as well as determining all the path coefficients using maximum likelihood with the bootstrapping approach. The study limitations include the fact that there was no limitation on the couples' parity, although it appears that decisions made about the first, second, and next children differ in nature. Although younger and older parents' decision to have more children may be somehow different from what it was in the past, the decision to have the first child is expected to have more widely changed. With the assumption that women have the most information on the subject of childbearing and are the ultimate decision-makers in this regard, the target group of this study included only women. The researchers recommend conducting further studies to determine the factors predicting childbearing decision-making in the COVID-19 pandemic in men and also jointly with women.

Conclusions

Childbearing intentions had a direct relationship with knowledge, subjective norms, and perceived behavioral control in relation to COVID-19, and COVID-19-induced anxiety had a mediating role among the TPB constructs for performing an intended behavior (childbearing desire). Designing appropriate interventions to increase childbearing desires through anxiety-reducing and relaxation techniques will prove more effective.

Abbreviations

SARS: Severe Acute Respiratory Syndrome; COVID-19: Coronavirus Disease 2019; TPB: Theory of planned behavior; H: hypothesis; CVR: Content Validity Ratio; CVI: Content Validity Index; SD: standard deviation

Declarations

Ethics approval and consent to participate: The Ethics Committee of Shahid Beheshti University of Medical Sciences, Tehran, Iran, approved this study (IR.SBMU.RETECH.REC.1399.390). Agreement to participate and a signed consent form were obtained from all participants before data collection. All participants signed a written consent form without any force, threats or seduction. Also, in the present study, the minimum age of the participants was 18 years and there was no need to obtain parent or legal guardian consent.

Consent for publication: Not applicable.

Availability of data and materials: The datasets of the present study are available from the corresponding author on reasonable request.

Competing interests: The authors have no competing interests to declare.

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Authors' contributions: MB, NK and TM-G contributed to the concept, design, drafting the article and acquisition of data. HSH and NK involve in the analysis and interpretation of data. MB, NK, TM-G and HSH contributed to the critical revision. All of the coauthors interpreted the data and participated in finalizing the article. All of the co- authors approved the final version of the article.

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Tables

Table 1. The demographic profiles of the respondents

| Variable | | Frequency (percentage) |
|--|----------------------|------------------------|
| Educational status | Elementary school | 5 (1.3%) |
| | Secondary school | 8 (2%) |
| | High school | 86 (21.5%) |
| | Diploma & university | 301 (75.2%) |
| Socio-Economic status | Lower Income | 29 (7.3%) |
| | Middle Income | 203 (50.7%) |
| | Higher Income | 167 (42%) |
| Employment status | House Wife | 197 (49.3%) |
| | Employee | 203 (50.7%) |
| Housing status | Mortgage | 25 (6.3%) |
| | Rent | 110 (27.5%) |
| | Owner | 227 (56.7%) |
| | Live with family | 28 (7%) |
| | Organization | 10 (2.5%) |
| COVID-19 effect on childbearing intention | Yes | 161 (40.3%) |
| | No | 239 (59.7%) |
| COVID-19 effect on timing childbearing | Yes | 174 (43.5%) |
| | No | 225 (56.5%) |
| COVID-19 effect on childbearing spacing | Yes | 150 (37.5%) |
| | No | 250 (62.5%) |
| COVID-19 effect on your number of childbearing | Yes | 99 (24.8%) |
| | No | 301 (75.2%) |

Table 2. The results of the correlation analysis

| | Mean | SD | [2] | [3] | [4] | [5] | [6] |
|---------------------------------|-------|------|--------|---------------------|---------------------|--------------------|---------|
| 1. Knowledge | 10.60 | 2.18 | .257** | -.005 ^{ns} | .023 ^{ns} | .204** | .129* |
| 2. Attitude | 5.76 | 1.72 | | .035 ^{ns} | -.297** | .062 ^{ns} | -.303** |
| 3. Subjective norm | 14.80 | 3.40 | | | -.047 ^{ns} | .150** | .244** |
| 4. Perceived behavioral control | 19.12 | 3.48 | | | | -.155** | .579** |
| 5. Anxiety | 30.19 | 8.41 | | | | | -.127* |
| 6. Childbearing intention | 4.45 | 2.48 | | | | | |

^{ns} $p \geq .05$, * $p < .05$, ** $p < .01$, two-tailed tests

Table 3. The direct, indirect, and total effects

| Path | Standardized path coefficients | <i>p</i> | 95% Confidence Interval | |
|---|--------------------------------|----------|-------------------------|-------------|
| | | | Lower bound | Upper bound |
| Total Effects | | | | |
| Knowledge → Childbearing intention | 0.084 | .036 | 0.006 | 0.184 |
| Attitude → Childbearing intention | -0.132 | .001 | -0.310 | -0.072 |
| Subjective norm → Childbearing intention | 0.223 | <.001 | 0.107 | 0.218 |
| Perceived behavioral control → Childbearing intention | 0.527 | <.001 | 0.318 | 0.431 |
| Indirect Effects | | | | |
| Knowledge → Anxiety | 0.226 | <.001 | 0.496 | 1.246 |
| Attitude → Anxiety | 0.071 | .170 | -0.150 | 0.849 |
| Subjective norm → Anxiety | 0.155 | .001 | 0.151 | 0.617 |
| Perceived behavioral control → Anxiety | -0.146 | .003 | -0.592 | -0.115 |
| Anxiety → Childbearing intention | -0.096 | .017 | -0.051 | 0.005 |
| Direct Effects | | | | |
| Knowledge → Childbearing intention | 0.105 | .009 | 0.029 | 0.211 |
| Attitude → Childbearing intention | -0.125 | .002 | -0.299 | 0.062 |
| Subjective norm → Childbearing intention | 0.238 | <.001 | 0.118 | 0.229 |
| Perceived behavioral control → Childbearing intention | 0.513 | <.001 | 0.307 | 0.422 |

Figures

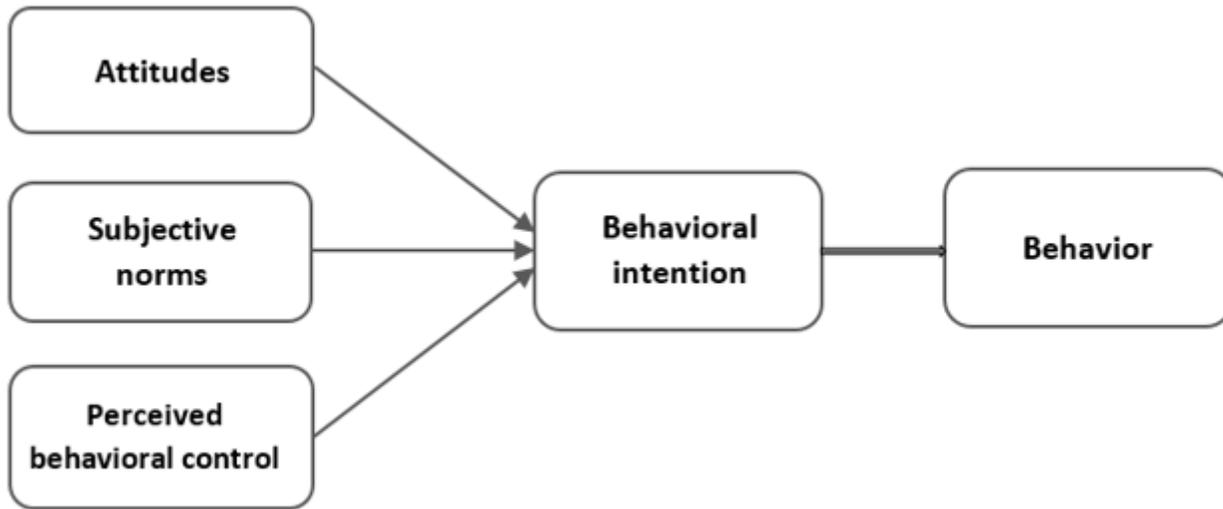


Figure 1

The initial conceptual model based on the Theory of Planned Behavior

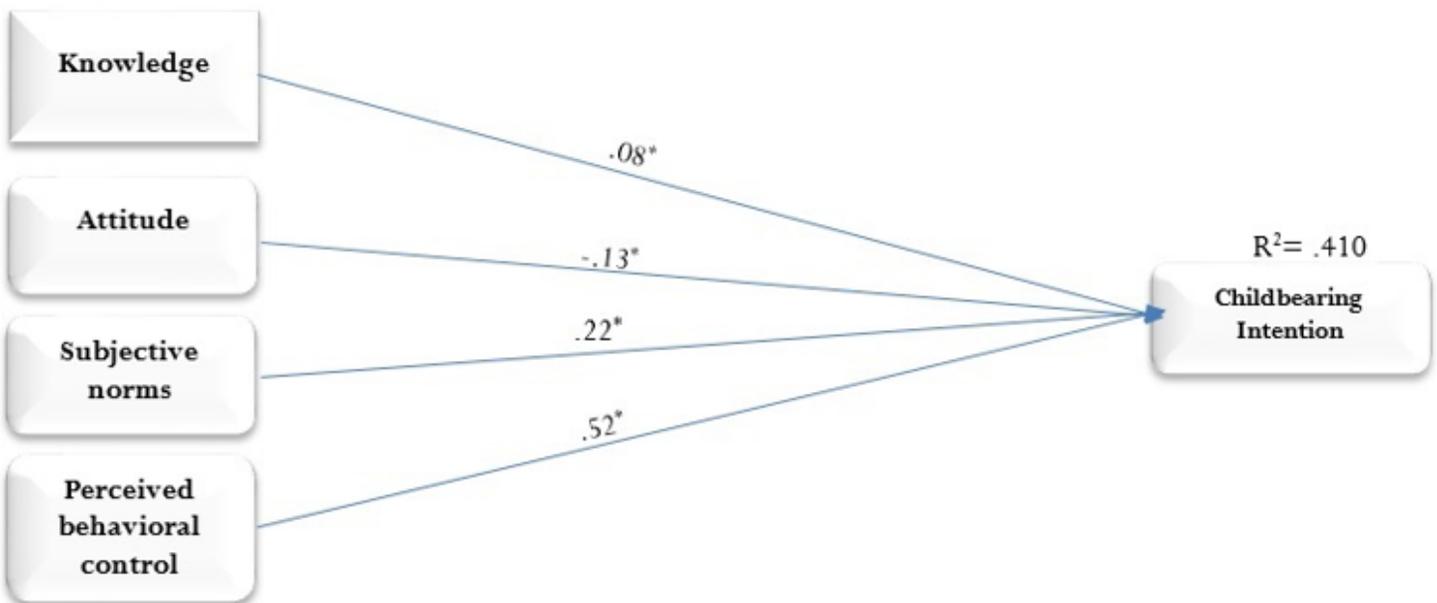


Figure 2

The total effects model of childbearing intentions based on the TPB during the COVID-19 pandemic

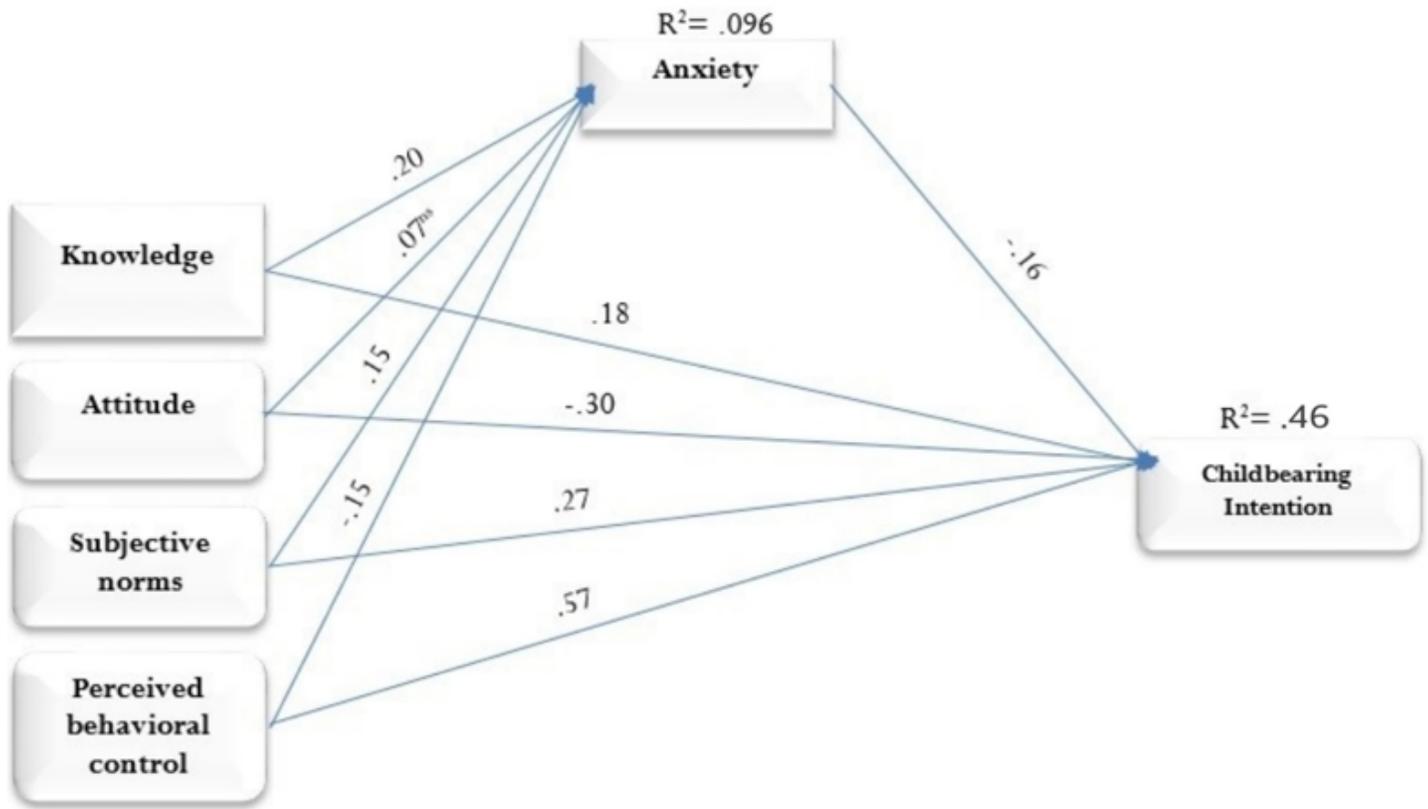


Figure 3

The total effects and mediation effects models of childbearing intentions based on the TPB during the COVID-19 pandemic

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [QustionnaireSupplementary1a.docx](#)