

Supplementary File 1

Study Scales (Adapted Religious Fatalism Scale and Modesty Concerns Scale)

Title:

Measurement Scales Used in the Study: Understanding and Addressing HPV Vaccine Hesitancy in Muslim Mother–Daughter Dyads

1. Islamic-Adapted Religious Fatalism Scale

1. Source:

This scale was adapted for the present study from the *Religious Health Fatalism Measure* developed by Franklin et al. (2008), following contextual adaptation and consultation with Islamic scholars.

2. Construct:

The scale measured the extent to which participants believed that health outcomes were predetermined by divine decree (*qadar*), a belief that could influence engagement in preventive health behaviors.

3. Instructions to Participants:

“Please read each statement below and indicate how much you agreed or disagreed by selecting the appropriate number.”

4. Response Scale:

1 = Strongly disagree

2 = Disagree

3 = Neither agree nor disagree

4 = Agree

5 = Strongly agree

Items

Item No.	Item Statement
1	If Allah has decreed that I (or my daughter) will become ill, it will happen regardless of what I do.
2	Whether or not I (or my daughter) develop a serious illness is in Allah’s hands, not mine.
3	I believed that getting vaccinated was pointless if Allah had already written illness for someone.
4	Seeking prevention (such as vaccination) showed a lack of complete trust (<i>tawakkul</i>) in Allah’s plan.
5	My faith taught me that I must take the necessary means (<i>asbāb</i>) to protect health and then trust Allah’s decree. (R)
6	Allah provided us with knowledge and medicine to use; avoiding them was akin to rejecting His blessings. (R)

(R) = Reverse-scored item

2. Modesty Concerns in Healthcare Scale

1. Source:

This scale was newly developed for the present study, informed by prior qualitative research (e.g., Khan et al., 2021) and expert consultation in Islamic bioethics.

2. Construct:

The scale assessed concerns related to modesty (*ḥayā'*), bodily integrity, and gender interactions within healthcare settings, specifically in relation to the HPV vaccine.

3. Instructions to Participants:

“The following statements relate to personal feelings about modesty and healthcare. Please indicate how concerned you would have been about each issue if you were considering the HPV vaccine for yourself or your daughter.”

4. Response Scale:

1 = Not at all concerned

2 = Slightly concerned

3 = Moderately concerned

4 = Very concerned

5 = Extremely concerned

Items

Item No.	Item Statement
1	Discussing a vaccine for a sexually transmitted infection (STI) with a healthcare provider.
2	The possibility that the vaccine would be administered by a male doctor or nurse.
3	Concern that receiving the vaccine might convey an inappropriate message about Islamic sexual ethics to my daughter.
4	The idea of a vaccine that targeted a private area of the body.
5	Feeling that my daughter's (or my own) bodily privacy boundaries were being crossed.
6	Lack of access to a female healthcare provider throughout the consultation and vaccination process.
7	Concern that the vaccine medicalized a part of the body considered private and sacred.