There are many reasons why women all over the world choose not to become pregnant and have children. Across different geographies, populations, and cultures, these reasons may be financial, social, physical, or otherwise. The following visualizations illustrate how these many reasons might factor into the decision to have children.

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Access to Quality Healthcare

- Maternal Mortality
    - Countries with lower HAQ Indexes tend to have higher maternal mortality rates, illustrated by the maps' inversely related colors.
    - The scatterplot compares maternal mortality and HAQ together while also showing how geographic locations, this time by continent, differ. The relationship is negative, just as the maps show by color.
- Skilled Medical ProfessionalsThis scatterplot reveals a positive relationship between the percentage of births attended by skilled medical professionals and HAQ.
- Overall, these visualizations clearly show how birth outcomes are directly related to one's access to quality healthcare. We might conclude that where healthcare is poor, fewer medical professionals are available to attend births, which might cause higher maternal mortality rates.

Health Risks Associated with Pregnancy

- Higher blood sugar levels are correlated with higher pregnancy risk levels, as the high risk box plot has a much larger average and variance
- High values of these indicators correlates with increased pregnancy risk, though this correlation appears to be slightly weaker than blood sugar. This also confirms the direct relationship between Systolic and Diastolic blood pressure levels predicted in the correlation matrix, as indicated by the trend lines.
- Age appears to be directly correlated with risk level.
- There are some major outliers, however, that indicate that age is not the sole cause of increased risk.

Social Attitudes Towards not Having Children

- Respondents largely disagree with stereotypical health preconceptions one might have about pregnancy and birth.
- Responses regarding societal preconceptions were much more polarized than other categories.
    - Nearly all respondents thought that men and women are NOT treated equally when they choose not to have kids.
    - Yet respondents also largely said women were selfish for not having kids. This corroborates that the societal pressure to have children is a strong factor for many women.
- Financial factors had very high variance in responses. This is likely due to differences in respondents' socioeconomic status.
- Societal pressure is a strong influence while more local, personal influences like peer pressure and negative childbirth stores are not.

Note: Respondents lived in New Jersey and therefore have a level of privilege regarding healthcare and birth outcomes compared to other areas of the world. This should be considered when evaluating these opinions.

Conclusion:
Overall, we saw that there were multiple aspects that relate to a woman's decision not to have a child. One major factor is accessibility to healthcare. A lot of women don't have proper access to healthcare which makes it difficult for them to seek proper medical help in relation to birth. Another major factor is the financial and societal aspects of pregnancy. Outside influences such as societal pressures and financial factors like fertility treatment and adoption costs have an impact on a woman's decision to become pregnant. Health factors are also a major influence, including high blood pressure and age, which can make pregnancy riskier and correlate with women deciding not to get pregnant and have children.

Visualizing these different factors is also a very relevant issue, considering the current discussions relating to the leaked decision to overturn Roe v. Wade. These are different aspects that can factor into a woman's decision when it comes to pregnancy and birth and our visualizations aid in understanding these influences.

Health:
Our third dataset includes several measurements of health, such as blood pressure, body temperature, and age along with the predicted risk level of the mother. We analyzed each factor's correlation with the mother's risk, finding that blood pressure, blood sugar, and age have the strongest correlation with risk. We found that each of these factors has a direct relationship with predicted risk, with higher blood pressure and blood sugar as well as older age being potential indicators of a high risk pregnancy. Age, however, also correlates with the other factors in the dataset, indicating that older mothers likely do not innately have higher risk pregnancies, but their older age may mean they have higher blood pressure, blood sugar, etc, increasing the risk of the pregnancy.

Survey (societal influences):
This dataset contains results from a survey that was taken by women to understand what factors influence a woman's decision to have or not have a child. The questions covered four general topics: health, finances, societal views, and outside influences. For each statement, the survey respondents were asked to what extent the statement influenced a woman's decision to get pregnant or how much they agreed/disagreed with the preconception. With finances, the high costs of fertility treatments and adoption seem to have a large influence. Financial factors had a large variation in responses, meaning these issues are significant for those who are more financially stressed, but not a concern for others. Interestingly, the traditional views related to women needing to have children and the pressure stemming from that seemed to have a large influence on a woman's decision to have a child. These influences were more significant than personal ones like negative stories about childbirth and peer pressure.

Healthcare access/quality:

The global healthcare visualizations draw from multiple datasets. The maternal mortality numbers come from the global mortality dataset in the TidyTuesday Github repository. The numbers related to skilled medical professionals are from the World Health Organization, and HAQ numbers are from Our World in Data. Each dataset contained data on the maternal mortality rate, HAQ index, or percent of births with skilled personnel. Clearly, there is a relationship between healthcare access/quality and maternal mortality rates. There is also a relationship between healthcare quality and access to skilled birth attendants. Geographical trends exist as well, with the highest maternal mortality rates largely coming from Africa and South/Southeast Asia. This is reflected in the maps as well as in the scatterplots. The scatterplots also show that the relationship between these data is not linear, but rather, maternal mortality rates and skilled attendant rates steeply decline/increase until an HAQ Index of about 60 is reached.

Global Burden of Disease Study 2015 (GBD 2015) Healthcare Access and Quality Index Based on Amenable Mortality
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