Background

- Caesarean section (C-section) birth is associated with numerous chronic diseases [5,8,11,14,15].
- Type I diabetes, type II diabetes, obesity, and asthma are examples of diseases associated with those born via C-section [5,8,11,14,15].
- Current research has been limited to the association of individual chronic diseases as a result of C-section birth.
- Current research suggests that breastfeeding may be a protective against some chronic diseases [1,2,7,10].
- It is currently unknown if C-section birth is causative of multiple (two or more) chronic diseases in concurrence, known as multimorbidity.

Aim of the Study:
The goal of this study is to determine whether C-section birth is associated with multimorbidity and if breastfeeding is a protective measure.

Methods

Participants

Mayo Clinic patients born by C-section
Target population age: 50-60 years old

Retrospective Study

Data extracted from Biobank Database (chronic disease(s) attributes) [12]

Survey Instrument

Questionnaire to evaluate if patient was born by C-section and breastfed.

Data Analysis

Statistic services were employed, Mayo Clinic, Rochester

Results

Odds of Multimorbidity in Those Born Vaginally and Those Born by C-Section

<table>
<thead>
<tr>
<th>Vaginal Birth</th>
<th>C-Section Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.5</td>
<td>1.3</td>
</tr>
<tr>
<td>2</td>
<td>1.7</td>
</tr>
<tr>
<td>2.06</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1: Bar graph using mock data to show possible results comparing the odds of multimorbidity in those born vaginally vs those born by C-section.

Conclusions

According to the mock data, those who were born vaginally had lower risk of developing multimorbidity than those who were born by C-section (odds ratio of 1.93); there is an association between C-section birth and multimorbidity.

*Note that these are mock conclusions and do not represent the finalized data.

Implication

- The W.H.O., Mayo Clinic and others have implemented efforts to reduce total C-section births. However, as of 2013, C-section births make up 32% of total deliveries in the United States. This is up from 5% in the 1960’s[11]. These findings support efforts to advocate for natural (vaginal) deliveries.

Future steps

- A further study may be conducted exploring the protective effects of breast-feeding and whether this lowers the risk of multimorbidity in those born by C-section.

Limitations

- Information may be missing in electronic health record of some participants.
- Confounding variables including, but not limited to the presence of diabetes, smoking, and obesity may have influenced the results.

References