4.3) WORLDWIDE RISK FACTORS AND HEALTH OUTCOMES

Objective: This data-gathering exercise highlights the major health issues in the developing world and allows you to weigh the importance of corresponding risk factors and policies with regard to specific health outcomes. **Video instructions:** https://vimeo.com/472642519

Introduction: The World Health Organization (WHO) was created in 1948 with the mission of promoting worldwide health and development. This agency of the United Nations also serves as a major clearinghouse for compiling data to develop worldwide statistics on these matters. This information is summarized in the annuals "World Health Report" and "International Travel and Health" that inform travelers about international health risks.

Trust in the WHO took a hit during the COVID-19 pandemic after WHO officials appointed a scientist with deep ties to China to lead the American delegation to the fact-finding mission on the origin of the pandemic (*1*). Another worrisome development is the WHO's overreliance on funding from the Bill and Melinda Gates Foundation in view of Bill Gate's massive investment in experimental vaccines (*2*). This raises concerns that special interests are behind the centrality of digital vaccine passports as part of the WHO's controversial "Pandemic Preparedness Treaty" (*3*).

Literature Cited:
1. Eban, K. *The Lab-Leak Theory: Inside the Fight to Uncover COVID-19's Origins*. Vanity Fair, June 3, 2021. https://www.vanityfair.com/news/2021/06/the-lab-leak-theory-inside-the-fight-to-uncover-covid-19s-origins
2. Banco, E. *How Bill Gates and partners used their clout to control the global COVID response -with little oversight.* Politico, September 14, 2022. https://www.politico.com/news/2022/09/14/global-covid-pandemic-response-bill-gates-partners-00053969
3. Schaefer, B.; Groves, S. *Why the U.S. Should Oppose the New Draft WHO Pandemic Treaty.* Heritage Foundation February 27, 2923. https://www.heritage.org/global-politics/report/why-the-us-should-oppose-the-new-draft-who-pandemic-treaty

Part A: Interpreting Charts and Color-Coded Maps
1) Go to the WHO website: https://www.who.int/

2) Go to the "Data" drop down menu and choose the "Global Health Observatory."

3) Road Safety:
    a. Open the "Indicators" link and open the "Road Safety" dropdown menu.

    b. Under this menu, open the "Road traffic mortality" dropdown menu and open the "Estimated road traffic death rate" link. Direct link: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/estimated-road-traffic-death-rate-(per-100-000-population)

    c. Note regions with highest and lowest death rates from traffic accidents based on the chart.

4) Indoor Air Pollution:
    a. Go back to the "Indicators" page, then scroll down and open the "Air Pollution" dropdown.

    b. Under this menu, open the "Household air pollution" dropdown menu and open the "Household pollution attributable death rate (per 100,000 population, age standardized)" link. Direct link: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/household-air-pollution-attributable-death-rate-(per-100-000-population-age-standardized)

    c. Note regions and nations with highest death rates from indoor air pollution based on the color-coded map.

    d. Go back to "Indoor Air Pollution" menu and open the "Proportion of population with primary reliance on polluting fuels and technologies for cooking (%)" link. Direct link: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/gho-phe-population-with-primary-reliance-on-polluting-fuels-and-technologies-for-cooking-proportion

    e. Note regions and nations with the highest percentages on the color coded map.

Part B: Spreadsheets

1) Go to the WHO website: https://www.who.int/

2) Go to the "Data" drop down menu and choose the "Global Health Observatory."

3) Obesity:

    a. Open the "Indicators" page and open the "Nutrition" dropdown menu.

    b. Under this menu, open the "Body mass index (BMI)" dropdown menu and open the "Prevalence of obesity among adults, BMI >=30 (age-standardized estimate) (%)" link. Direct link: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-obesity-among-adults-bmi-=-30-(age-standardized-estimate)-(-)

    c. This will take you to the map. Open the symbol for "Data (Fig. 1)."

    d. To narrow down, click on "Filter" (Fig. 2) and choose "Latest" for the year and "Both Sexes" for the sex. Click "Apply (Fig. 3)." This provides the most recent data (Fig. 4).

Fig. 1

Fig. 2

Fig. 3

Indicator	Prevalence of obesity
Period Location	2016
Afghanistan	5.5 [3.4 – 8.1]
Albania	21.7 [17 – 26.7]

Fig. 4

    e. To sort your data in order of obesity rate, click the table on the right to download the data in spreadsheet form. If this does not work, open the drop-down menu represented by the doted lines indicated (Fig. 5).

    f. Once in this menu, open the second drop-down menu and choose "First Tooltip" to sort in order of obesity (Fig 6).

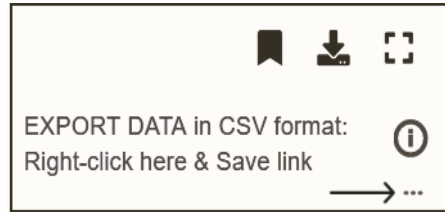   g. Use the sorted data to find nations with obesity rates of 40% or higher.
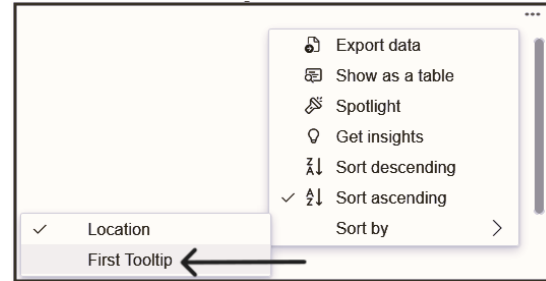
Fig. 5

Fig. 6

4) <u>Suicide</u>:
   a. Go back to "Indicators" page and then scroll to the bottom and click on the link for accessing the "old" Global Health Observatory data. This link is directly under the list of indicators in the new system. If you cannot find the link to the old system, use this direct link: https://apps.who.int/gho/data/node.main
   b. Open the link "Mortality and global health estimates," then proceed to open the link "Mental Health." Once in this link, open the link for "Suicide rate estimates, crude, 10-year age groups." Direct link: https://apps.who.int/gho/data/node.main.MHSUICIDE10YEARAGEGROUPS?lang=en
   c. To narrow down your data, click on "Filter" and choose the following:
      i. "15-24" for the age.
      ii. "Both sexes" for the sex.
      iii. "2019" for the year.
   d. Click "apply" and use the tab on the upper right to download the spreadsheet.
   e. Use the "sort" function to arrange the data in order of suicide rates.
   f. Use the sorted data to find nations with the ten highest suicide rates for this age group.

5) <u>Gender Differences in Life Expectancy</u>:
   a. Go back the "old" Global Health Observatory data. Here is the direct link: https://apps.who.int/gho/data/node.main
   b. Open the link "Mortality and global health estimates," then proceed to open the link "Life expectancy." Direct link: https://apps.who.int/gho/data/node.main.688?lang=en
   c. In order to narrow down your data, click on "Filter" and choose the following:
      i. "Life expectancy" at birth for the indicator.
      ii. "Male" and "Female" for the sex.
      iii. "2019" for the year.
   d. Click "apply" and use the tab on the upper right to download the spreadsheet (.Fig. 7).
   e. Enter the equation for subtracting male from female life expectancy (Fig. 8).

	A	B	C	D	E
1	Countries, Year		Male	Female	
2	Afghanista	2019	63.3	63.2	
3	Albania	2019	76.3	79.9	

Fig. 7

	A	B	C	D	E
1	Countries, Year		Male	Female	difference
2	Afghanista	2019	63.3	63.2	=D2-C2
3	Albania	2019	76.3	79.9	

Fig. 8

   f. Use the "sort" function to arrange the data in order of life expectancy differences between male and female.
   g. Use the sorted data to find nations with the largest gender differences in life expectancy (usually > 10 years).

6) <u>Progress in Life Expectancy from 2000-2019</u>:

a. Return to the "old" Global Health Observatory data. Direct link: https://apps.who.int/gho/data/node.main

b. Open the link "Mortality and global health estimates," then proceed to open the link "Life expectancy." Direct link: https://apps.who.int/gho/data/node.main.688?lang=en

c. In order to narrow down your data, click on "Filter" and choose the following:
   i. "Life expectancy" at birth for the indicator.
   ii. "Both sexes" for the sex.
   iii. "2019" for the year.

d. Click "apply" and use the tab on the upper right to download the spreadsheet.

e. Repeat steps i-iii to download the data for the year 2000.

f. Copy Columns A, B, and C from the spreadsheet for the year 2000 and paste this to Columns D, E, and F in the spreadsheet for the year 2019. Place nations side by side and make sure they align from top (Fig. 9) to bottom (Fig. 10).

g. Remove unneeded columns and enter the equation for subtracting 2000 life expectancy from 2019 life expectancy (Fig. 11).

h. Use the "sort" function to arrange the data in order of life expectancy differences between 2000 and 2019.

i. Write names of nations and territories with the 10 largest differences in life expectancy from 2000 to 2019.

j. Generate a scatterplot with 2000 life expectancy on the x-axis and 2019 life expectancy on the y-axis. Give your graph a title and label for each axis.

A	B	C	D	E	F
Countries	Year	Both sexes	Countries	Year	Both sexes
Afghanistan	2019	63.2	Afghanista	2000	55

Fig. 9

Zambia	2019	62.5	Zambia	2000	44.5
Zimbabwe	2019	60.7	Zimbabwe	2000	46.6

Fi. 10

	A	B	C	D
1	Countries	2019	2000	
2	Afghanistan	63.2	55	=B2-C2
3	Albania	78	73.5	

Fig. 11

7) Progress in Life Expectancy from 1990-2000:
   a. Open the spreadsheet provided by your instructor.
   b. Enter the equation for subtracting 1990 life expectancy from 2000 life expectancy.
   c. Use the "sort" function to arrange the data in order of life expectancy differences between 1990-2000.
   d. Write names of places with 10 largest differences (changes) from 1990- to 2000.
   e. Generate a scatterplot with 1990 life expectancy on the x-axis and 2000 life expectancy on the y-axis. Give your graph a title and label for each axis and then circle the outliers where life expectancy declined.

Pre-Lab questions:

1. List 1-2 nations or territories where you expect to see the highest traffic fatality rates.

2. List 1-2 nations or territories where you expect to see the highest rates of indoor air pollution.

3. List 1-2 nations or territories where you expect to see the highest rates of obesity

4. List 1-2 nations or territories where you expect to see the highest rates of suicide.

Post-Lab questions:

1. Which region has the highest traffic fatality rate?

2. Which region has the highest rate of indoor air pollution?

3. Does this match the death rate from indoor air pollution?

4. What generates this pollution?

5. Which region has the highest rate of obesity? Name one of these nations:

6. Which region has the highest rate of suicide for ages 15-24? Name one of these nations:

7. Which region has the biggest difference in life expectancy between men and women? Name one of these nations:

8. What is responsible for this difference?

9. Where did life expectancy decline from 1990-2000? Name one of these nations:

10. What is responsible for this?

Assignment Checklist:
1. Did you completely answer pre-lab and post-lab questions?
2. Did you complete your two graphs and circle the outliers?
3. Do both graphs have titles, axis labels, and captions?