Subject: Standardizing glucose measurements across surveys
Posted by rkaren on Fri, 18 Sep 2020 16:12:35 GMT
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Hi everyone,

I want to compare glucose levels across countries that have such biomarker data available - ie Bangladesh 2011, Haiti 2017, India 2016, and Namibia 2013. The problem is the glucose measurements are not standardized across different surveys.
My two most pressing questions are:

What is the unit of measurement of the two glucose variables in Haiti 2017, both of which are labeled "glucose level (percent)" ?

What is the unit of measurement of the single glucose variable in India 2016, labeled "glucose level"?

Thank you!

Subject: Re: Standardizing glucose measurements across surveys
Posted by Bridgette-DHS on Mon, 21 Sep 2020 12:01:33 GMT
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Following is a response by Senior DHS Staff, Gulnara Semenov and Fred Arnold:

In NFHS-4 random blood glucose was taken as it was not possible to obtain a sample of respondents who had truly 'fasted', even though time since last meal (smb51) or time since last drink (smb52) information was collected. The dataset includes a recoded variable for glucose level (smb70) and the cut-off levels used to determine high glucose levels are 141-160mg/dl high glucose and >160mg/d very high glucose. This is regardless of whether or not the person was taking medication for diabetes. If you're interested in those taking medication, you could tabulate the percentage with normal blood glucose levels (<=140mg/dl) and taking medication. Please note that the high glucose values from the random blood glucose are not sufficient to 'diagnose' diabetes. For more information on diagnostic criteria for diabetes, please read this WHO report: https://www.who.int/publications/i/item/classification-of-di abetes-mellitus

In 2016-2017 Haiti DHS, The HemoCue® HbA1c 501 was used to measure glycated hemoglobin (HbA1c) in capillary blood. Blood glucose status based on glycated hemoglobin (HbA1c) testing is expressed in percentage (%). An HbA1c of 6.5% is used as a cut off (WHO 2011). This is described in details in the final report, page 8, 322, 337, Table 18.17 https://dhsprogram.com/pubs/pdf/FR326/FR326.pdf

Subject: Re: Standardizing glucose measurements across surveys
Posted by Anonymous on Sat, 23 Dec 2023 03:26:57 GMT

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Hi, I am having similar problems with the South African DHS data.

What is the unit of measurement of the glucose variables (glycated HbA1c) in South African DHS 2016?

Subject: Re: Standardizing glucose measurements across surveys
Posted by Bridgette-DHS on Tue, 26 Dec 2023 22:34:32 GMT
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Following is a response from Senior DHS staff member, Tom Pullum:

You would answer a question such as this with the following steps.

First, find the variable and the label in the PR file. This took me a couple of tries, but I finally found it with "lookfor hba":

shwhba1c int %8.0g SHWHBA1C final result hba1c for women (3 decimals implicit)

The label of the variable suggests that the values include a factor of 1000, but I proceed to check this.

Second, list the label to find the non-numeric codes:

```
. label list SHWHBA1C
SHWHBA1C:
      99995 inconclusive
```

This value must be excluded from any data analysis.

Third, summarize the numeric values of the variable:

```
. summarize shwhba1c if shwhba1c<99995

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
    shwhba1c |      4,331    6392.265    1344.853      3800      21400
```

Fourth, search the report to find the typical values in tables. I see that the cutoffs are 5.7% and 6.4%. Multiplied by 1000, these are 5700 and 6400. Those are in the range from 3800 to 21400, and with any other factor of 10 the values would be outside the range from 3800 to 21400.

Answer: the variable in the data file includes a factor of 1000.