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Subject: Question about Anemia Levels in NFHS5 Adult Data

Posted by [Shawn](#) on Thu, 19 Sep 2024 23:56:08 GMT

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Hi everyone,

I'm working with NFHS5 adult data, and I've noticed something strange regarding the anemia level definitions. While they are generally based on WHO guidelines, there are some discrepancies. For instance, WHO defines the range for moderate anemia as 8-10.9, but in the raw data I'm working with, the range is 7-10.9.

Even more confusing, the ranges for different levels of anemia overlap. For example, the maximum value for severe anemia in the data is 7.9, rather than the expected 7, which means there's an overlap between severe and moderate anemia ranges.

Has anyone else encountered this before? Any insights into why the data would be structured like this?

Thanks in advance for your help!

#### File Attachments

1) [Screenshot 2024-09-19 at 16.55.00.png](#), downloaded 125 times

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Subject: Re: Question about Anemia Levels in NFHS5 Adult Data

Posted by [Bridgette-DHS](#) on Fri, 20 Sep 2024 14:55:38 GMT

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Following is a response from Senior DHS staff member, Tom Pullum:

I believe you did a recode for adults without realizing that the boundaries are different for men and women. You have to look at ha56 and ha57 (for women) separately from hb56 and hb57 (for men). Women have higher physiological requirements for iron, compared with men.

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Subject: Re: Question about Anemia Levels in NFHS5 Adult Data

Posted by [Shawn](#) on Sun, 22 Sep 2024 22:39:55 GMT

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Hi Tom,

Thank you for your prompt response.

To clarify, I have not recoded the variable. I am working with the "Individual Recode" dataset

("IAIR7EFL.dta") from the India: DHS, 2019-21 dataset, which I accessed via the DHS Program website:

[https://dhsprogram.com/data/dataset/India\\_Standard-DHS\\_2020.cfm?flag=1](https://dhsprogram.com/data/dataset/India_Standard-DHS_2020.cfm?flag=1).

While the dataset is labeled as individual data, it only includes information from women respondents. Men's data are contained in a separate file. As a result, I did not perform any recoding related to adults, since this dataset only includes data from women. Additionally, I couldn't locate the variables you mentioned in your previous message. In my dataset, the variable representing hemoglobin levels is coded as v456.

I'm not sure if the above information helps. If you have any idea, please let me know.

I really appreciate your support. Thank you!

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Subject: Re: Question about Anemia Levels in NFHS5 Adult Data

Posted by [Bridgette-DHS](#) on Mon, 23 Sep 2024 17:19:22 GMT

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Following is a response from Senior DHS staff member, Tom Pullum:

Sorry--I see that we were talking about the same survey, but different files.

The biometric data are collected during the household survey. The hemoglobin concentrations and anemia levels are coded in the PR file (IAPR7EFL) as ha56 and ha57 for women and hb56 and hb57 for men. The cutoffs for constructing ha57 from ha56 are different from the cutoffs for constructing hb57 from hb56.

During data processing, DHS copies ha56 and ha57 into the IR file (in which cases are women), changing the names to v456 and v457, respectively. hb56 and hb57 are copied into the MR file (in which cases are men) as mv456 and mv457.

For this survey, the copying into the IR file was done correctly, but apparently the copying into the MR file was not done. As a result, the variables for men are ONLY in the PR file, as hb56 and hb57; the variables mv456 and mv457 should appear in the MR file but are missing. If you want these variables for men, you would never find them in an IR file. They should be in the MR file, but for this survey they are not.

The PR and MR files can be merged to correct this omission. Below I will paste Stata lines that will merge hb56 and hb57 into the MR file and will rename them as mv456 and mv457. There are 7,331 men in the MR file who do not have a valid value of mv457 in the merged file. I don't know why. Hope this will help.

```
* Specify a workspace
cd e:\DHS\DHS_data\scratch
```

```
* Open the PR file, prepare for merge
```

```
use "C:\Users\26216\ICF\Analysis - Shared Resources\Data\DHSdata\IAPR7EFL.DTA", clear
rename hv024 mv024
rename hv001 mv001
rename hv002 mv002
rename hvidx mv003
rename hb56 mv456
rename hb57 mv457
keep if mv457<.
keep mv*
```

```
save IAPR7Etemp.dta, replace
```

\* Open the PR file and merge

```
use "C:\Users\26216\ICF\Analysis - Shared Resources\Data\DHSdata\IAMR7EFL.DTA", clear
gen in_MR=1
merge 1:1 mv024 mv001 mv002 mv003 using IAPR7Etemp.dta
tab _merge in_MR,m
keep if in_MR==1
drop _merge
```

\* Save this file with a new name

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Subject: Re: Question about Anemia Levels in NFHS5 Adult Data

Posted by [Shawn](#) on Mon, 23 Sep 2024 18:30:19 GMT

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Hi Tom,

Thank you for such detailed information.

As you mentioned, the process of copying data into the IR file (which contains women's data) appears to be correct. The hemoglobin and anemia variables in the IR file are indeed taken directly from the data for women, so the anemia criteria should be accurate and consistent with the standards for women.

My question is about the overlapping anemia level ranges in the IR data, as shown in the screenshot I attached earlier. For instance, some women with hemoglobin levels between 7.0 and 7.9 are categorized as having "moderate" anemia, while others are marked as "severe." This suggests an inconsistency in the standard. I'm not sure if this issue stems from the copying process or a labeling discrepancy. Based on what you've said, it seems unlikely that the copying process is the cause of this overlap.

Do you have any thoughts on why the anemia level ranges are overlapping?

Thank you again. I really, really appreciate your support.

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Subject: Re: Question about Anemia Levels in NFHS5 Adult Data  
Posted by [Bridgette-DHS](#) on Tue, 24 Sep 2024 14:05:52 GMT  
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Following is a response from Senior DHS staff member, Tom Pullum:

Sorry for not seeing the issue earlier. I was thinking there was some mixing of men and women, and they have different standards. I see now that the mixing is of women who are pregnant with women who are not pregnant. An adjustment is made for women who report they are pregnant, because they have higher requirements for iron. Their thresholds for the anemia categories are 10 points lower. Here are the ranges:

So if you look separately at women by pregnancy status (ha54 in the PR file, v213 in the IR file), you will not see any overlap.

A few years ago we did a Methodological Report on the hemoglobin measurements to that date (<https://www.dhsprogram.com/pubs/pdf/MR18/MR18.pdf>). In section 2.1 of that report you will find something on the differences by sex, smoking, altitude, and pregnancy status.

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#### File Attachments

1) [anemia.png](#), downloaded 257 times

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