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# An International Database of Public Attitudes Toward Stuttering

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**Abstract**

The *Public Opinion Survey of Human Attributes–Stuttering (POSHA–S) Database*, intermittently updated, at the time of this report, contains 25,739 respondents from 45 countries with responses in 28 languages, representing 11 world regions. Among public and selected population samples, more than 600 self-identified stutterers are included. The Microsoft Excel database file features more than 150 columns of *POSHA–S* results. Some data, such as state/province and country of respondents, primary job or occupation, languages known, race, and religion, are included as text. Other demographic items and all attitude items are numerical data. The *POSHA–S* has check boxes or scales of 1–5 for other demographic variables and general ratings that compare stuttering to four other "anchor" attributes (intelligence, left-handedness, obesity, and mental illness). All subsequent stuttering attitude items are scored on a scale of 1–3, reflecting "no", "not sure", and "yes", respectively. All scaled ratings are converted to a uniform −100 to +100 scale, with some item ratings inverted so that, uniformly, higher ratings reflect more positive attitudes and lower ratings reflect more negative attitudes. All respondents are classified according to population, a category within population, region or continent, country, language, and other distinctive features.

**Keywords:** public attitudes; stuttering; *POSHA–S*; international; obesity; mental illness; left-handedness; intelligence

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## 1. Summary

### *1.1. Rationale*

Stuttering is primarily a genetically caused problem of speech fluency [1] that typically manifests as sound or syllable repetitions, sound or syllable prolongations, or silent or audible blocks or stoppages [2]. With some parallels to Wendell Johnson's classic interaction hypothesis [3], stuttering can be conceptualized as a two-pillar condition. The first, *personal* pillar relates to a speaker's stuttering and that speaker's reactions to his or her stuttering. The second, *societal* pillar, relates to a listener's reaction to the speaker's stuttering and his or her subsequent reaction to the listener's reaction [4]. It is within the societal pillar that stereotypes, stigma, and even discrimination evolve. Since the mid-1970s, research has shown that the general public [5], teachers [6], high school and university students [7], elementary students [8], preschool children [9], and even speech-language pathology trainees and practitioners [10] hold stereotypical or stigmatizing beliefs and reactions regarding the disorder of stuttering and a person who stutters. For example, stuttering is typically regarded as a psychological problem, and stutterers are commonly perceived as being more nervous, shy, and fearful than nonstutterers by all these groups. As a result of negative public attitudes, self-stigma can occur [11], wherein people who stutter come

to believe that they are "less than" or, in Goffman's words, are marked by a "spoiled identity" [12].

Using a variety of measures, such as semantic differential scales [13], nearly all research studies on public attitudes toward stuttering from the mid-1970s to 2000 reported examples of negative attitudes [14]. It was, however, impossible to ascertain what "average" public attitudes toward stuttering are or to directly compare results from one study to the next. Accordingly, in 1999, a task force was formed at West Virginia University to develop what was intended to become a standard measure of explicit public attitudes [15] toward stuttering and other human conditions [16]. The name adopted for the initiative was the International Project on Attitudes Toward Human Attributes (IPATHA), and the primary and first instrument to be developed was the *Public Opinion Survey of Human Attributes—Stuttering* (*POSHA–S*). IPATHA's stated vision was to understand and improve public attitudes toward stuttering and other stigmatizing conditions worldwide through objective measures, and its mission was to foster the effective use of the *POSHA*–S in comparing public attitudes and reducing stigma related to negative public opinion [14]. Six principles were adopted to guide the development of the *POSHA–S*: (a) to permit a comparison of attitudes toward stuttering to attitudes toward other human attributes using accepted epidemiological methods; (b) to be sufficiently short, understandable, and easy to complete for adults and older children of average literacy; (c) to possess satisfactory psychometric qualities such as reliability and validity; (d) to provide information that would be useful to potential stakeholders, such as speech-language pathologists and the stuttering self-help community; (e) to contain simple, grammatical, and slang-free language that would foster accurate translations to other languages; and (f) to permit easy and efficient scoring and interpretation of results [17].

### *1.2. Pilot Studies*

The first research effort of the IPATHA initiative was to gather data from a variety of countries on the first experimental prototype. It was termed the *POSHA–E* [17] (and later termed the *POSHA–E1* [18]). Following an extensive demographic section, this first version included a general section asking four questions about nine different human attributes (stuttering, obesity, mental illness, wheelchair use, old age, multilingualism, left-handedness, good talking, and intelligence). Next, for each of these attributes, a detailed section was developed. The demographic, general, and detailed sections for stuttering contained 148 items or questions. In the first US sample, 165 respondents rated the *POSHA–E1* for stuttering, in addition to parallel *POSHA*s pertaining to two of the other eight attributes in a counterbalanced order so that respondents would not be "primed" to think only about stuttering. A quasi-continuous linear scale with labels from 0 to 100, with 50 in the middle, followed each item. Respondents were instructed to mark through each line to depict their response to each item. Research assistants scored 165 returned questionnaires using transparent "rulers" to convert respondents' vertical marks to numbers from 0 to 100. Errors both in responding and in measuring the scales occurred, but a careful analysis revealed that these errors had virtually no effect on the overall results. Additionally, the questionnaires were determined to contain language that was appropriate for readability, i.e., from the 2nd to 8th grade reading level. The order of the stuttering section, appearing first, second, or third in the total questionnaire, also had no effect on the results [17].

"IPATHA partners" who were recruited or volunteered then administered experimental versions of the *POSHA* to public samples in the US and four other countries. The questionnaire was in English, except for samples in Bulgaria and Brazil, wherein it was translated to Bulgarian and Brazilian Portuguese, respectively [19]. A total of 744 respondents in 15 samples from the five countries filled out the *POSHA–E1* [20]. Soon, it became

clear that the *POSHA–E1* was too difficult and time-consuming for respondents to complete, and its quasi-continuous scale invited too many errors in both responding and data reduction [18].

Thus, the second experimental version (*POSHA–E2*) was developed, wherein the quasi-continuous scale was replaced throughout with a scale of 1–9 for all ratings in the demographic, general, and detailed stuttering sections. It fostered somewhat shorter administration time, far fewer errors in responding, and much less time in data reduction [18]. The *POSHA–E2* was administered to 25 different samples, where six of them were followed by a second administration for reliability assessment or post-intervention effects. A total of 1103 respondents from eight different samples in six different languages were recruited [20].

### *1.3. Final Version of the POSHA–S*

The subsequent process of developing the final version of the *POSHA–S* was informed by the fact that some of the 1–9 rating choices, most notably 4 and 6, were rarely selected. Also, the process of deciding about numerous items on such a long scale resulted in too many respondents going back and changing previous items, something they were instructed not to do unless they realized they had made an error. These limitations led the author to strive for a shorter and more user-friendly questionnaire. First, the demographic and general item ratings were changed to a scale of 1–5, and the detailed stuttering item scale was changed to a 1–3 rating, wherein 1 = "No", 2 = "Not Sure", and 3 = "Yes". Second, an item analysis was carried out to change or eliminate items that had been worded ambiguously (e.g., "ignore stuttering" versus "try to act like the person was talking normally"), items that did not translate well (e.g., "my younger child's teacher" must include "younger than who?" in Spanish), items that were quite invariable in different populations, and items unlikely to change after interventions to improve attitudes. Final item selection was also informed by standard factor analysis [18].

The demographic section of the final *POSHA–S* includes a wide variety of variables that might predict more positive versus less positive stuttering attitudes. It asks respondents to identify their country and state/province/district of birth and current residence, age, years of education, sex (or gender if the respondent interpreted "sex" in that way), marital status currently or in the past, parental status, work or student status, primary occupation or the one in which they were best trained, native (mother tongue) and later languages known, religion, and race. This section also asked for ratings of the respondents' income relative to their friends and family and relative to all the people in their country. From these two 1–5 ratings, a relative income score is generated that is weighted more heavily on the latter country rating. Next, respondents are asked to rate their physical health, mental health, ability to learn, and ability to speak. Finally, it asks them to rate 12 different life priorities, such as "being free" or "attending parties and social events".

The general section asks for three ratings and one "select all that apply" item for stuttering, as well as the "anchor" attributes of obesity, mental illness, left-handedness, and intelligence. For all of them, respondents are asked to rate their overall impression of the attribute, the degree to which they would like to have the attribute, and the amount known about the attribute. The fourth item asks who the respondent knows for each of the attributes, with choices (and weightings) to generate a Personal Experience score from their cumulative checks for nobody, acquaintance, close friend, relative, me (oneself), or other.

The final *POSHA–S* contains 33 demographic open-ended questions and ratings, 15 general ratings and five checklists, and 35 ratings in the detailed stuttering section. The stuttering items are presented after different prompts (e.g., "I believe stuttering is caused by…"). Four additional stuttering items are taken from the general section, that is, overall impression, wanting to have stuttering, amount known, and persons known

who stutter. In standard scoring of the *POSHA–S*, all stuttering-related item ratings are averaged into eight components. The means for four components (i.e., Traits/Personality, Help From, Cause, and Potential) are further averaged into a Beliefs subscore. Beliefs are regarded as *external* in the sense that respondents must rely on what they have learned, heard, or intuited without needing to think about themselves. The other four components (i.e., Accommodating/Helping, Social Distance/Sympathy, Knowledge/Experience, and Knowledge Source) are averaged into a Self Reactions subscore that is *internal*. In this case, respondents must consider their own likely reactions to a person stuttering or their knowledge about the disorder. Finally, the Beliefs and Self Reactions subscores are averaged to generate the Overall Stuttering Score.

A third subscore, Obesity/Mental Illness, is included to compare stuttering attitudes to attitudes toward other, typically undesired, attributes. The means of items for obesity and mental illness become components of the overall impression, want to be or have, and amount known for these two attributes. The three components are averaged for the Obesity/Mental Illness subscore. Persons known selected for the remaining two general attributes, i.e., left-handedness and intelligence, are included as demographic descriptors; however, their scaled ratings are not included in the standard scoring of the *POSHA–S*.

All scaled ratings on the *POSHA–S* are converted to a scale of −100 to +100. Moreover, based on the extant literature on the nature of stuttering, accuracy, and sensitivity, as reported by stutterers [21], higher scores on the scale of −100 to +100 reflect more positive attitudes, and lower scores reflect less positive attitudes. Accordingly, converted scores for some items, such as "If it were talking with a person who stutters, I would fill in the person's words", are inverted, such that a rating of 3 ("yes") is considered a negative attitude, while a rating of 1 ("no") is considered positive.

All the variables in the *POSHA–S* are listed in a Microsoft Excel file (Table S1) that serves as a comprehensive guide of variables, formulas used for data manipulation and scoring, and summary descriptive statistics. It lists all demographic items, general items, and detailed stuttering items and how they are manipulated to generate summary scores. For example, selected persons known with stuttering are listed both as demographic items and, after applying a weighted formula, as the "persons known" in the Knowledge/Experience component. Table S1 also displays percentages of respondents who identified themselves as male or female, single or married, being a person who stutters or having any of the other "anchor" attributes, and so on. It lists percentages of the database respondents from each of the 45 countries. Further, it lists formulas utilized to convert data to a common rating and combinations that generate summary attitude scores. Finally, it provides descriptive statistics for all the numerical variables in terms of means and medians for all the sample means. The means, standard deviations, and ranges for all the individual respondents are also included.

The English version of the *POSHA–S* contains language that would be easily understood by literate persons. Wording was carefully edited to avoid slang and vernacular and, also, to avoid pretentious or highly technical vocabulary. The goal was to generate simple and correct English that was as unambiguous as possible. Interested investigators who contacted the author about using the instrument in their non-English language were instructed to follow those same guidelines. Investigators then translated (or arranged for someone else to translate) the instrument into the other language. Next, they arranged for a different person, who was highly skilled in both English and the other language and also reasonably knowledgeable about speech-language pathology, to back-translate the new version into English. This was then matched with the English version. Perfect translations are impossible, but any serious discrepancies were corrected through correspondence between the author and the potential investigator.

## 2. Data Description

### *2.1. POSHA–S Database Overview and Standard Scoring*

The current *POSHA–S Database* (Table S1) contains 25,739 respondents obtained from 261 different samples, representing 45 countries and 11 world regions, with responses in 28 languages. The mean number of respondents in individual samples was 99.

Figure 1 is a radial graph that displays the lowest (least positive) and highest (most positive) mean values from any sample (*not an individual respondent*) in the database. Importantly, these lowest and highest mean values did not come from the same samples. Figure 1 also shows the median of all the sample means for each variable as the best current estimate of "average" attitudes toward stuttering. The median of sample means was chosen because it reduced the influence of atypical samples that were unusually positive or negative. These three scores (lowest, median, and highest) are displayed for the three subscores and components within them. Data points closer to the center are more negative; those closer to the periphery are more positive. A decision was made early in the development of the database that the median scores for numerical ratings would be taken from all sample means that explored attitudes of the general public ($n$ = 12,229). It excluded, for example, means of samples of SLP students. However, the lowest and highest sample means were taken from all samples, regardless of their population makeup.

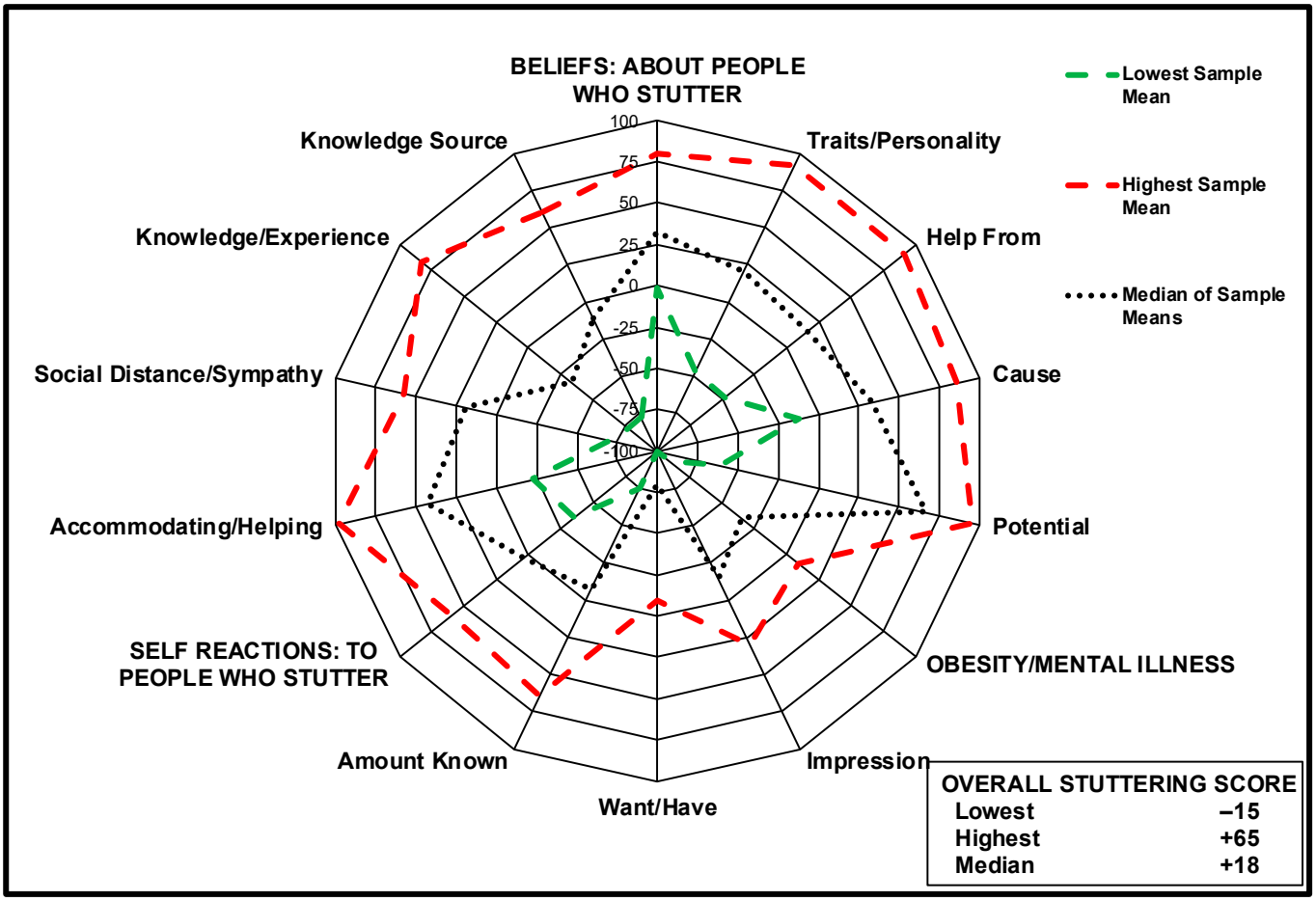


**Figure 1.** Radial graph showing the lowest sample mean value, the highest sample mean value, the median of all public sample mean values, and the Overall Stuttering Scores for 261 samples utilizing the *POSHA–S*.

Typically, in professional presentations and research articles, individual samples being analyzed are superimposed on the radial graph such that investigators can compare the

positivity or negativity of attitudes of their sample(s) to all the previous samples in the database [14]. Numerical values for these subscores and components, as well as Overall Stuttering Scores, on a scale of −100 to +100, are listed in Table 1. The table also shows the means and standard deviations for all 25,739 respondents combined. It can be seen that the combined mean values are quite similar to the median of the 261 sample means, with a mean difference of only 3.4 units on the 201-unit scale (−100 to +100), with a range of 0–10 units.

**Table 1.** *POSHA–S* summary scores for the lowest sample mean value, the highest sample mean value, and the median of all public sample mean values for 261 samples.

| *POSHA–S* Summary Scores | Lowest Sample Mean | Highest Sample Mean | Median of Sample Means [a] | All Respondents: Mean | All Respondents: Standard Deviation |
|---|---|---|---|---|---|
| **Overall Stuttering Score** | **−15** | **+65** | **+18** | **+17** | **21** |
| **Beliefs** | **−1** | **+80** | **+33** | **+32** | **26** |
| Traits/Personality | −47 | +91 | +21 | +14 | 55 |
| Help From | −48 | +91 | +16 | +19 | 42 |
| Cause | −12 | +86 | +33 | +31 | 38 |
| Potential | −61 | +96 | +67 | +63 | 40 |
| **Self Reactions** | **−36** | **+60** | **+3** | **+3** | **26** |
| Accommodating/Helping | −22 | +98 | +44 | +41 | 36 |
| Social Distance/Sympathy | −71 | +57 | +19 | +9 | 42 |
| Knowledge/Experience | −77 | +83 | −34 | −33 | 44 |
| Knowledge Source | −76 | +60 | −11 | −5 | 60 |
| **Obesity/Mental Illness** | **−90** | **+2** | **−35** | **−31** | **29** |
| Impression | −100 | +26 | −15 | −10 | 44 |
| Want/Have | −100 | −10 | −79 | −77 | 37 |
| Amount Known | −75 | +53 | −9 | −5 | 46 |

Note: Bold text and numbers represent the subscores and Overall Stutterng Scores. [a] Reflecting sample means from the public only.

Figures 2 and 3 display the individual items for each component in the line graphs for Beliefs and Self Reactions, respectively. Figure 4 is a similar graph that shows the first three items for the five attributes from the general section of the *POSHA–S*.

Table S2 contains the *POSHA–S Database.* It is a Microsoft Excel file in which the columns identify the *POSHA–S* variables at the top. Each row contains results for one respondent. The numerical results, highlighted in orange, are ratings that have been inverted so that the higher −100 to +100 converted scores represent more positive attitudes, and lower converted scores reflect more negative attitudes. Numerical ratings that have not been inverted are highlighted in pink. Component scores are shown in green, subscores in red, and Overall Stuttering Scores in a brighter red. Text values are listed in the form that individual research partners recorded them. Most are in English, but some have not been translated. Also provided for each respondent are the country, continent or region, population sampling group, and, in some cases, an additional description.

At the bottom of the Excel file, summary data for each of the 261 samples are provided, duplicating those shown in the vertical table in Table S1. Samples are identified by population category (e.g., professionals—teaching), region, country, language, and, for some samples, other relevant information. The percentages of respondents from the 45 countries, 11 regions, and 28 languages are shown in Table 2.

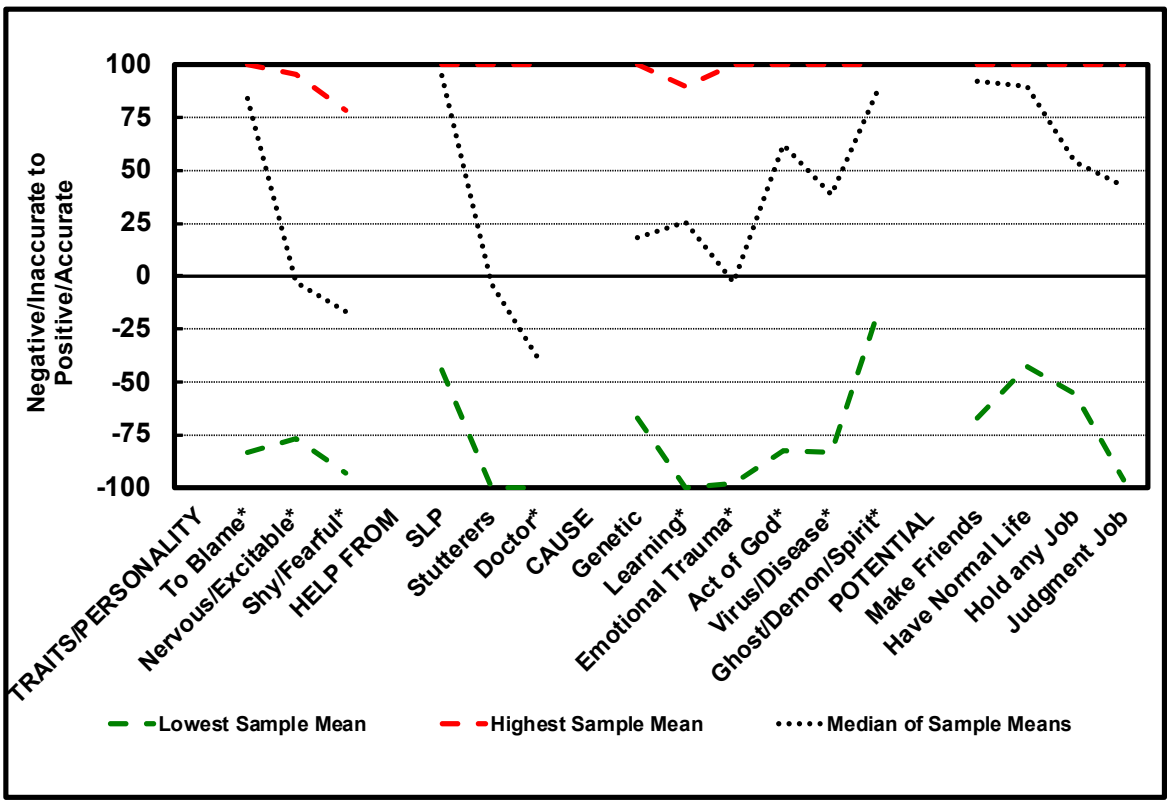


**Figure 2.** Graph showing the lowest sample mean value, the highest sample mean value, and the median of all public sample mean values for all items in the Beliefs subscore for 261 samples utilizing the *POSHA–S*. Asterisks (*) indicate item scores that were inverted.

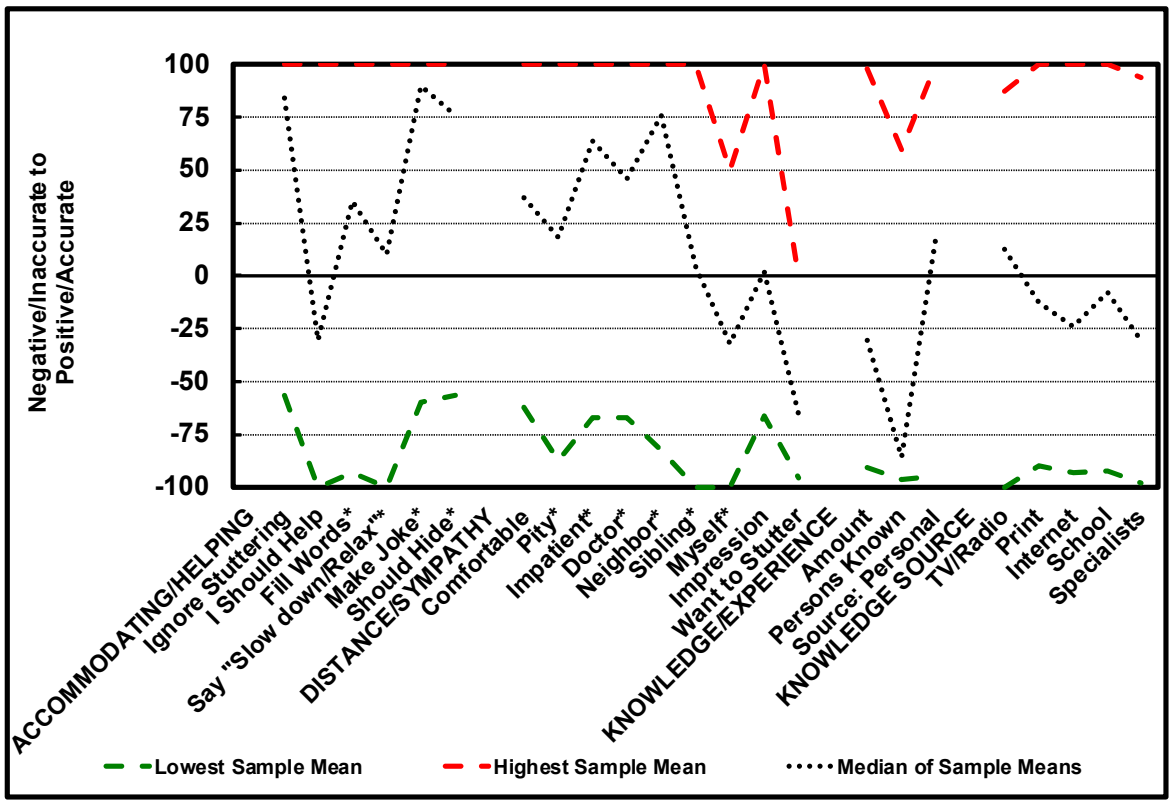


**Figure 3.** Graph showing the lowest sample mean value, the highest sample mean value, and the median of all public sample mean values for all items in the Self Reactions subscore for 261 samples utilizing the *POSHA–S*. Asterisks (*) indicate item scores that were inverted.

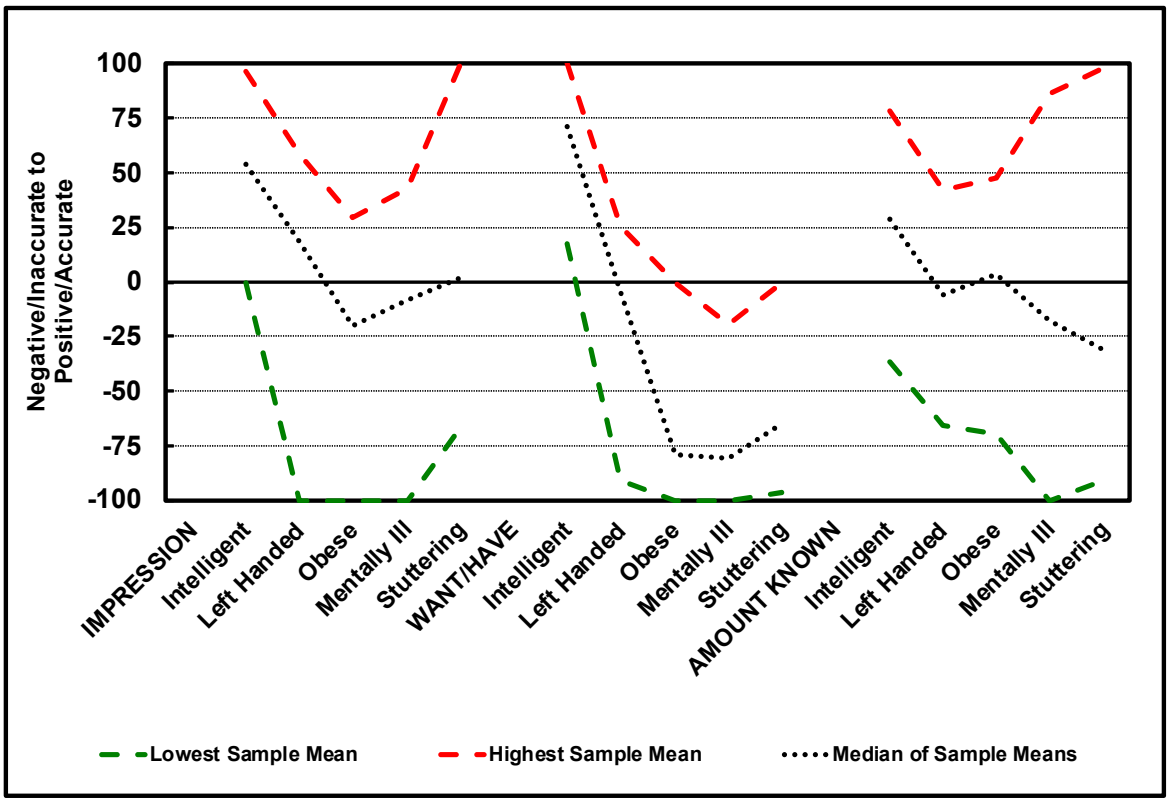


**Figure 4.** Graph showing the lowest sample mean value, the highest sample mean value, and the median of all public sample mean values for overall impression, want to have or be, and amount known about five human attributes for 261 samples utilizing the *POSHA–S*.

**Table 2.** Percentages of respondents from the various countries and regions, as well as the languages of the *POSHA–S* administration.

| Country | % | Region | % | Language | % |
|---|---|---|---|---|---|
| Australia | 2.37% | Africa | 6.69% | Arabic | 12.77% |
| Barbados | 0.19% | Caribbean | 0.68% | Bemba | 1.26% |
| Belgium (Flanders) | 0.20% | East Asia | 9.68% | Bosnian | 3.31% |
| Bosnia-Herzegovina | 2.43% | Eastern Europe | 14.26% | Creole | 0.12% |
| Canada | 0.12% | Middle East | 20.11% | Croatian | 0.08% |
| China | 3.12% | North America | 23.33% | English | 36.76% |
| Croatia | 0.22% | South Asia | 9.74% | Dutch | 0.44% |
| Egypt | 3.16% | Southeast Asia | 1.40% | Farsi | 1.36% |
| France | 0.82% | South Pacific | 2.44% | French | 0.82% |
| Germany | 2.31% | Western Europe | 11.65% | German | 2.29% |
| Haiti | 0.12% | | | Hebrew | 2.13% |
| Hong Kong | 1.11% | | | Hindi | 0.23% |
| India | 8.56% | | | Italian | 1.20% |
| Iran | 1.37% | | | Japanese | 1.46% |
| Ireland | 0.14% | | | Kannada | 4.69% |

**Table 2.** *Cont.*

| Country | % | Region | % | Language | % |
|---|---|---|---|---|---|
| Israel | 2.14% | | | Korean | 2.15% |
| Italy | 1.21% | | | Malay | 0.43% |
| Japan | 1.47% | | | Malayalam | 1.05% |
| Jordan | 1.05% | | | Norwegian | 1.43% |
| Korea | 2.17% | | | Polish | 9.16% |
| Kuwait | 4.03% | | | Portuguese | 1.55% |
| Lebanon | 0.29% | | | Russian | 0.58% |
| Malaysia | 1.41% | | | Serbian | 1.13% |
| Malta | 0.42% | | | Simplified Chinese | 4.20% |
| Nepal | 1.91% | | | Sinhala | 0.35% |
| Netherlands | 0.23% | | | Spanish | 1.67% |
| New Zealand | 0.10% | | | Swedish | 0.21% |
| Norway | 1.44% | | | Turkish | 7.17% |
| Pakistan | 0.81% | | | | |
| Poland | 9.23% | | | | |
| Portugal | 1.56% | | | | |
| Puerto Rico | 0.38% | | | | |
| Russia | 0.59% | | | | |
| Saudi Arabia | 3.93% | | | | |
| Serbia | 1.14% | | | | |
| South Africa | 1.88% | | | | |
| Spain | 1.31% | | | | |
| Sri Lanka | 0.42% | | | | |
| Sudan | 0.43% | | | | |
| Sweden | 0.24% | | | | |
| Syria | 0.24% | | | | |
| Turkiye | 7.21% | | | | |
| UK | 1.85% | | | | |
| USA | 23.39% | | | | |
| Zambia | 1.27% | | | | |
| | 100.00% | | 100.00% | | 100.00% |

Every effort was made to include all respondent data, including outliers. When respondents—or sometimes investigators—omitted an item, it is shown as a period. The 1–5 ratings were followed by an "I don't know" choice. When those were circled or otherwise selected electronically, a "u" was entered into the database cells.

Importantly, despite great care in correcting errors, there are no doubt mistakes or inconsistencies in the database. Some of the actions taken to clean the Excel file and correct errors are as follows. First, all spaces before and after any of the numbers or

single-letter responses (e.g., "m" versus "f" for sex) were removed using the Find/Replace function. Second, when a formula encountered a non-recognized number but the intent of the respondent seemed clear, it was changed to the likely target (e.g., ".5" for "5" in the 1–5 scale. Errors that could not logically be predicted were replaced by a blank (a period ["."]) because Excel reads a completely blank cell as a "0" in formulas. Third, after linking all the respondents to a chronological number, the entire set of respondents was sorted on variables such as age and education. Strange or impossible responses (e.g., "0" for age) were changed to periods. Fourth, most of the unusual numbers entered for the various attitude ratings could be identified by errors or impossible results in the formulas for summary scores (e.g., when a variable was less than –100 or greater than +100). By using backward formula tracking, the erroneous entry could nearly always be found and corrected. Fifth, the fact that the database has been frequently updated for nearly 20 years, inconsistencies and errors in data entry and database conversion have typically been identified and corrected. For example, update summaries showing results with added respondents have been kept as backup files since mid-2013. Since then, 49 different versions have been generated. As noted, an early analysis of a much more difficult rating and scoring system yielded considerable errors, but those made virtually no difference in the means after they had either been corrected or deleted [17]. In addition, there is no doubt that occasional respondents did not respond for a variety of reasons, which was anticipated [18]. Nevertheless, a consistency in numerous similar samples generating very similar results provides evidence that occasional errors have little, if any, effect on mean values.

At the bottom of the database, the lowest, highest, and median values of sample means are provided. In cases where investigators administered the *POSHA–S* two or more times, only the values for the first (pre-test) administration are considered. It can be noted that there are 65 s (post-test) administrations that are not included in this database.

### *2.2. Data Conversions*

The 1–5 ratings in the demographic and general sections are converted to the −100 to +100 scales by subtracting 3 from the rating and multiplying the difference by 50. The "u" or blank cells are not included in the calculations. For the 1–3 ratings in the detailed stuttering section, the −100 to +100 conversion involves subtracting 2 from the rating and multiplying the difference by 100. Only two other weighted scores are calculated differently. As noted earlier, for the identification of "people I have known who..." general item for the five attributes, each item checked is recorded with a "1" in the Excel worksheet. A preliminary rating from 0 to 100 units is generated as the sum of Me = 60, Close Friend = 20, Relative = 10, Acquaintance = 5, Other = 5, and Nobody = 0. This value is then converted to −100 to +100 by subtracting 50 and then multiplying by 2. This Personal Experience score for stuttering (me, friends, family, and others) is included in the Knowledge component of the Self Reactions subscore.

The converted means are shown for 1–5 ratings of respondents' income compared to that of their family and friends and compared to that of all the people in their country. However, the relative income score is calculated only when both the 1–5 ratings for both comparisons have been filled in. They are converted to a scale of −100 to +100 according to the following formula: ((((B × 5) + A) − 5) − 13) × 100/12. The country value is weighted much more heavily than the family/friend value, as shown in Table 3, moving left to right.

**Table 3.** Relative income conversions. Countrymen ratings are shown in red, family/friends ratings are shown in green, and converted scores to the -100 to +100 scale are shown in blue.

| |
|---|
| $1 \times 5 = 5 + 1 = 6 - 5 = 1 - 13 = -12 \times (100/12) = -100.00$ |
| $1 \times 5 = 5 + 2 = 7 - 5 = 2 - 13 = -11 \times (100/12) = -91.67$ |
| $1 \times 5 = 5 + 3 = 8 - 5 = 3 - 13 = -10 \times (100/12) = -83.33$ |
| $1 \times 5 = 5 + 4 = 9 - 5 = 4 - 13 = -9 \times (100/12) = -75.00$ |
| $1 \times 5 = 5 + 5 = 10 - 5 = 5 - 13 = -8 \times (100/12) = -66.67$ |
| $2 \times 5 = 10 + 1 = 11 - 5 = 6 - 13 = -7 \times (100/12) = -58.33$ |
| $2 \times 5 = 10 + 2 = 12 - 5 = 7 - 13 = -6 \times (100/12) = -50.00$ |
| $2 \times 5 = 10 + 3 = 13 - 5 = 8 - 13 = -5 \times (100/12) = -41.67$ |
| $2 \times 5 = 10 + 4 = 14 - 5 = 9 - 13 = -4 \times (100/12) = -33.33$ |
| $2 \times 5 = 10 + 5 = 15 - 5 = 10 - 13 = -3 \times (100/12) = -25.00$ |
| $3 \times 5 = 15 + 1 = 16 - 5 = 11 - 13 = -2 \times (100/12) = -16.67$ |
| $3 \times 5 = 15 + 2 = 17 - 5 = 12 - 13 = -1 \times (100/12) = -8.33$ |
| $3 \times 5 = 15 + 3 = 18 - 5 = 13 - 13 = 0 \times (100/12) = 0$ |
| $3 \times 5 = 15 + 4 = 19 - 5 = 14 - 13 = 1 \times (100/12) = +8.33$ |
| $3 \times 5 = 15 + 5 = 20 - 5 = 15 - 13 = 2 \times (100/12) = +16.67$ |
| $4 \times 5 = 20 + 1 = 21 - 5 = 16 - 13 = 3 \times (100/12) = +25.00$ |
| $4 \times 5 = 20 + 2 = 22 - 5 = 17 - 13 = 4 \times (100/12) = +33.33$ |
| $4 \times 5 = 20 + 3 = 23 - 5 = 18 - 13 = 5 \times (100/12) = +41.67$ |
| $4 \times 5 = 20 + 4 = 24 - 5 = 19 - 13 = 6 \times (100/12) = +50.00$ |
| $4 \times 5 = 20 + 5 = 25 - 5 = 20 - 13 = 7 \times (100/12) = +58.33$ |
| $5 \times 5 = 25 + 1 = 26 - 5 = 21 - 13 = 8 \times (100/12) = +66.67$ |
| $5 \times 5 = 25 + 2 = 27 - 5 = 22 - 13 = 9 \times (100/12) = +75.00$ |
| $5 \times 5 = 25 + 3 = 28 - 5 = 23 - 13 = 10 \times (100/12) = +83.33$ |
| $5 \times 5 = 25 + 4 = 29 - 5 = 24 - 13 = 11 \times (100/12) = +91.67$ |
| $5 \times 5 = 25 + 5 = 30 - 5 = 25 - 13 = 12 \times (100/12) = +100.00$ |

### *2.3. Using the POSHA–S Database*

Comparisons of any given sample to the database's highest, lowest, and median sample means at the time of the research were reported in the large majority of published and unpublished *POSHA–S* studies [14]. In nearly all of these studies, the paper's author sent an Excel workbook to the investigators wherein they could enter their *POSHA–S* data. Once it was sent back to him for entry into the database, he then generated graphs (as shown in Figures 1–4) and descriptive statistics (i.e., means and standard deviations) of their samples, as well as percentile comparisons of all items, components, subscores, and Overall Stuttering Score relative to the extant samples in the database. The most recent one- and two-sample version of the Data Entry & Graphs Excel workbook [22,23] generates graphs, descriptive statistics, and percentiles automatically.

Research has also utilized selected data from the *POSHA–S Database* itself. Sorting it by country and by profession, studies by Arnold, Li, and others compared stuttering attitudes of teachers versus nonteachers [24,25] and police or other protection workers versus controls [26]. They also explored the relationship between Beliefs and Self Reactions [27]. Hughes et al. selected males and females who were either parents or non-parents in various countries and showed that Middle Eastern fathers had more positive attitudes than mothers, whereas the opposite was true of North American and European mothers and fathers [28]. St. Louis explored the extent to which the various general ratings for overall impression, want to be/have, amount known, and persons known for all five attributes (stuttering, obesity, mental illness, left-handedness, and intelligence) could predict Overall Stuttering Scores [29]. St. Louis also analyzed the database to identify and rank the predictive power of 34 different *POSHA–S* variables, showing that subscores for Beliefs

and Self Reactions were best predicted by different combinations of variables [4]. A study compared English and French speakers from Canada and Cameroon to a control group of monolingual English speakers in the US, who were selected from the database [30]. Although pre- versus post-test samples are not available in the *POSHA–S Database* reported herein, data from 41 different intervention and non-intervention pre- versus post-studies have shown that respondents' attitudes toward stuttering are less stable than previously assumed [31–33].

As explained, the respondents from all the samples in the database are listed in random order to render it virtually impossible to reconstruct individual samples. Therefore, in order to identify selected groups, the database must be sorted according to various criteria. This can be done in most statistical programs, such as SPSS (Version 29.0.2.0) but it can also be done in Excel. For example, Hughes et al. [28] first made a copy of the listed respondents. Second, they utilized the Sort function to first sort the data by region. Third, they deleted all the rows that were not Middle East, Western Europe, Eastern Europe, and North America. Fourth, they created two files, one for the Middle East and another for Europe and North America. Fifth, they sorted each of the two files, with sex as the first variable (male versus female) and parent as the second variable (yes versus no). This yielded all the respondents who were male and female parents, as well as male and female non-parents. Sixth, the Overall Stuttering Scores for each of these four groups in the two different files were analyzed with descriptive and inferential statistics.

In a similar manner, the *POSHA–S Database* can be sorted to answer an indefinite number of research questions. For example, a simple study could determine the percentage of left-handedness in self-identified stutterers versus nonstuttering respondents who identified a relative who stutters versus nonstutterers who know nobody who stutters.

A more complicated but time-consuming study might involve socioeconomic class (SES). Most previous studies of SES have considered relative income and years of education [34]. A researcher may wish to explore the effect of SES as a predictor of stuttering attitudes more systematically by including occupation. It might follow the model of an unpublished study when the database contained only 3751 respondents from 56 samples [35]. In that study, the text answers to "The job that I am best trained to do, or the job I worked at the longest, is (was):" were categorized according to Hauser and Warren's "Total Socioeconomic Index" (TSEI) [36]. Differences in TSEI were then used to determine differential effects on Overall Stuttering Scores. A comprehensive study of the influence of SES on stuttering attitudes might involve developing a formula for combining relative income, education, and a measure of vocational status (e.g., TSEI) and its effect on stuttering attitudes in various regions of the world.

If users of the database wish to translate non-English text, such as for occupation, race, and religion, located at the far right of the row for each respondent, the language of the *POSHA–S* is listed. After carrying out the preliminary sorting of the data to select their potential sample, secondary sorting can be performed according to respondents' language. Then, for each language, those responses can be copied to another Excel workbook. Depending on the number of cells involved, Microsoft's translation tool in Word often provides adequate English conversions from many global languages. Text responses from each non-English language can be individually copied and pasted into a Word document, generating a table. Using the translation tool, it can then be changed to English and repasted back into the Excel workbook, language by language.

## 3. Methods

### *3.1. POSHA–S Psychometric and Practical Characteristics*

Following pilot studies that used the first experimental prototype (*POSHA–E1*), the author and his student research assistants, as well as international partners, carried out experiments with the *POSHA–E2* and, soon after, the *POSHA–S*. These studies have documented satisfactory psychometric and other characteristics of the instrument, namely, test–retest reliability [18,32,37,38], construct and concurrent validity [39], and internal consistency [18,40]. The investigations also established comparable results from the *POSHA–S* versus the *POSHA–E2* [18], translatability [30], important considerations in sampling strategies [41], and paper-and-pencil versus electronic survey methods [42].

### *3.2. Obtaining Data from IPATHA Partners*

For more than 20 years, interested researchers have contacted the author about using the *POSHA–S* to measure attitudes of the public or various subgroups of populations (e.g., university students, teachers, parents, or the general public) in their countries or regions. At the outset of the IPATHA initiative, a decision was made that the instrument would be made available to researchers at no cost, provided that three conditions were agreed upon beforehand: (a) all appropriate protections for human subject research must precede the data sampling, (b) an anonymous copy of the researchers' raw data would be entered into a *POSHA*–S Excel workbook provided by the author and a copy would be sent to the author to include the results in a growing database, and (c) presentations or publications of the research would acknowledge that the instrument was used with permission. Importantly, and up to the time of this report, the same requirement for free use in exchange for adding raw data to the database has been consistently applied. This means that the database is not static; as noted, it has been updated several times each year. The version described herein was updated in September 2025.

### *3.3. Alternate Access to the Database and Related Materials*

In addition to the current version in Table S2, future versions with additional data from more countries will be made available from the www.teacherspayteachers.com (TPT) website. As more data are acquired, the database will be updated periodically; however, given its large size, mean or median values for the various scores are likely to change minimally. The TPT *POSHA–S Database* file also contains the much smaller databases for the two experimental versions, the *POSHA-E1* and *POSHA–E2*. The author has made numerous related files available for download from TPT, including the *POSHA–S* in English [43] and 29 other languages, a child version (*POSHA–S/Child*) [44], and a *POSHA* for another fluency disorder known as cluttering (*POSHA–Cl*) [45]. Further, the *Appraisal of the Stuttering Environment* (*ASE*), which is an adaptation of the *POSHA–E2* using a scale of 1–9, was developed for clinical use by speech-language pathologists rather than epidemiological investigations [46]. Extant translations and databases for these instruments are also available for download.

The *POSHA* has also been adapted for obesity (*POSHA–Ob*) and mental illness (*POSHA-MI*). A recent study using three different *POSHA*s showed that public attitudes were the most negative for mental illness, less negative for stuttering, and least negative for obesity [29].

The *Data Entry & Graphs* Excel workbook for the *POSHA–S* is available in two versions for a fee from TPT. One version analyzes data for one sample [22], and the other analyzes and compares data for two samples [23]. Additionally, at no cost, users can download the following documents from TPT: *Excel Workbook Data Entry & Analysis Assistance* [47],

*Formula Explanations for POSHA Instruments and the ASE* [48], and *IPATHA Bibliography* [49]. An *IPATHA Instruments User's Guide* [50] is also available for a fee.

**Supplementary Materials:** The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/data10090147/s1, Table S1: Guide for variables, scoring, and summary data; Table S2: *POSHA–S Database.*

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**Institutional Review Board Statement:** All studies involving this database were conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of West Virginia University (protocol number 1801918277 approved 10 January 2018). All external contributors involved in the database agreed beforehand that they would obtain formal human ethics approval at their institutions prior to administering the *POSHA–S* to their respondents. The individual respondents are listed in random order, and the various samples are identified only by region, country, language, and population. These add another layer of anonymity protection; whereas the mean sample values are provided, identifying the individuals making up any given sample is virtually impossible.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in this study.

**Data Availability Statement:** The data are contained within the Supplementary Materials. The original contributions presented in this study are included in the article/Supplementary Materials. Further inquiries can be directed to the corresponding author. The current *POSHA–S Database* and a guide for variables, scoring, and summary data are submitted as supplements to this paper in the journal *Data*.

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**Conflicts of Interest:** The author declares no conflicts of interest, except (a) owning the copyright of the *POSHA–S* and (b) receiving less than $1000 US in royalties since making it available for a fee on the TPT website, in 2022.

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