

## POSHA-S Public Attitudes Toward Stuttering: Online Versus Paper Surveys

## Projet POSHA-S sur les attitudes populaires face au bégaiement : Enquêtes électroniques c. imprimées

### KEY WORDS

STUTTERING

ATTITUDES

POSHA-S

ONLINE

PAPER-AND-PENCIL

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### Abstract

*Purpose:* Attitudes toward stuttering, measured by the *Public Opinion Survey of Human Attributes–Stuttering (POSHA–S)*, are compared between two strategies of administration: paper-and-pencil versus online.

*Method:* Two convenience samples of adults filled out *POSHA–Ss*, one using printed paper surveys and another using an electronic link to an online survey.

*Results:* Public attitudes were very similar between paper-and-pencil and online administrations, even though a few substantial differences were observed between the two samples.

*Conclusions:* The *POSHA–S* generally appears to be robust with respect to type of administration.

### Abrégé

*Objectif :* Les attitudes des personnes face au bégaiement, mesurée grâce au Sondage de l'opinion publique sur les caractéristiques de personnes ayant un bégaiement (*POSHA–S*), font l'objet d'une comparaison entre deux stratégies d'administration : version papier c. version électronique.

*Méthode :* Deux échantillons d'adultes ont rempli un questionnaire *POSHA–S*, un échantillon l'a fait en utilisant une version papier et l'autre une version électronique en utilisant un hyperlien menant vers le sondage en ligne.

*Résultats :* Les résultats associés aux attitudes populaires étaient très similaires entre les versions papier et électronique, même si on a observé quelques différences de fond entre les deux échantillons.

*Conclusions :* Le *POSHA–S* semble généralement fiable peu importe le mode d'administration que ce soit en version papier ou électronique.

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## Introduction and Purpose

A rapidly growing area of research has shown that the public holds a number of negative attitudes toward stuttering, especially when rating hypothetical people who stutter (e.g., Al-Khaledi, Lincoln, McCabe, Packman, & Alshatti, 2009; Betz, Blood, & Blood, 2007; Blood, Blood, Tellis, & Gabel, 2003; Boyle, Blood, & Blood, 2009; Doody, Kalinowski, Armson, & Stuart, 1993; Dorsey & Guenther, 2000; Evans, Healey, Kawai, & Roland, 2008; Gabel, Blood, Tellis, & Althouse, 2004; Hughes, Gabel, Irani, & Schlagheck, 2010; Hult & Wirtz, 1994; Langevin, 2009; MacKinnon, Hall, & MacIntyre, 2007; St. Louis, Reichel, Yaruss, & Lubker, 2009). These studies utilized paper-and-pencil questionnaires administered either individually or in groups. Other strategies have included face-to-face conversations (e.g., de Britto Pereira, Rossi, & Van Borsel, 2008; McDonald & Frick, 1954; Van Borsel, Verniers, & Bouvry, 1999) or telephone calls (e.g., Craig, Tran, & Craig, 2003; Ham, 1990). Published studies of online surveys of public attitudes toward stuttering are scarce or nonexistent; however, a few online surveys relating to stuttering have been published (e.g., Au-Yeung, Howell, Davis, Charles, & Sackin, 2001). Also, stuttering self-help organizations have posted announcements of a number of recent online surveys relating to people who stutter (e.g., BSA, 2011; NSA, 2011).

In 1999, the author and several colleagues inaugurated the International Project on Attitudes Toward Human Attributes (IPATHA) with the purpose of developing a standard measure of public attitudes toward stuttering that could be used anywhere in the world (St. Louis, 2011a). The instrument developed is known as the *Public Opinion Survey of Human Attributes-Stuttering (POSHA-S)* (St. Louis, 2005, 2011b; St. Louis, Lubker, Yaruss, Adkins, & Pill, 2008). Aspects of its psychometric and practical qualities have been reported in several recent publications: test-retest reliability (St. Louis, 2012; St. Louis, Lubker, Yaruss, & Aliveto, 2009), construct and concurrent validity (St. Louis, 2012; St. Louis, Reichel, et al., 2009), internal consistency (Al-Khaledi, et al., 2009; St. Louis, 2012), sensitivity to differences in convenience versus probability sampling (Özdemir, St. Louis, & Topbaş, 2011), translatability to another language (St. Louis & Roberts, 2010), and sensitivity to experimentally-induced changes in attitudes (Flynn & St. Louis, 2011).

As a result of technological advances in recent years, surveys are increasingly administered online. Comparisons of paper-and-pencil with online results vary with the content of the survey, but typically investigators have found small yet relatively insignificant differences between the two types of administration strategies (e.g., Cole, Bedeian, & Feild,

2006; Miller et al., 2002; Raat, Mangunkusumo, Landgraf, Kloek, & Brug, 2006; van de Looij-Jansen & de Wilde, 2008). Coupling the current capabilities of online surveying techniques with the burgeoning number of studies of public attitudes in diverse settings around the world, the need exists to determine the extent to which *POSHA-S* results from paper-and-pencil surveys are comparable to those from an online survey strategy. Similar results from the two procedures would add further and needed confidence that the *POSHA-S* can be administered in online formats.

## Method

This investigation was approved by the West Virginia University Institutional Research Board (IRB). It was carried out in accordance with accepted procedures for protecting human subjects.

### *POSHA-S*

The *POSHA-S* has three sections, a demographic section, a general section that compares stuttering to four other “anchor” attributes (intelligent, left handed, mentally ill, and obese), and a detailed section on stuttering. Descriptions of the *POSHA-S* have been presented previously in several publications (e.g., St. Louis, 2005, 2011a, 2011b, 2012; St. Louis et al., 2008; St. Louis, Lubker, et al., 2009; St. Louis, Reichel, et al., 2009). Rating scales in the demographic and general sections require a 1-5 rating. Items in the detailed stuttering section require a “yes,” “no,” or “not sure” choice; these choices are converted to a 1-3 scale as follows: “no” = 1, “not sure” = 2, and “yes” = 3. Furthermore, all rating scales are converted to a scale from -100 to +100 where 0 = neutral. The signs (+ or -) of the converted scores for some detailed stuttering items, e.g., “People who stutter are nervous and excitable” are reversed so that, uniformly, lower scores reflect less accurate, sensitive, or knowledgeable attitudes and higher scores reflect more accurate, sensitive, or knowledgeable attitudes.

The *POSHA-S* is scored by averaging clusters of items that reflect various components. For example, the “Traits” component is the mean of three items, i.e., people who stutter: (a) are to blame for their stuttering, (b) are nervous and excitable, and (c) are shy and fearful. As another example, the “Social Distance/Sympathy” component reflects means for: (a) feeling comfortable, pity, or impatience while talking with a person who stutters; (b) being worried or concerned if one’s doctor, neighbor, sibling, or oneself stuttered; and (c) evaluating one’s overall impression of stuttering and wanting to stutter. Components are combined into three subscores, two for stuttering (i.e., Beliefs about—and Self Reactions to—people who stutter) and one for Obesity and Mental

Illness. The mean of the two stuttering subscores is the Overall Stuttering Score.

## Respondents

The data for the present study were part of a broader study exploring test-retest reliability of the finalized POSHA-S and comparing the final version of the instrument using the final 1-5 or 1-3 scale with an earlier version using a 1-9 scale (St. Louis, 2012; St. Louis, Lubker, et al., 2009). In the larger investigation, respondents were asked to fill out two questionnaires, two weeks apart. The questionnaires analyzed for the present study consisted only of the first of the two POSHA-Ss filled out and, in a few cases, the only one filled out when respondents failed to complete two.

A paper-and-pencil sample (P&P) and an online sample (OL) were compared. A research assistant distributed P&P POSHA-S questionnaires to a convenience sample of 120 adults in eastern West Virginia and western Maryland. Most of these were friends and family members of the research assistant or friends and acquaintances of these persons. Sixty-one respondents returned the POSHA-Ss for a return rate of 50.8%. For the convenience OL sample, a different research assistant sent by email a link to an online version of the POSHA-S to 547 potential respondents via a West Virginia University custom online survey program known as SimpleForms. Potential email addresses were collected from the second research assistant, her friends, classmates, and family as well as from the author in order to attempt to acquire a sample of relatively “known” individuals. Some, but not all of these, were sent messages asking if they wished to participate beforehand. The OL return rate was 23.6%, i.e., 129 individuals filled out the questionnaire immediately or after one email reminder. The lower response rate for the OL group likely reflected non-participation due to: (a) not wanting to be bothered by filling out an online survey when the request was by email versus a face-to-face request, (b) difficulty experienced by some potential respondents getting to the survey as a result of slow, dial-up internet connections, (c) uncertainty as to whether or not the email request was “spam”, and (d) lack of experience in filling out online questionnaires. Mean response time for the P&P sample to fill out the POSHA-S was 10.3 minutes compared to 9.2 minutes for the OL sample.

The respondents in each of two groups were equalized as follows. One of 61 P&P respondents was removed at random, and 69 of the 129 OL respondents were removed by deleting every other respondent and nine additional respondents at random. This yielded 60 respondents in each of the two samples. Evidence

that the original and reduced OL samples were similar can be inferred from summary descriptive statistics. The original OL sample ( $n = 129$ ) had a mean age of 50.4 years, mean education of 17.4 years, and a male:female sex ratio of .33:1 compared to respective values of 50.7 years, 17.3 years, and .30:1 for the reduced sample of 60 respondents.

## Results

### Respondent Similarities and Differences

Table 1 provides a summary of selected demographic characteristics of the two samples. Averaged, the OL sample was about eight years older than the P&P sample with slightly fewer females. Moreover, OL respondents were better educated and more likely to be retired. Three-fourths of both groups were or had been married, and two-thirds were parents. Nearly all were White/Caucasian Christians who spoke English as their native language, more so in the P&P sample. OL group members were nearly three times as likely to identify themselves as knowing more than one language. In terms of self-identification, the two samples were similar except that P&P respondents were less likely to regard themselves as intelligent, and the OL sample contained a notably high percentage (10%) who regarded themselves as mentally ill. The P&P respondents had lower self-ratings for health, abilities, and income relative to friends or family and everyone in their country. On average, the OL group required one minute less to fill out the POSHA-S than the P&P group.

Circa May 2011, the POSHA-S database archive (St. Louis, 2011b; 2012) consisted of 3751 respondents representing 12 countries and eight languages. The database contained means from 91 different samples. Table 1 also compares the 50<sup>th</sup> percentile, or median, of these sample means with the P&P and OL samples, both of which were older, less educated, more heavily populated by female respondents, more likely to be working, and more likely to be married. They were similar to the database median percentage for self-identification as stuttering but higher for identifying themselves as obese, no doubt reflecting higher levels of obesity in the USA than in some other sample areas represented in the database, such as Africa and the Middle East.

### POSHA-S Similarities and Differences

Table 2 and Figure 1 display means for components, subscores, and Overall Stuttering Scores for the P&P and OL samples in comparison with values from the POSHA-S database. POSHA-S scores were generally quite similar, but there were three exceptions. Results of t-tests using the Bonferroni correction ( $p \leq .00417$  [.05/12])

revealed only three of 60 comparisons in the general and detailed stuttering sections that were significantly different, also shown in Table 2. These related to the Belief causal component item that stuttering is caused by an act of God, with lower (or more positive) ratings by the OL sample. Ratings on the Self Reaction item relating to being accommodating or helpful, i.e., telling a person who stutters to “slow down” or “relax,” were also lower (more positive) for the OL group. By contrast, the Self Reaction social distance/sympathy component item for being concerned or worried if one stuttered himself or herself was higher (more negative) for the OL sample. Overall Stuttering Scores were virtually identical, 27 for P&P and 26 for OL. The Belief Subscore was slightly more positive for the OL group (but not significantly so), i.e., 55 versus 47, while the Self Reactions Subscore was slightly higher for the P&P group, i.e., 7 versus -3. Finally, whereas obesity and mental illness items tend to be generally low, the P&P sample had more positive scores for all three components and the Mental Illness/Obesity Subscore than the OL sample (-22 versus -30).

Table 2 and Figure 1 also provide a comparison of the P&P and OL results with previously obtained results from more than 91 different sample or sample comparisons in the database. They reveal that almost all of the mean values for components, subscores, and the Overall Stuttering Score were higher and more positive for both the P&P and OL samples compared to the medians of 91 sample mean comparisons from the POSHA-S database.

### Discussion

In spite of a few notable differences between the P&P and OL samples, e.g., the latter being older, better educated, having higher relative incomes, and having a surprisingly high number of self-identifications of mental illness, stuttering attitudes were quite similar. Some of the small differences reflected better attitudes for the P&P group, e.g., most Self Reaction components and the obesity and mental illness scores; others favored the OL group, especially Belief scores. Yet, only three item differences were statistically significant between the two groups, or only 5% of all 60 comparisons between items, components, subscores, and Overall Stuttering Scores. These results indicate that online administration of the POSHA-S can be carried out with reasonable confidence that the results are unlikely to be affected in any systematic way by the online survey strategy.

These results on procedural robustness are bolstered by considerable previous research indicating that the POSHA-S and its experimental predecessors were robust on other dimensions. Paper-and-pencil administrations

have yielded similar results: (a) from different rating scales (St. Louis et al, 2008; St. Louis, Lubker, et al., 2009), (b) with the addition of a written definition of stuttering (St. Louis, et al., 2011), and (c) when translated to other languages (St. Louis, Andrade, Georgieva, & Troudt, 2005; St. Louis & Roberts, 2010). By contrast, samples from different cultures have sometimes resulted in marked differences (Al-Khaledi et al., 2009) as have probability samples compared to convenience samples (Özdemir, St. Louis, & Topbaş, 2011). Investigations currently in progress using the POSHA-S database to explore the effects on stuttering attitudes of socio-economic variables (i.e., education, occupation, and income), as well as the variables of familiarity with stuttering, mental illness and obesity, suggest that all of these are weak to moderate predictors (St. Louis & Rogers, 2011a, 2011b). For example, higher levels of education appear to predict better attitudes more strongly than higher relative income. As the database grows, more and more variables can be controlled and used to determine various complex combinations of influences on public attitudes toward stuttering.

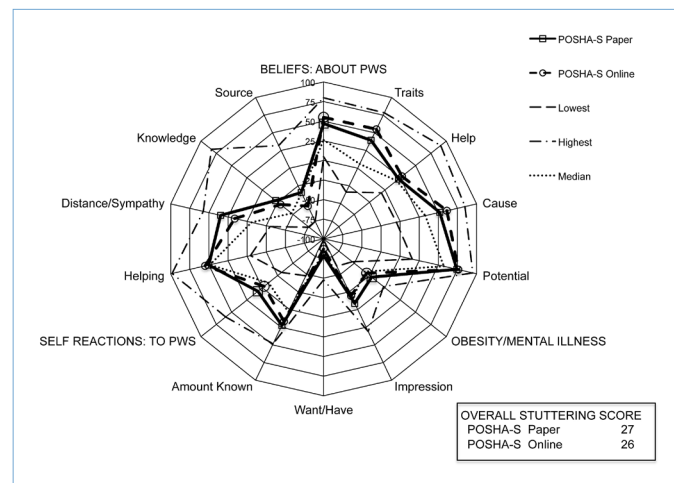


Figure 1. Summary graph for P&P and OL in comparison to lowest, highest, and median ratings for means from 91 samples available from the POSHA-S database circa May 2011.

Table 1. Demographic comparisons for P&P and OL samples compared to median values from the POSHA-S database (St. Louis, 2011b, 2012).

	P&P	OL	Database Median <sup>a</sup>
Number	60	60	42
Age: Mean (yr)	42.8 yr	50.9 yr	35.9 yr
Total schooling: Mean (yr)	15.8 yr	17.3 yr	15.0 yr
Sex: Males / females (% total)	19% / 81%	23% / 77%	35% / 65%
Student (% total)	12%	7%	11%
Working (% total)	95%	70%	61%
Unemployed or not working (% total)	2%	5%	12%
Retired (% total)	3%	18%	4%
Married (% of total)	73%	77%	49%
Parent (% of total)	65%	67%	65%
Race: White/Caucasian (% responding)	98%	83%	— <sup>b</sup>
Religion: Christian (% responding)	89%	73%	— <sup>b</sup>
English as native language (% responding)	100%	95%	— <sup>b</sup>
Know >1 language (% responding)	13%	37%	27%
Self-identification (% total)			
Stuttering	2%	0%	<1%
Mentally ill	2%	10%	1%
Obese	18%	18%	10%
Left handed	10%	10%	7%
Intelligent	35%	58%	43%
Self-rating of health and abilities; Composite income: Mean: (-100 to +100)			
Physical health	44	53	49
Mental health	58	66	63
Ability to learn	58	69	65
Speaking ability	64	71	63
Composite income	-15	24	-2
Completion time: Mean (min)	10.3 min	9.2 min	11.1 min

<sup>a</sup> Based on 3751 respondents from 12 countries and eight languages in 91 sample comparisons.

<sup>b</sup> Median values for individual samples cannot be calculated since many samples were from highly diverse areas of the world and most within those samples were quite homogeneous.

Table 2. Mean ratings for POSHA-S components, subscores, and Overall Stuttering Scores for the P&P and OL samples compared to median values from the POSHA-S database (St. Louis, 2011b; 2012).

	P&P	OL	Database Median <sup>a</sup>
OVERALL STUTTERING SCORE	27	26	7
<i>Beliefs About Persons Who Stutter</i>	47	55	26
Traits / Personality	39	55	6
Stuttering Should Be Helped by...	22	28	19
Stuttering is Caused by...	52	61	33
Stuttering is caused by an act of God <sup>b c</sup>	65	93	56
Potential	74	76	57
<i>Self Reactions to People Who Stutter</i>	7	-3	-10
Accommodating / Helping	50	55	49
If I were talking with a person who stutters, I would tell the person to "Slow down" or "Relax." <sup>b c</sup>	15	69	27
Social Distance / Sympathy	35	16	-6
I would be concerned if I, myself, stuttered. <sup>b c</sup>	15	-53	-55
Knowledge / Experience	-22	-30	-48
Knowledge Source	-34	-54	-35
<i>Obesity / Mental Illness Subscore</i>	-22	-30	-33
Overall Impression	-9	-19	-15
Want to be	-79	-87	-83
Amount known about	23	17	4

<sup>a</sup> Based on 3751 respondents from 12 countries and eight languages in 91 sample comparisons circa May, 2011.

<sup>b</sup> Significant difference between P&P and OL ( $p \leq .00417$ ).

<sup>c</sup> The signs of mean scores are reversed so higher scores reflect more positive attitudes and vice versa.



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