I. Goals for today
   A. Rationale for studying attitudes
   B. Rationale for quantifying attitudes
      1. IPATHA vision & mission
      2. Epidemiological issues
   C. Nature of measured attitudes
   D. A sampling of epidemiological data
   E. What have we learned?
   F. What next?

II. Imagine a parallel universe
   A. Everyone is the same except people are like chameleons who take the color of their surroundings
   B. About 1% are “greener” (or “PWG” to be politically correct)
      1. “Greening” involves involuntary, intermittent failing to assume the color of their surroundings but turn green instead
         a. Typically begins in childhood
         b. Occurs only in social interaction; rarely/never when alone
         c. Triggered/worsened by stress, anxiety, etc.
      2. Often develop elaborate compensatory strategies that really don’t help in the long run
   C. Much research on cause & nature
      1. Sex-linked (3:1 M:F)
      2. Cause not known but…
         a. Genetic evidence in 50% of cases
         b. Almost all can dance & not turn green
   D. Limited research on public attitudes, but…
      1. Teased in school
      2. Discriminated in the workplace
      3. Calls for more information to the public
   E. You get the idea!
      1. Of course, stuttering is mostly physiological
         a. About 50% have genetic evidence
         b. Nonstuttered speech not quite normal
         c. Sex ratio of 3 or 4 males to 1 female
         d. Brain differences in stuttering
      2. Temperament & language differences documented

III. Then why study attitudes?
   A. Would you be comfortable around—or concerned—if your next-door neighbor…
      1. Stuttered?
      2. Was moderately hard of hearing?
      3. Was left handed?
      4. Was an alcoholic?
      5. Had HIV / AIDS?
      6. Was mentally ill?
      7. Was obese?
   B. If you (and most people) were concerned…
      1. Would your neighbor (and most others with the condition)…
         a. Feel good about himself/herself, aside from the problem?
         b. Be likely to talk about it openly?
         c. Be expected to function normally…
            1) At school?
            2) At work?
d. Experience stigma, teasing & discrimination?

C. Basic questions for YOU
1. Regarding a stuttering individual…
   a. When you interact with a person who stutters…
      1) What do you do?
      2) What do you feel?
      3) What do you think?
   b. What difference do your actions, feelings, thoughts & knowledge make?
   c. Can your beliefs & reactions be changed?
      1) If so…
         a) How?
         b) How long will it take?
         c) Are the changes short-term or permanent?
      2) And what difference does it make to an individual who stutters with whom you interact as your beliefs & reactions are changed?

D. Basic questions for SOCIETY
1. Regarding all people who stutter…
   a. When most people interact with a person who stutters…
      1) What do they do?
      2) What do they feel?
      3) What do they think?
   b. What difference do their actions, feelings, thoughts & knowledge make?
   c. Can their beliefs & reactions be changed?
      1) If so…
         a) How?
         b) How long will it take?
         c) Are those changes short-term or permanent?
      2) And what difference does it make to people who stutter with whom most people interact as their beliefs & reactions are changed?

E. I hope these questions illustrate why we need to study attitudes

IV. We will learn a lot more about…
A. Stigma surrounding stuttering
B. Teasing & bullying of children who stutter
C. Workplace & other discrimination of adults who stutter
D. What is known about changing public attitudes toward stuttering
E. But… my job is to talk about the epidemiology of stuttering

V. Rationale
A. 2½ important questions…
   1. Are there important differences in societal attitudes toward stuttering around the world?
   2. Can we change attitudes?
      a. And if we could, how would we know what strategies are optimal?
   B. These questions beg for a solid, standard measure of public attitudes
      1. Rationale for the 1st IPATHA task force that met in Morgantown in 1999
      2. Decision to use epidemiological principles to measure population—not individual—attitudes

VI. First Task Force
A. Scott Yaruss
B. Jaan Pill
C. Bobbie Lubker
D. Charlie Diggs
E. Ken St. Louis
F. and later…Glen Tellis

VII. International Project on Attitudes Toward Human Attributes (IPATHA)
A. Logo highlights objective measurement & hope
B. Vision to understand & improve public attitudes toward stuttering & other stigmatizing conditions worldwide through objective measurement
C. Mission to foster effective use of the Public Opinion Survey of Human Attributes (POSHA) in comparing public attitudes & reducing stigma related to negative public opinion
D. More than stuttering
1. Potential: measure attitudes for other attributes besides stuttering
   a. Examples
      1) Cluttering
      2) Mental illness
         a) First article published recently
      3) Obesity, etc.

VIII. Sincere thanks to all the IPATHA Partners

IX. POSHA–S
   A. Instrument to measure public opinion (attitudes) worldwide
      1. Public Opinion Survey of Human Attributes-Stuttering (POSHA-S)
   B. POSHA-S components
      1. Detailed information on stuttering
      2. Stuttering compared to positive, neutral & negative attributes (anchors)
      3. Demographic information
         a. Standard items: age, sex, religion, etc.
         b. Potential predictors
   C. POSHA-S characteristics
      1. Explicit measure using self-report
         a. Thus, it is not...
            1) Not implicit (e.g., priming/reaction times or physiological responses)
            2) Not behavioral observation
            3) No exemplars (e.g., video of person stuttering)
               a) Translation would be extremely difficult & confounding
            4) No definitions
               a) Limited data suggests it makes little difference
               b) More about that later regarding cluttering data
               c) Related information also in two later posters
         b. But it is...
            1) A written survey
               a) Simple, nonambiguous & direct
               b) Non-slang English
                  1. Enhances accurate translations
                  2. E.g., PSI item: “Putting on an act” when speaking (e.g., adopting an attitude of confidence or pretending to be angry)” would be difficult/impossible to translate
            2) Empirically tested
               a) Some items omitted, e.g., I would be concerned or worried if my... 
                  1. Younger child’s teacher stuttered & older child’s teacher stuttered
                  2. Translation difficulties: younger/older than what?
   2. Evolution of rating scales
      a. Quasi-continuous: unwieldy & error prone
      b. 1-9 scale: time-consuming & unnecessary for populations (will say more later & introduce a clinical tool using the scale in poster on Saturday)
      c. 1-3 scale for stuttering section (“no” = 1, “not sure = 2, “yes” = 3) & 1-5 scale for general section
         1) Most user-friendly & fast
         2) Results comparable to previous scales
            a) Slightly higher than 1-9 scale
   3. POSHA-S scores converted to -100 to +100
      1) Higher = better / more accurate / more informed
D. Numerous studies have shown
   1. User-friendly (fast, readable, paper or online, cheap)
      a. Order effects & errors in tallying minimal
   2. Reliable, valid & internally consistent
   3. Translatable (>20 languages so far)
   4. Very similar results from modest sample sizes (25-50) & larger samples (100-400)
   5. Amenable to convenience & probability sampling
   6. Comparable with standard scoring & graphic results

X. Progress so far
   A. Successful pilot studies with “partners” (recruits & volunteers) with highly varied samples
   B. Demonstrated value of the POSHA-S database
1. Now >8000 respondents from 188 different samples (119 1st/only samples + 69 pre-post samples)
2. Most valuable part of IPATHA

XI. Website www. stutteringattitudes.com
A. 1st unpaid site on Google, Bing, Yahoo, Netscape, Dogpile & other search engines for “stuttering attitudes” or “attitudes toward stuttering”
B. Nearly 25,000 hits per month

XII. Nature of the data
A. Progression from…
   1. Individual questionnaire
   2. One sample results
      a. Item
      b. Item combined with other similar items (component)
      c. Components combined with other similar components (subscore)
      d. Two stuttering subscores combined into Overall Stuttering Score (OSS)
3. Database samples
   a. Components & subscores (profiles)

XIII. POSHA-S summary profile

XIV. POSHA-S Database
A. Model: Use/translate POSHA-S for free in exchange for sending me raw data to build a database
B. Database can be used in many ways
   1. What it is not about
      a. Individual respondents
      b. Not useful in epidemiological research
      c. Clinical implications must come from population inferences
C. What did the 8-sample study show?
   1. SLP students held better attitudes than non-SLP students in USA & Poland
      a. Hypothesized “halo effect”
   2. Graduate students held better attitudes than undergraduates in the USA
      a. Stronger for SLP students than non-SLP students
   3. Native American student attitudes similar to other American non-SLP attitudes
   4. Polish student attitudes worse overall than American student attitudes
D. The big picture: the POSHA–S database
   1. Multiple profiles of POSHA-S graphs
      a. Patterns & locations in the radial graphs
      b. Illustrates inherent variability
      c. Can show central tendency
         1) Best addressed if database is very large
            a) Each study is quite different
   2. Profiles for
      a. The public
      b. College students
      c. Teachers
      d. SLPs & SLP students
      e. People who stutter
   3. Group sample means in the database
      a. Differences in demographics, geography, spoken languages, etc. that predict better vs worse public attitudes
   4. Potential predictors of stuttering attitudes
      a. Experience with stuttering
         1) People who stutter
      b. Experience with obesity or mental illness
      c. Socio-economic status
      d. Written definition of stuttering & cluttering
      e. Geographic region
      f. Language
   5. Pre vs post comparisons
      a. Test-retest reliability when no treatment occurs between repeated administrations
b. Changes in post administrations compared to pre administrations after various treatments

E. What should be the level of analysis
   1. OSS does not tell the whole story
   2. How much should we go back to items, components & subscores?
      a. Not sure
         1) Pro: consider all the details
         2) Con: end up where we started with no study comparable to others
   3. Studies in Turkey as an example: school-based probability sampling vs convenience sampling illustrating need for both macro & micro analysis
      a. Convenience sample in Eskişehir (Özdemir, St. Louis & Topbaş, 2011a)
      b. Two probability samples in Eskişehir (St. Louis, Özdemir & Topbaş, 2011b)
         1) Population area with selected randomly from census data
            a) Population area with selected randomly from census data
            b) School selected randomly within population area
            c) 6th grade class(es) selected
            d) 4 POSHA-Ss distributed: 1 for child, 1 for parent*, 1 for grandparent or aunt/uncle*, 1 for neighbor
            e) *Sex of parent or grandparent by child’s odd or even birthday
      c. Similar school-based strategy used with parents & teachers in Kuwait (Al-Khaladi, Lincoln, McCabe, Packman, & Alshatti, 2009; Abdalla & St. Louis, 2012, in press)
      d. Turkey: Convenience vs probability sampling
         1) OSS values similar but components & subscores quite dissimilar

F. Profiles
   1. No doubt could be captured with sophisticated statistics
      a. Maybe it should
   2. My strategy (stemming from the “KISS” principle: “Keep it simple, stupid.”)
      a. Use independent or paired t tests to compare items, components, subscores & OSS
         1) t tests highly robust, doable by almost anyone, handle missing cell data, work with small samples
         2) Adjust p values with Bonferroni correction for multiple pair-wise comparisons
         3) I strive not to make Type I errors (i.e., be conservative) but strike a balance between not making too many either Type I or Type II errors
            a) i.e., reporting significant differences when one does not exist & not reporting differences when they do exist
      b. Determine Cohen’s d effect sizes for significant differences
         1) Consider only those about ≥.4 to signify important differences
         2) p ≤ .00417 (p ≤ .05/12) works very well for this
      c. Calculate percent of significant differences of the 60 comparisons
         1) Large differences: >30%
         2) Moderate differences: 10-30%
            a) Turkey convenience vs probability: 24%
         3) Small differences: 5-10%
         4) No differences: 0-5%
            a) Turkey probability—children vs parents vs grandparents vs neighbors: 0-2%
   3. Need to explore better ways to analyze profiles
      a. Likely will provide much valuable information, perhaps being a powerful predictor of attitude changeability

XV. What have we learned?
   A. Similarities outweigh differences in samples around the world
   B. “The public” covers a very broad array of populations
      1. Geographic differences are probably present
         a. Higher scores so far observed in North American & northern Europe than in southern Europe, the Middle East, southern or eastern Asia & Africa
         b. Many more studies of mainstream populations are necessary to be sure
      2. Language differences probably slight
         a. Differences follow geography
            1) E.g. Attitudes in Canada more positive than attitudes in Cameroon regardless of whether POSHA-S given in English or French (whichever was the stronger language)
      C. Personal experience, exposure & focused information (on stuttering &/or speech-language pathology)
associated with better than average public attitudes
1. Those who stutter have better than average attitudes
   a. Even those who have not had therapy
   b. Self-help leaders: best attitudes seen so far
2. SLP professionals: best professional attitudes so far
   a. "Halo effect" for people even planning to be SLPs or otherwise working with stuttering
3. Media showing stuttering in a good light (e.g., The King's Speech) may help
4. Treatments aimed at improving attitudes generally—but not always—help
5. Parents, family members & close friends of PWS have better attitudes than those without such associations
6. Even experience with obesity or mental illness has a slight beneficial effect on stuttering attitudes
   a. Not sure if the reverse might be true

XVI. Other demographic variables
A. Age: jury is out!
   1. High school students' attitudes were worse than college students' attitudes
      a. Confounding of age & education
   2. 6th graders in Turkey have virtually the same attitudes as their parents, grandparents & neighbors
B. Sex: virtually no effect
   1. More on this in a poster
C. Severity: more on this in a poster
D. Religion: no obvious effect
   1. Typically confounded with sample location
      a. E.g., Christians in North America; Muslims in Middle East
   2. Catholics, Orthodox & Muslims from different regions of Bosnia-Herzegovina had similar attitudes
E. Socio-economic variables have some measured association with public attitudes
   1. Education: probably the most promising
      a. Consistent quartile changes in database
   2. Income & occupational status: possible salutatory effect
      a. Teachers: data from several studies suggest that teachers or education students not much different than the public
      b. Physicians had better attitudes than teachers in Sri Lanka
F. Not good predictors so far (but not yet thoroughly studied)
   1. Parental & marital status
   2. Knowing more than one language
   3. Health & ability to learn
   4. Life priorities
      a. Last items finalized in POSHA-S
   5. One surprise: Broad-based sample (n = 268) in Poland
      a. Highest vs lowest sum of 3 subscores (Beliefs, Self Reactions, Obesity/Mental Illness) only predicted by impression, wanting to be & amount known about left handedness
G. Unknown effects
   1. Race
      a. Not yet studied carefully
      b. Interpreted differently by respondents in samples
      c. Often omitted (sometimes by investigators)
   2. Occupation (other than speech-language pathology & teaching)
      a. Occupational status (Total Socioeconomic Index [Hauser & Warren, 1997]) very weak predictor
   3. Time to fill out POSHA-S (1st time)
      a. Samples: 4.8 min to 4.7 hr (median = 10.8 min)
      b. Respondents: 1.0 min to 72.0 hr (median = 12.0 min)

XVII. Needed epidemiological research
A. Many more comparable, broad-based samples among different populations locally, regionally, nationally & internationally
   1. Suggestions
      a. Probability samples whenever possible
      b. At least use the POSHA-S
      c. Close alliances with & participation by self-help organizations
   2. Value
a. Obtain data that, when combined across studies, can identify the complex of variables that influence any given population’s attitudes toward stuttering

3. Obstacles
   a. Getting the results out quickly
      1) Reviewers/editors of journals may be reluctant to publish more studies
         a) Some believe them to be irrelevant
      2) Consider website publishing by a reputable group (e.g., a newly formed “Stuttering Attitudes Research Group”)
   b. Someone needs to be the keeper of the database

B. Identify predictors of positive & stigmatizing attitudes
   1. Suggestions
      a. Develop appropriate but user-friendly ways to analyze database variables
         1) OK but average beginning researcher not comfortable with cluster analysis, step-wise regression, ANACOVA, etc.
      b. Develop ways to use POSHA-S profiles as predictors
      c. Pilot & develop new potential demographic predictors
   2. Value
      a. Identify respondent groups who can be studied further with in-depth quantitative & qualitative methods
      b. Permit identification of sub-samples to be targeted in efforts to change attitudes

3. Obstacles
   a. “Attitudes” will never be easily captured by any algorithm
      1) Difficult & complex

C. Develop new & better ways of measuring attitudes
   1. Suggestions
      a. Compare POSHA-S results to other measures
         1) Implicit attitude measures
         2) Physiological measures
         3) Qualitative analyses
      b. Develop ways to validate self-reported attitudes with actual behavior
   2. Value
      a. Gain fuller understanding how attitudes are acquired, maintained & changed

D. Systematic studies designed to change public attitudes
   1. Suggestions
      a. Employ both new & documented strategies
      b. Use control groups
      c. Sample in non-overlapping regions
      d. Follow-up to estimate permanence of changes
   2. Value
      a. Obvious

3. Obstacles
   a. Difficult, expensive & time-consuming

E. Develop clinical tools & strategies that utilize information from epidemiological studies
   1. Suggestions
      a. Measure the attitude environment in which individual stuttering children & adults live
         1) Poster on Saturday
      b. Develop strategies to alter individual environments
      c. Determine effects of individual environments on clinical outcomes
   2. Value
      a. Will make stuttering treatment potentially more effective

3. Obstacles
   a. Getting cooperation of stuttering person’s family & friends to develop measures
   b. Developing tools that are appropriate for young children when stuttering develops
   c. Getting clinicians, families & friends to realize that their own attitudes may be part of the problem
   d. Required paradigm shift from stuttering treatment involving change on the part of the client to involving change on the part of everyone in the client’s environment

XVIII. A concluding challenge
   A. Develop & foster a model to determine progress toward an “ideal environment” for those who stutter
   1. Dimensions as goals
2. Possible ideal “positive” dimensions
   a. **Enlightened**: having current & accurate knowledge about stuttering
   b. **Understanding**: able to understand & appreciate what the person who stutters **experiences**
   c. **Accommodating**: willing & able to make allowances—when necessary—for people who stutter
   d. **Assisting**: willing & able to help, offer advice, or support a person who stutters
   e. **Sympathetic**: feeling genuine concern for people who stutter
   f. **Accepting**: not being bothered by stuttering even when confronting it personally

XIX. So did we do it?
   A. Is the POSHA–S “a better mousetrap?”
      1. I’d like to think so, but…
      2. What do you think?

**References for Published Studies Utilizing the POSHA–S**


St. Louis, K. O. (2012). Research and development for a public attitude instrument for stuttering. *Journal of...*


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