



## Straighten Up America



### Key Words

posture, spinal health, Straighten Up America program, exercise, healthy lifestyles

### Developing a Spinal Health Promotion Initiative: Use of an Expert Seed Panel and Electronic Delphi Consensus Process

#### Introduction:

#### Background

Forward head and rounded protracted shoulder postures are common clinical observations in patients presenting with neck and upper extremity complaints.<sup>(1, 5, 10, 13, 17)</sup> Slouched posture and related musculoskeletal disorders are increasing rapidly in technologically advanced countries with rising levels of computer usage.<sup>(13)</sup> Studies indicate that this trend has also been identified in adolescents.<sup>(6)</sup> Although a direct cause and effect relationship between posture and back pain is difficult to establish, epidemiological and biomechanical evidence is mounting that forward head posture and rounded protracted shoulder posture may serve as causative factors in work-related neck and upper limb disorders (WRNULDs).<sup>(3-10, 12-14, 16)</sup> Further complicating this problematic progression, individuals in technologically advanced countries are also becoming increasingly sedentary in terms of lifestyle, contributing to skyrocketing levels of childhood and adult obesity.<sup>(15)</sup> Studies have linked obesity and inactivity with heightened rates of back pain and disability.<sup>(2, 18)</sup>

#### Context

Despite the rising prevalence of forward head and protracted shoulder postures with accompanying symptomatology, there was a conspicuous absence of a postural improvement and spinal exercise program that was widely practiced by the public. In response to this problematic scenario, a series of

discussions with experts in the field of health promotion and spinal rehabilitation was engaged to determine interest levels in development of a spinal exercise module. The consensus of experts was that development of a short spinal exercise module for health promotion could prove very valuable for the public. From the outset it was apparent that this type of health initiative would require an extensive collaborative effort of individuals and groups both within and outside of the chiropractic profession.

#### Objectives:

In response to the rising prevalence of WRNULDs (*work-related neck and upper limb disorders*) and other posture-related spinal disorders, the objective of this project was to develop a short set of simple, engaging, postural improvement and spinal health exercises. In addition to spinal exercise module creation, obtaining buy-in and acceptance from the profession's leaders, practitioners and the public was also an extended long-term goal.

#### Methods:

##### Preliminary Discussions

Because there is considerable diversity and even disparateness of opinion about the relative importance and efficacy of various types of spinal exercise protocols, it seemed reasonable that consensus based processes should be utilized for module development. Additionally, because spinal health problems can be affected by lifestyle influences related to general health,<sup>(2, 9, 18)</sup> it was agreed in preliminary discussions, that lifestyle improvement recommendations should also be a part of the spinal health program.

In early brainstorming sessions with potential participants, it was agreed that a seed panel and Delphi panel consensus process would be the method of choice for both module and lifestyle recommendation development. The expert seed

panel and Delphi review panel process is designed to obtain buy-in and a sense of empowerment on the part of a wide range of participants.<sup>(11)</sup> It was postulated that utilization of the Delphi process would create the opportunity to generate broad support and a sense of ownership from diverse and divergent elements within the profession, helping to facilitate program implementation. To this end an expert with many years of experience in seed and Delphi panel processes was invited to provide advice for program development. Fortunately, the Delphi expert also held two degrees in physical education, a degree in chiropractic and had very high levels of interest in health promotion and preventive practices.

### **Seed Panel Formation and Composition**

Following the advice of the Delphi process expert, the author invited a small group of healthcare practitioners with diverse areas of expertise including health promotion, spinal rehabilitation and athletic performance enhancement to join the seed panel. Each of the five seed panelists had excellent reputations based on the quality of their work. After assembling the seed panel, a three-month timeline was set for pilot module and lifestyle recommendation development.

### **Spinal Exercise Module Development**

Once the seed panel was assembled, the process of facilitating the module development began immediately. For ease of program development, since none of the participants lived in proximity with one another, it was agreed that email would be the principal means of communication. Zoomerang electronic email surveys were chosen to facilitate exercise module and lifestyle recommendation development. Using Zoomerang, the panel facilitator then initiated a series of electronic prioritization matrix surveys to select exercise domains and shape specific exercises to be incorporated within a pilot spinal exercise module. This prioritization process was especially important, because the potential domain of exercises beneficial to spinal health is vast and varied and by preliminary agreement the module would be short and focused in order to enhance opportunities for habituation.

### **Structure of Prioritization Surveys**

The initial prioritization matrix surveys focused on the principal purposes of the exercises. Survey items queried regarding the module's primary

purposes were assigned values using a modified Likert 5-point scale. The value **5** represented *highest priority*, **4** *high priority*, **3** *priority*, **2** *low priority* and **1** *unimportant*. Initially there was strong agreement that postural improvement and core stabilization (23 out of 25 points each) would be the principal foci of the exercise module. Additionally consideration would be given to balance and equilibrium (21 points) and flexibility (19 points). There was also strong agreement that simplicity, ease of performance and safety (23 points each) and functionality (22 points) must given heavy consideration in choosing exercises and shaping the module. Participants also rated exercise enjoyment as an important factor (21 points).

Next a follow-up prioritization matrix electronic survey established standing (25 points) as the unanimous choice for the best position for performance of the exercises. A third survey was then used to select a sequence for the exercises by spinal region. Following this, each seed panel member was invited to offer a small number of specific exercises by spinal region (cervico-thoracic, thoraco-lumbar, lumbo-pelvic) for incorporation in the module. These exercises were principally designed to facilitate postural improvement and enhance core stabilization.

### **Survey Analysis**

Potential exercises were then reviewed and analyzed for congruity and agreement by screening for the frequency of exercises (or similar exercises) which multiple panelists had recommended. After analysis to establish a group of exercises with high congruity and agreement, seed panel members were then invited to select specific segments of the module, for which they would assume primary responsibility. Once assignments were agreed upon, the specific spinal exercises segments were shaped by individual panelists. Subsequently, the module exercises were given colorful creative names to capture the public's imagination. After final review of the pilot module segments by the entire panel, a name for the complete module was selected by vote after each panelist had offered two possible names.

### **Life Style Recommendation Development**

Once pilot module shaping and naming were complete, the seed panel began crafting a group of pilot lifestyle recommendations. Initially, the panel

facilitator queried panelists regarding the chief areas of lifestyle concern to be addressed. Key lifestyle recommendation areas included: self-improvement and goal setting, active living, tobacco cessation, healthy nutritional choices, advantageous ergonomic habits, stress management and relaxation, and systematic spinal check-ups and care.

### **Formation and Composition of the Delphi Panel**

Simultaneously to the creation of the pilot module and lifestyle recommendations, a 90-member, Delphi panel was assembled from a broad spectrum of leaders in healthcare. Delphi panelists included many of the presidents and clinic directors of the ACC colleges, researchers, and international, national and state chiropractic organization leaders. World Health Organization representatives, exercise physiologists, fitness experts and fitness champions also participated on the Delphi panel, which helped to review and refine the pilot exercise module and accompanying lifestyle recommendations through an electronic Delphi review process. Representatives from the WHO included the Director of the Child and Adolescent Health and Development Cluster and a technical officer from the Noncommunicable Disease/Musculoskeletal Disorder Cluster.

### **The Electronic Delphi Consensus Process**

Delphi panel members were emailed links to pdf and PowerPoint slides illustrating the individual exercises, comprising the pilot spinal exercise module and the accompanying life style recommendations. Utilizing Zoomerang electronic surveys, Delphi panelists voted on adoption of the individual slides of the module exercises and lifestyle recommendations. Slide adoption agreement level was set at 75% of voting panelists. Panel members voted yes or no for slide incorporation within the program. Provision was also made for comments and critique for slide refinement. Large numbers of Delphi panelists utilized this feature.

On the initial round of electronic voting, every slide of the exercises and lifestyle recommendations reached the necessary 75% of votes cast agreement level for inclusion in the program. In addition to formally adopting the exercises, the Delphi panelists provided very

valuable and extensive feedback and refinements on the formatting and presentation of the program. It is hoped that this sense of ownership that the Delphi process is designed to develop will facilitate implementation of the spinal health module on a wide basis. All Delphi panelists had been emailed direct links, which allowed them to individually review the results of the electronic Delphi consensus process. Delphi panelists' final comments and feedback were primarily highly positive with multiple descriptors like "great" and "excellent," contributing to the sense that buy-in and ownership had been achieved.

Once the initial round of the electronic Delphi consensus process was complete, the seed panel worked to refine the spinal exercise module and accompanying lifestyle recommendations, incorporating the input from the Delphi panel. The seed panel facilitator then emailed the polished version of the program to Delphi participants for further comment and final refinement.

### **Exercise Module User Feedback**

After the spinal exercise module was developed, Life University IRB approval was obtained to study module efficacy. The module was taught to chiropractic college students in a health promotion class and to senior citizens in a flexibility class. After five weeks of module usage, 36 participants completed modified Likert user feedback surveys, which included questions regarding perceived levels of postural improvement, core muscle strengthening, levels of spinal comfort, and postural awareness.

### **Results:**

- The seed and Delphi panels created and refined a simple set of postural improvement and spinal health exercises that has been broadly embraced by leaders and practitioners of the chiropractic profession in America and abroad.
- The exercise module has been presented widely in venues across the chiropractic profession. It is being taught to students in several chiropractic colleges and taught to patients in several chiropractic college clinics and in large numbers of clinics around the world.
- The Congress of State Chiropractic Associations has created a national agenda to implement *Straighten Up America* as a postural improvement and spinal health initiative.

- The World Federation of Chiropractic is promoting the program globally.
- The Secretary of the United States Department of Health and Human Services has commended the developers of *Straighten Up America* for their “leadership in the field of spinal health.”
- *Straighten Up America* has been presented at the National Institutes of Health and the House of Representatives Wellness Center.
- The Posture Pod stretches from *Straighten Up* have been incorporated within the United States Bone and Joint Decade’s “Protect Your Bones and Joints” educational program for high school youth.
- The program is being presented to the Congress of the United States of America for appropriations funding as a national health initiative.
- Analysis of user feedback surveys from pilot class participants indicates that practicing the module regularly is useful for facilitating perceived levels of postural improvement and enhancing levels of spinal comfort.
  - ⇒ 83% of class participants reported they had improved their posture.
  - ⇒ 78% reported they had strengthened their core muscles.
  - ⇒ 80% reported that they sit and stand more uprightly and that their backs were more comfortable after five weeks performing the exercise module.

## Discussion and Limitations:

The project objectives have been met with a significantly greater degree of success than originally anticipated or envisioned. That being said, the module development process could have been improved in several ways. It would have been optimal to have chosen a longer timeline and period of time to create and refine the spinal exercise module and lifestyle recommendations. With a longer timeline, a nominal panel could have also been assembled to review and critique the seed panel’s initial product, before Delphi panel refinement. Nominal panel involvement would have made the entire process more rigorous.

It also would have been optimal to have had a higher percentage of participation by Delphi panelists in the round of electronic voting. The voting percentage of approximately 60% of the

Delphi panelists was lower than the consulting Delphi expert would have liked. The lower percentage may be partially attributable to difficult logistics in the electronic voting process and the fact that the voting took place over a relatively short time span of ten days. All communication was electronic and a small number of Delphi panelists reported difficulties in receiving electronic materials and finalizing their votes. Other participants may have been out of town or unavailable at the time of the voting.

## Conclusion:

The *Straighten Up America* spinal exercise module and lifestyle recommendations are serving as simple enjoyable patient-active tools to facilitate improvement of posture and to promote habituation of positive spinal health behaviors. Because of the collaborative processes utilized in the development of the initiative, there appears to be a high level of buy-in and support from a profession wide constituency. The electronic seed panel and Delphi consensus process has apparently served its purpose admirably. Currently, the vast majority of the state, national and international chiropractic organizations and the profession’s academic institutions have demonstrated enthusiastic support for the program.

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