Treatment Intervention Advisory Committee Review and Determination

Date: January 29, 2016

To: DHS/DLTC

From: Wisconsin Department of Health Services Autism and other Developmental Disabilities
Treatment Intervention Advisory Committee: Lana Collet-Klingenberg, Ph.D. (chairperson)

RE: Determination of Hippotherapy as a proven and effective treatment for individuals with autism spectrum disorder and/or other developmental disabilities

☐ This is an initial review
☒ This is a re-review. The initial review was in May 2012

Section One: Overview and Determination

Please find below a statement of our determination as to whether or not the committee views hippotherapy a proven and effective treatment for children with autism spectrum disorder and/or other developmental disabilities. In subsequent sections you will find documentation of our review process including a description of the proposed treatment, a synopsis of review findings, the treatment review evidence checklist, and a listing of the literature considered. In reviewing treatments presented to us by DHS/DLTC, we implement a review process that carefully and fully considers all available information regarding a proposed treatment. Our determination is limited to a statement regarding how established a practice is in regard to quality research. We do not make funding decisions.

Description of proposed treatment
Practitioners of hippotherapy define it as follows: “Hippotherapy is a physical, occupational or speech and language therapy treatment strategy that utilizes equine movement. Hippotherapy literally means ‘treatment with help of the horse’ from the Greek word, ‘hippos’ meaning horse. Specially trained physical and occupational therapists use this treatment for clients with movement dysfunction. In hippotherapy, the movement of the horse influences the client. The client is positioned on the horse and actively responds to his movement. The therapist directs the movement of the horse; analyzes the client’s responses; and adjusts the treatment accordingly. This strategy is used as part of an integrated treatment program to achieve functional outcomes.” (retrieved March 21, 2014, from http://www.childrenstheraplay.org/hippotherapy).

Lanning, Baier, Ivey-Hatz, Krenek, and Tubbs (2014) provide the following context for understanding the relationship between the various equine-related therapies. “[Equine Assisted Activities and Therapies] EAAT is a collective term describing two main types of interventions: equine assisted activities (EAA) and equine assisted therapies (EAT). EAA includes therapeutic horseback riding (THR), vaulting, carriage driving and non-riding activities with the horse. Whereas, EAT describes therapies including equine assisted psychotherapy and hippotherapy (a physical, occupational or speech therapy treatment strategy that utilizes equine movement) (Professional Association of Therapeutic Horsemanship International 2014).” (Lanning, et al., 2014, p. 1898).
This review is only for interventions specifically defined as hippotherapy. Studies evaluating "therapeutic horseback riding" were not included in this review. Equine assisted psychotherapy is evaluated in its own separate review.

Synopsis of review
In the case of hippotherapy, please refer to the attached reference listing that details the reviewed research. The committee’s conclusions are that no new research studies specific to Hippotherapy that meet inclusion requirements have been published since the last review in January 2015. In prior reviews, there has been only one published study for hippotherapy found and reviewed, and this study was of low quality, as it had no control group.

In sum, it is the decision of the committee that hippotherapy remains a Level 4 treatment, with Insufficient Evidence.
Section Two: Rationale for Focus on Research Specific to Comprehensive Treatment Packages (CTP) or Models

In the professional literature, there are two classifications of interventions for individuals with Autism Spectrum Disorder (National Research Council, 2001; Odom et al., 2003; Rogers & Vismara, 2008):

(a) **Focused intervention techniques** are individual practices or strategies (such as positive reinforcement) designed to produce a specific behavioral or developmental outcome, and

(b) **Comprehensive treatment models** are “packages” or programs that consist of a set of practices or multiple techniques designed to achieve a broader learning or developmental impact.

To determine whether a treatment package is proven and effective, the Treatment Intervention Advisory Committee (TIAC) will adopt the following perspective as recommended by Odom et al. (2010):

The individual, focused intervention techniques that make up a comprehensive treatment model may be evidence-based. The research supporting the effectiveness of separate, individual components, however, does *not* constitute an evaluation of the comprehensive treatment model or “package.” The TIAC will consider and review only research that has evaluated the efficacy of implementing the comprehensive treatment *as a package*. Such packages are most often identifiable in the literature by a consistently used name or label.


Section Three: DLTC-TIAC Treatment Review Evidence Checklist

Name of Treatment: Hippotherapy

**Level 1 - Well Established or Strong Evidence (DHS 107 - Proven & Effective Treatment)**

☐ Other authoritative bodies that have conducted extensive literature reviews of related treatments (e.g., National Standards Project, National Professional Development Center) have approved of or rated the treatment package as having a strong evidence base; authorities are in agreement about the level of evidence.

☐ There exist ample high quality studies that demonstrate experimental control and favorable outcomes of treatment package.

☐ Minimum of two group studies or five single subject studies or a combination of the two.

☐ Studies were conducted across at least two independent research groups.

☐ Studies were published in peer reviewed journals.

☐ There is a published procedures manual for the treatment, or treatment implementation is clearly defined (i.e., replicable) within the studies.

☐ Participants (i.e., N) are clearly identified as individuals with autism spectrum disorders or developmental disabilities.

*Notes:* At this level, include ages of participants and disabilities identified in body of research

**Level 2 – Established or Moderate Evidence (DHS 107 - Proven & Effective Treatment)**

☐ Other authoritative bodies that have conducted extensive literature reviews of related treatments (e.g., National Standards Project, NPDC) have approved of or rated the treatment package as having at least a minimal evidence base; authorities may not be in agreement about the level of evidence.

☐ There exist at least two high quality studies that demonstrate experimental control and favorable outcomes of treatment package.

☐ Minimum of one group study or two single subject studies or a combination of the two.

☐ Studies were conducted by someone other than the creator/provider of the treatment.

☐ Studies were published in peer reviewed journals.

☐ Participants (i.e., N) are clearly identified as individuals with autism spectrum disorders or developmental disabilities.

*Notes:* At this level, include ages of participants and disabilities identified in body of research
Level 3 – Emerging Evidence (DHS 107 – Promising as a Proven & Effective Treatment)

☐ Other authoritative bodies that have conducted extensive literature reviews of related treatments (e.g., National Standards Project, NPDC) have recognized the treatment package as having an emerging evidence base; authorities may not be in agreement about the level of evidence.

☐ There exists at least one high quality study that demonstrates experimental control and favorable outcomes of treatment package.

☐ May be one group study or single subject study.

☐ Study was conducted by someone other than the creator/provider of the treatment.

☐ Study was published in peer reviewed journal.

☐ Participants (i.e., N) are clearly identified as individuals with autism spectrum disorders or developmental disabilities.

Notes: At this level, include ages of participants and disabilities identified in body of research

Level 4 – Insufficient Evidence (Experimental Treatment)

☒ Other authoritative bodies that have conducted extensive literature reviews of related treatments (e.g., National Standards Project, NPDC) have not recognized the treatment package as having an emerging evidence base; authorities are in agreement about the level of evidence.

☒ There is not at least one high quality study that demonstrates experimental control and favorable outcomes of treatment package.

☐ Study was conducted by the creator/provider of the treatment.

☐ Study was not published in a peer reviewed journal.

☐ Participants (i.e., N) are not clearly identified as individuals with autism spectrum disorders or developmental disabilities.

Notes: The committee also reviewed existing reports from authoritative bodies including the National Professional Development Center (2009, 2014) and the National Standards Project (2010). Neither of these bodies have identified Hippotherapy as an evidence based practice or an emerging/promising practice. It is notable that within the literature related to this practice, there are two common terms used: Hippotherapy (as practiced by licensed professional therapists, OT, PT, SLP), and therapeutic riding (as practiced by professional horseback riding specialists). Therapeutic riding is viewed as a separate treatment. It is further notable that with the population of individuals with cerebral palsy, Hippotherapy is considered an evidence-based practice as there exists research (e.g., Sterba, J.A., Rogers, B.T., France, A.P., & Vokes, D.A., 2002) to support its success in improvement of dependent variables such as muscle tone, strength, and coordination.
Level 5 – Untested (Experimental Treatment) &/or Potentially Harmful

☐ Other authoritative bodies that have conducted extensive literature reviews of related treatments (e.g., National Standards Project, NPDC) have not recognized the treatment package as having an emerging evidence base; authorities are in agreement about the level of evidence.

☐ There are no published studies supporting the proposed treatment package.

☐ There exists evidence that the treatment package is potentially harmful.

   ☐ Authoritative bodies have expressed concern regarding safety/outcomes.

   ☐ Professional bodies (i.e., organizations or certifying bodies) have created statements regarding safety/outcomes.

Notes: At this level, please specify if the treatment is reported to be potentially harmful, providing documentation

Date: January 29, 2016

Committee Members Completing Initial Review of Research Base: Shannon Stuart, Amy Van Hecke

Committee Decision on Level of Evidence to Suggest the Proposed Treatment is Proven and Effective: Level 4- Insufficient Evidence

References Supporting Identification of Evidence Levels:


Section Four: Literature Review

There has not been published literature since the last review that has passed screening review.

<table>
<thead>
<tr>
<th>IV Description</th>
<th>12 weekly, 45 minute hippotherapy sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV</td>
<td>Motor control, postural stability, adaptive behavior, participation in daily activities</td>
</tr>
<tr>
<td># in study</td>
<td>6</td>
</tr>
<tr>
<td>Age ranges</td>
<td>5-12 years</td>
</tr>
<tr>
<td>Diagnoses</td>
<td>ASD</td>
</tr>
</tbody>
</table>
| Study Results  | • Improvements in self-care, low-demand leisure, and social interactions  
• Decrease in postural sway |
| Reviewer Comments | Though this study showed some promising results, it was a pilot study with a small sample and no control/comparison group. The study did not meet criteria for consideration as support for an evidence based practice. |

---

### Group Design EBP Inclusion Criteria Checklist

Instructions: Read each item and check the appropriate box. If you check “NO” at any time, the article can be discarded as it will not be included as evidence for a practice.

<table>
<thead>
<tr>
<th>Item</th>
<th>YES</th>
<th>NO</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the study have experimental and control/comparative groups?</td>
<td></td>
<td>x</td>
<td>This was a pilot study with a pre/post design.</td>
</tr>
<tr>
<td>Were appropriate procedures used to increase the likelihood that relevant characteristic of participants in the sample were similar across conditions?</td>
<td></td>
<td></td>
<td>There was only one group.</td>
</tr>
<tr>
<td>Was there evidence for adequate reliability for the key outcome measures? And/or when relevant, was inter-observer reliability assessed and reported to be at an acceptable level?</td>
<td>x</td>
<td></td>
<td>Vineland Adaptive Behavior Scales-II (VABS-II) and Child Activity Card Sort (CACS) were two of the measures, and have adequate reliability. The third measure was the</td>
</tr>
<tr>
<td>Item</td>
<td>YES</td>
<td>NO</td>
<td>Rationale</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Were outcomes for capturing the intervention’s effect measured at appropriate times (at least pre- and post-test)?</td>
<td>x</td>
<td></td>
<td>Data were collected 1 week before intervention began and 1 week after</td>
</tr>
<tr>
<td>Was the intervention described and specified clearly enough that critical aspects could be understood?</td>
<td>x</td>
<td></td>
<td>The intervention followed the guidelines from the American Hippotherapy Association (2010)</td>
</tr>
<tr>
<td>Was the control/comparison condition(s) described?</td>
<td></td>
<td>x</td>
<td>There was no comparison group.</td>
</tr>
<tr>
<td>Were data analysis techniques appropriately linked to key research questions and hypotheses?</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Was attrition NOT a significant threat to internal validity?</td>
<td>x</td>
<td></td>
<td>1 of 7 original participants was not included in the final analysis (15% &lt;20%, so</td>
</tr>
<tr>
<td>Does the research report statistically significant effects of the practice for individuals with ASD for at least one outcome variable?</td>
<td>x</td>
<td></td>
<td>• Improvements in self-care, low-demand leisure, and social</td>
</tr>
<tr>
<td>Were the measures of effect attributed to the intervention? (no obvious unaccounted confounding factors)</td>
<td></td>
<td>x</td>
<td>There was not a comparison group.</td>
</tr>
</tbody>
</table>