The Prevalence of Restraint: Featuring Dr. Peter Sturmey

Tuesday, January 10th 2:30-3:30pm EDT
Agenda

Moderator: Bonnie Zampino
Ukeru Systems

Speaker: Professor Peter Sturmey, Ph.D.
City University of New York
Questions

All participants are on “Mute”

Please submit questions by typing into the chat box in the corner of your screen and selecting “Organizers Only”

You can also tweet your questions to @ukerusystems using #startswithU
Abstract

• Although many people agree that we should reduce restraint, guidance on how to do this is often lacking.

• This webinar will review recent research on reducing restraint and will focus on recent experiments evaluating how to do this, including data on restraint reduction, staff and client safety and costs.

• The webinar will present research-based practice guidelines that services can use.
Reducing Restraint and Restrictive Behavior Management Practices

Peter Sturmey
PART I.

Restrictive behavior management practices:

- Physical Restraint
  - Ties, gloves, helmets, splints, modified clothes, leather ties to beds / furniture
- Personal restraints
  - Hands down, cross chest, multiple person take downs
- Seclusion
- Locked room time out
- Chemical restraint
- Movement restriction
  - Furniture
  - Taking shoes
  - Locking doors
  - Modified handles / locks
  - Access to personal possessions
Culturally appropriate forms of restraints

- **Cultural**
  - Instructions with strong stimulus control
  - Stop / “No Parking” signs etc.
  - Barriers
- **Children’s restraint devices**
  - Strollers
  - High chairs
  - Mitts
- **Medical**
  - Ties, bed rails, chemical restraint
  - Dentistry
    - Mechanical
    - Chemical
  - Physical therapy
  - Constraint induced movement therapy for stroke
  - Preventing harm
- **Self-restraint** (Skinner, 1953)
Restrictive behavior management practices are widely used today

- Over 267,000 reported instances of restraint and seclusion
- Approximately 163,000 instances of personal restraint
- Approximately 7,600 instances of mechanical restraint
- Approximately 104,000 instances of seclusion
Restraints are Harmful and Undesirable

• Reduce interaction with environment
• Stigmatizing
• Physical Injury
  – Physical injuries
  – Tendon shortening & Bone demineralization
  – Lethal (Deadly restraints, Hartford Current, 1998)
• May positively or negatively reinforce target behavior
• Reduce motivation to treat target behavior
Laws and Professional Ethics Differ Widely

- State & Agency laws differ widely
- ABAI Statement on Restraint and Seclusion, 2010 Guiding Principles
  - The Welfare of the Individual Served is the Highest Priority
    - Not parents / guardians / organizations
  - Individuals (and Parents/Guardians) Have a Right to Choose
    - Including restraint and seclusion
  - The Principle of Least Restrictiveness
    - Appropriate protection or an open back door to restrain?
- TASH
  - Positive supports only
  - Opposes all use of restraint
  - Actively lobbying states to eliminate use of restraints
    - Some states now have law to limit use of restraint
    - US federal law is stalled
PART II. Effective ABA Interventions

1. Reducing the target behavior that occasion the use of restraint
2. Effective staff training and supervision
3. Applied behavior analytic interventions
   • Function-based interventions
   • Restraint fading procedures
   • Empirical evaluations of the most effective and least intrusive form of restraint
Reducing the target behavior that occasion restraint (Sturmey & Didden, 2014; Singh, 2016)

- Function-based interventions
- Extinction
  - Combined with differential reinforcement
  - Combined with punishment
- Functional Communication Training
- Non-Contingent Reinforcement
- Antecedent interventions
  - Removing Antecedents
  - Modifying Antecedents
Effective Staff Training And Supervision

• Prevention
  – Train adaptive behavior
  – Following structured routines
  – High rates of positive reinforcement
  – High rates of choices
  – Few instructions, other aversive stimuli

• Intervention
  – Prevention
  – Consequence for alternate behavior
  – Consequence for target behavior
Behavioral Skills Training

- **Components**
  - Task analyze staff performance
  - Instructions
  - Modeling
  - Rehearsal
  - Feedback
- **Abbreviated training**
  - Modeling
  - Brief feedback only if necessary
- **Programming generalization**
  - Multiple exemplar training
  - Scripts and role play
- **Systems of training**
  - Staff curriculum
  - Pyramidal training
Travis & Sturmey (2014)

- To reduce aggression in 3 adults with mild ID
  - Forensic setting
- Conducted FBA to identify pairs of triggers for “anger”
- Presented triggers at regular intervals throughout study in natural environment
- Intervention
  - Teach one of each pair of skills
  - Behavioral Skills Training in group
**Figure 1.** A graph of the relationship between baseline and post-behavioural skills training (BST) training and the percentage of aggressive and replacement responses in all three participants.
Functions of Restraint

- We cannot assume function of Restraint
- No function
- Positive reinforcement
  - Pairing with attention
  - Restraint materials
- Negative reinforcement
  - Removal of aversive stimuli
- Positive punisher
  - Effective treatment
  - Aversive (painful) stimulus
- Negative punisher
  - Loss of reinforcers
  - Time out
Use of Restraint devise as positive reinforcer

• Contingency-based procedure
• Favell et al. (1981)
  – Used reinforcer materials in DRO to treat self-injury
  – Stretch DRO interval
  – Reinforce alternate behavior
  – Restraint materials reinforced arbitrary response
• Foxx & Dufresene (1984)
  – Replication with “Harry”
Restraint Fading

• Restraint as antecedent
  – Transfer of stimulus control procedures
• Fading mechanical restraints
• Fading stays (Iwata)
• Fading air pressure restraints
• Gradual modification of mechanical restraints into clothes, watches, objects, hats etc.
Combined fading and shaping

  - Shaping other behavior using access to reinforcement materials
  - Fading mechanical restraint
  - Transfer of stimulus control
    - Clothes → objects in hands → glasses / hat
  - Long-term follow-up
- Often needs ingenuity and persistence
Empirical evaluations of most effective / least intrusive restraint.

• Dehais et al. (2015)
  – “Rapid Restraint Analysis”
  – N=10
  – Varied degrees of flexion
  – Observed SIB and an adaptive behavior (usually eating)
Mean rates of SIB and consumption in responses per minute during conditions of varying levels of splint flexion (BA = bare arms, Cotton = cotton sleeves, ES = empty splints). Asterisks indicate the level of splint flexion selected.
Summary

• Restraints are:
  – Undesirable and often dangerous
  – Widely used

• ABA can reduce their use
  – Preventing problem behavior
  – Training staff effectively
  – Interventions directly related to restraint
PART III.
Service-Wide Restraint Reduction

• Not individuals, but groups / organizations
• Long history
  – Connolly (1857)
• Restraints distributed very unevenly
  – Specific people
  – Specific times
  – Specific Antecedents
  – Specific service units
• Often associated with
  – Program problems
  – Staffing / supervision problems
• Staff often have
  – no clear guidelines
  – No alternatives
• Finn & Sturmey (2009)
Sanders (2009)

• **Service-wide intervention**
  – 75 children and 43 adults
  – Day school and the residential program
    • Clients supported in the 21 community-based group homes
    • Two school sites often lacked safety awareness
  – Males (71%) and females (29%)
  – **Children**
    • 7 to 21 years
    • 24% had profound or severe intellectual disabilities
    • 43% had moderate to mild intellectual disabilities
    • 33% their level of intellectual disabilities was unspecified.
  – **Adults**
    • Aged from 18 to 68
    • 42% had profound to severe intellectual disabilities
    • 40% had moderate to mild intellectual disabilities
    • 18% their level of intellectual disabilities was unspecified.
Four components

• Action Plan
  – Measurement
  – Goals
  – Alternates to restraint

• Staff Training

• Management Support
  – “Manager on street”

• Monitoring
  – Graphed data
  – Used data
The rates of physical interventions per 50 000 adjusted client days during Fiscal years 2005–2008.
The rates of client-related injuries per 50,000 adjusted client days 2005–2008.
The total costs of lost staff time and replacement labor costs for client-related staff injuries 2004–2008.
• Institutional Setting
  – Clients: N=925 aged 13-65, 60% profound ID, 22% severe ID.
  – Staff (including trainers): Chief psychologist, medical director and assistant superintendent oversaw restraint management.

• Survey of use of mechanical restraint, identifying and tracking high priority individuals, development of behavior plans, behavior data monitoring and feedback; organizational contingencies so that if injuries or restraint a behavior plan must be written and implemented.
Fig. 1.
Mechanical behavior programs.
Iwata et al. (2009)

- **Setting and Clients**
  - Community based residence serving 90 adolescents and adults mostly with moderate – borderline
  - Clients: Of 50 individuals with timeout 11 were excluded because of behavior severity
  - 39 individuals participated who engaged in aggression (15%), property destruction (15%) or both (70%)
  - Direct carestaff received 4 hr competency-based training on TO with periodic performance tests on TO and other behavioral procedures.
  - Primary Intervention
    - Time out (TO) was exclusionary time out such as removal of individual from the immediate environment or non-exclusionary time out such as sitting in a chair without attention or activities.
    - TO was sequentially withdrawn and evaluated for 3-5 individuals per month staggered across 12 months.

- **Primary Outcomes**
  - TO was eliminated in 92% (36/39 cases).
  - For 21 (62%) of individuals elimination had no effect on target behaviors.
  - For 13 (38%)there was an increase in target behaviors, but which could be eliminated for 10 individuals with other and often less restrictive procedures.
  - Only for 3 of 34 individuals was TO associated with reduction in target behaviors with no less restrictive alternative being immediately apparent.
Figure 1 Mean number of days during which problem behaviour occurred for subjects who showed decreases (top panel) and increases (middle panel) in problem behaviour when timeout was removed, and for subjects whose timeout programmes were reinstated (bottom panel).
Figure 2  Total frequency and duration of timeout aggregated across all subjects prior to and throughout the phased timeout-reduction programme.
Singh et al. (2017)

- Mindful-Based Positive Behavior Support (MBPBS) v. Treatment as usual (TAU)
- Setting
  - 48-bed facility
  - 6 homes with 6-10 individuals per home
- MBPBS
  - 7 days of training over 1 month
  - Part I: Posture, breathing, focusing on breathing, meditation
  - Part II:
    - Four immeasurable - equanimity, loving kindness, compassion, and empathetic joy
    - being in the present moment
    - the three poisons—attachment, anger and ignorance
  - Part III: Review & future application for next 40 weeks
**TABLE 1 |** Socio-demographic characteristics of the caregivers and individuals with IDD in their care for the Mindfulness-Based Positive Behavior Supports (MBPBS) and Training-as-Usual (TAU) conditions.

<table>
<thead>
<tr>
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<th>MBPBS</th>
<th>TAU</th>
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<tbody>
<tr>
<td></td>
<td>Caregivers</td>
<td>Individuals with IDD</td>
<td>Caregivers</td>
<td>Individuals with IDD</td>
</tr>
<tr>
<td>Number of participants</td>
<td>37</td>
<td>24</td>
<td>38</td>
<td>24</td>
</tr>
<tr>
<td>Mean age in years (SD)</td>
<td>43.05 (10.39)</td>
<td>39.21 (7.61)</td>
<td>45.08 (7.87)</td>
<td>42.33 (9.22)</td>
</tr>
<tr>
<td>Age range (years)</td>
<td>23–62</td>
<td>27–54</td>
<td>25–59</td>
<td>24–57</td>
</tr>
<tr>
<td>Gender: males</td>
<td>14 (37.83%)</td>
<td>16 (66.67%)</td>
<td>10 (26.32%)</td>
<td>16 (66.67%)</td>
</tr>
<tr>
<td>Level of functioning</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Severe</td>
<td>na</td>
<td>9 (37.5%)</td>
<td>na</td>
<td>7 (29.17%)</td>
</tr>
<tr>
<td>Profound</td>
<td>na</td>
<td>15 (62.5%)</td>
<td>na</td>
<td>17 (70.83%)</td>
</tr>
<tr>
<td>Number of individuals on psychotropic medications</td>
<td>na</td>
<td>20 (83.33%)</td>
<td>na</td>
<td>19 (79.16%)</td>
</tr>
<tr>
<td>Number of individuals with mental illness</td>
<td>na</td>
<td>20 (83.33%)</td>
<td>na</td>
<td>19 (79.16%)</td>
</tr>
<tr>
<td>Number of individuals with behavior plans for aggressive behavior</td>
<td>na</td>
<td>18 (75%)</td>
<td>na</td>
<td>16 (67%)</td>
</tr>
</tbody>
</table>

*na, not applicable.*
FIGURE 3 | Mean number of physical restraints per week used by caregivers contingent on aggressive behavior of the individuals in the MBPBS and TAU conditions. Error bars report standard error of the mean.
FIGURE 4 | Mean number of stat medicines per week used by caregivers contingent on aggressive behavior of the individuals in the MBPBS and TAU conditions. Error bars report standard error of the mean.
FIGURE 6 | Mean number of additional caregivers used for 1:1 staffing in the MBPBS and TAU conditions. Error bars report standard error of the mean.
Summary of Review

1. 13 varied studies from multiple authors / settings / countries
   - Special education / child residential neglected.
   - All reported large and sustained reductions in restraints over 1-7 years.

2. What does it mean?
   - It has to and can be done!
   - Is it reporting / publication bias? What might be in the bottom drawer? Are there setting-specific factors that facilitate / inhibit restraint reduction?
Practice Implications: Common features in effective studies

1. Data collection, often goals and feedback.

2. Initial and ongoing staff training, not once-off staff training that gives staff alternative behavior to restraint.

3. Takes 6-12 months to achieve approximately 75-90% reduction, which can be maintained for up to 7 years.
Questions?
Thank you!

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