

Martial Arts and Brain Injury: The Pride, The Passion, and The Potential of The Human Spirit

***Presenters: Jack Polonsky
David Slonim
Connie Blake***

CHIRS Self-Defense Program Group Constellation

- All members have an Acquired Brain Injury
- Some use a wheelchair, a walker or are ambulatory
- Some are deaf or hearing impaired
- Some are partially blind or have visual field deficits
- All members have a wide range of cognitive and physical deficits

Physical Issues Include:

- Hemiparesis and ataxia
- Balance and gait issues
- Pain including muscle and joint, and headaches
- Range of motion and muscle contracture challenges
- Strength and fatigue issues

Cognitive Deficits Include:

- Short term memory and concentration deficits
- Single side neglect
- Speech articulation and word search difficulties
- Problem solving difficulties

Emotional / Behavioural Include:

- Impulse control issues
- Emotional lability
- Egocentricity issues
- Social disinhibition

Behavioural and Social Deficits Include:

Behavioural Excesses (too much)
e.g., perseveration, anger, abusive language or arguing, or agitation.

Behavioural Deficits (too little)
e.g., initiation, follow through, task sequencing ability, problem solving.

Stimulus Control Issues (the behaviour is ok, but the time or place is wrong)
e.g. yelling at a hockey game is ok, but not in a library.

CHIRS Self-Defense Program

Goals:

- Improving Physical Conditioning
- Developing Self-defense Skills
- Providing Opportunities for Socialization
- Developing Leadership Skills
- Developing Social Skills and Problem Solving Strategies

Elements Of Our Program:

- *The wearing of martial arts uniforms and lining up according to earned rank*
- *Traditional Japanese rituals that represent the ideals of ancient Japan:*
 - *Respect and Honor*
 - *Mutual Safety*
 - *Commitment to self-other improvement*

Elements Of Our Program

- *The Use of Japanese terminology and American Sign Language*
- *Practicing various styles of Martial Arts movements:*
 - *Strikes*
 - *Blocks*
 - *Katas*
 - *Verbal and Physical Self-defense techniques*
 - *Relaxation and meditation techniques*

Martial Arts: It's Not Really About Breaking Arms and Cracking Skulls



Integrating a Biological, Psycho-social, Behavioural Model into a Martial Arts Program

HOW?






Newton's Law of Inertia

"Every object persists in it's state of rest or uniform motion in a straight line unless it is compelled to change that state by forces impressed upon it."



Sir Isaac Newton, 1686

Any group work requires the facilitator to develop commonalities among members

- All members have brain injuries 
- All members have joined the program for the same reasons 
- All members have the same physical abilities 
- All members have studied martial arts in the past 
- All members have the same learning styles 

Group Cohesion Goals

- Develop a martial arts family dynamic within the club.
- Support senior or more experienced (higher ranking belts) members to take on mentoring and leadership roles.

*We make a living from what we
Get*

*We make a life from what we
Give*

Jita Kyoei Goal

- Demonstrate their acquired abilities for the public to:
 - increase brain injury awareness
 - act as brain injury ambassadors

Implementation: Physical Movement

- to cross the line of laterality;
- utilize limbs that may be atrophied because of neglect or contracture issues;
- increase their range of motion and flexibility;
- increase their physical strength and endurance;
- increase their ability to relax and reduce muscular tension;
- increase the requirement to use visual scanning techniques.

Implementation: Activation of Brain Systems

- Use of repetitive movements during practice develops muscle memory
- Pairing screaming with initiation of movement:
 - promotes alertness and concentration
 - stimulates emotions
 - activates communication abilities
- Use of music stimulates other brain pathways

Abraham Maslow

“If the only tool you have in your toolbox is a hammer, then every situation begins to look like a nail.”



Implementation: Social Skills

- Use of humor
- Modeling of the coping skill of “laughing at our own mistakes”
- Use of ice breaker trivia or “what’s new this week” discussions

Implementation: Social Skills

- Reinforcement of pro-social interactions within the group
- Use of a Plan, Action, Evaluation model
- Training of relaxation breathing techniques
- Use of an Affective Problem-solving Model

Problem Solving: The Martial Arts Way



Implementation: Family Involvement

- Family members celebrate the grading ceremony
- Family members share the pride of achievement by attending the various community demonstrations

Implementation: Behavioural Principles



- Dressing in traditional uniforms
- Lining up according to colour of rank
- Having the mat area arranged and the picture of the founder of Judo clearly displayed
- Engaging in the respectful ritual of bowing to each other

...all assist to initiate the behavioural chains associated with the Martial Arts program

Implementation: Behavioural Principles

- Errorless learning is used to reduce embarrassment and anxiety associated with attempting new tasks
- Behavioural chaining: all movements are broken down into components and each small step is practiced individually. The learned step is then paired with a new step



Behaviour Modification, What It Is and How to Do It - 8th ed.,
Martin & Pear

Implementation: Behavioural Principles

- An improved success rate will occur when a positive behavioural momentum is established:

“Compliance with demanding requests that are normally ineffective may be increased by presenting a series of easy or high-probability (high-*p*) requests before the more demanding requests.”

Nevin, J. A. (1996)

Implementation: Behavioural Principles

A teaching or prompting model that insures our members fully understand what is being requested of them is used.

Tell them - Verbal prompt or Use of ASL

Show them - Visual or Gestural prompt

*Help get them get started-
Physical guidance*

Implementation: Behavioural Principles

- Offering choices can provide the member with ideas about how to complete the task.

E.g., “I’d like you to lead the warm up. Are you going to do it all yourself or choose others to share the responsibility and their ideas?”

Implementation: Behavioural Principles

- Pairing of day to day familiar actions, e.g., looking into a hand mirror, to assist with the integration of a seemingly unrelated or new movement
- Systematic De-sensitization assists with the generalization of skills practiced in the club to demonstration venues

Bourne (1995)

Implementation: Behavioural Principles

- Task specific positive verbal reinforcement assists members to remain focused and on task.
- Differential Reinforcement of Incompatible Behaviour (DRI):
 - Extinction or planned ignoring in response to off task behaviour is often effective when used in combination with the high rate of positive reinforcement for on task behaviours

Implementation: Behavioural Principles

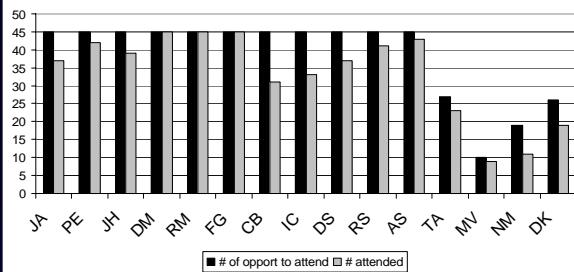
- Proximity reinforcement:
 - Verbally reinforcing an on task member who is in close proximity to the off task member often results in initiation of the required task by the member displaying off task behaviour.

Important Questions To Look At:

- Are we improving the quality of people's lives in a significant way?
- Are we just playing around?

Efficacy Data

CHIRS Self-Defence Program
January 1- November 14, 2006
Comparison of Opportunities to Attend
and Actual Attendance



Limitations:

- No Beck Depression Inventory
- No Quality of Life Questionnaire
- No Consumer Satisfaction Scales

You be the judge

PLAY DVD