A Biomechanical Assessment and Review of the Physical Restraint Techniques of the Mandt System®

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Introduction

Classical techniques of physical restraint have their roots in self defense. The goal of these techniques is often to attain client control by the threat of or by direct application of pain using pressure points, joint locks, joint hyperextension, or prone posture restraints. Application and misapplications of these methods have resulted in traumatic injury, long term impairment, and death to clients in residential care. In addition to the physical risk of injury, methods of control and immobilization have been shown to interfere or impede the road to mental recovery for clients. In an effort to improve the standard of care, David Mandt and Associates have developed an integrated crisis management system which seeks to minimize the use of physical restraint and provide for increased safety for both client and staff when restraint is necessary.

In contrast to classical methods of self defense which prioritize the health and safety of one individual over the other, The Mandt System® has taken an innovative approach with the goal of minimizing injury to both clients and the care giver. In the Mandt System, only when additional injury is imminent to client, staff, or others and non-physical methods have proven unproductive, can the use of physical restraint be justified. This is well demonstrated in their 5 day introductory and intermediate workshop of which more than 65% of the time is devoted to non-physical methods of crisis de-escalation. When physical restraints are employed using The Mandt System®, the techniques are designed to impose the minimum restraint necessary, minimizing the risk of injury to both client and staff, resulting in effective client de-escalation.

Discussion

A biomechanical assessment of the physical skills of the program was performed by participation in a 3 day workshop with Mandt trainers. During the workshop the author experienced each of the techniques from an observer, staff, and client perspective. For each technique the risk of injury to both client and staff was addressed. In addition, both proper technique and slight variations of proper technique, which may occur in skill breakdown over time, were considered. Because the physical techniques are built around a few primary building blocks, advanced techniques flow logically from basic physical principles taught early in the program. The basic principals of the system are straight forward to learn and readily adapted to differing situations. In addition, the skill deterioration over time is limited compared to programs where different skills require learning and remembering many separate principles. The basic principles focus on stance, spinal alignment, hand orientation, and shoulder joint orientation. Using the basic principles, staff learn how to avoid direct exposure to aggressive moves, redirect client outbursts, and protect clients from hurting themselves or others. In addition to managing aggressive behaviors, the same basic principles can be used to assist non-aggressive clients in getting up from the floor, out of a chair, assist them in walking from room to room, or picking up immobile clients and transporting them in an emergency situation. The basic principles are

biomechanically sound and result in a low level of injury risk to both client and staff.

The goal of The Mandt System® is to apply the minimal restraint necessary to protect the client and staff in a crisis situation. It is often thought that clients respond with escalating behavior in proportion to the degree of restriction placed on them by a physical restraint. Because the techniques of The Mandt System® try to minimize physical restriction, clients are less likely to escalate to the same level as if staff were trying to immobilize and completely control them. The Mandt System® allows the client relative freedom and teaches staff how to position themselves with respect to the client to avoid injury. Patients are never forced to the floor and are always allowed to get up or change their posture or position in even the most restrictive techniques taught by the Mandt System. This is in contrast to many classical techniques which teach take downs and immobilizing clients by sitting or laying on them which may interfere with breathing, a life sustaining function. In developing their techniques, David Mandt and Associates made it a priority that life sustaining functions would not be physically interfered with by the restraining technique. Further the techniques focus on keeping joints in their normal range of motion so dislocations or fractures are unlikely to occur. Unlike classical basket-holds or chicken wings, none of the Mandt restraint techniques induced physical restrictions to breathing or risk of joint hyperextension and dislocation. Despite the feeling of relative freedom while being restrained, it was not perceived that this relative freedom would result in an increased risk of injury to the staff. In contrast, because of the relative position of the staff to the client, the staff are at a low risk of significant injury resulting from client outbursts.

Conclusion

The Mandt System® offers significant advantages to both staff and clients over classical techniques of restraint. David Mandt and Associates should be commended for their ongoing efforts in developing and expanding their system which provides many alternatives to the use of physical restraint. When the use of physical restraint becomes necessary, staff and clients can be assured that the risks associated with use of The Mandt System® have been minimized through planning and research. While no restraint can be considered risk free, The Mandt System® offers a promising alternative to classical methods of self defense training.

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About Chris Van Ee, Ph.D.

Dr. Van Ee is a biomechanical engineer at Design Research Engineering in Novi, MI. He is also an adjunct faculty member in the Biomedical Engineering Department at Wayne State University where he currently teaches a graduate level course and is actively engaged in automotive safety and orthopedic biomechanics research. Dr. Van Ee received his Ph.D. from Duke University with a focus on cervical spine injury mechanisms and tolerance. He has been a reviewer for the National Institutes of Health and for the Journal of Traffic Injury Prevention. His scientific research has focused on determining injury causation, human tolerance, and evaluating injury prevention strategies. He has worked in collaboration with The National Highway Traffic Safety Administration, The Centers for Disease Control and Prevention, The National Institutes of Health, and automotive manufactures on projects related to biomechanics and injury prevention.

Dr. Van Ee has authored numerous scientific articles and has received multiple honors and awards for his work in automotive safety.