



The Role of Immobilizations in Crisis Management and Seven Factors that Influence the Safety of Restraint

There are a variety of ways to contain individuals in crisis whose behavior is physically assaultive, disruptive or self-injurious. There is chemical sedation, seclusion, mechanical restraint, and physical (manual) restraint. Each of them has an appropriate place to help provide for the safety of individuals in crisis. Each one of these methods of controlling individuals has resulted in and may, unfortunately, continue resulting in the deaths of individuals in crisis. Death is not a frequent problem in crisis management, but it does occur nonetheless. Although there are risks involved with any method of crisis management, in this paper, the focus will be on physical restraint procedures.

There have been two primary ways to deal with methods of physical restraint that have resulted in death, one is to initiate a ban on a particular procedure (a one-person prone basket hold) or even on an entire category of procedures (prone restraints of any kind). The other way is to carefully control, monitor, and limit the application of these procedures or categories of physical restraint. Generally, it makes far more sense to put a ban on a particular procedure than an entire category of procedures. Unfortunately there is a great deal of "throwing the baby out with the bathwater" whenever procedural problems arise. It is understandable to ban a particular procedure (a particular way of immobilization) that has resulted in numerous deaths or injuries, but it is often a disservice to the people we are trying to help to ban entire categories of immobilization without first trying to establish if some particular procedures can be clinically effective yet safe. Before looking at issues in the use of a prone immobilization, there needs to be an examination of some general issues in the safe use of physical restraint.

General Safety Issues in Physical Restraint

The following issues can affect a broad range of physical restraint categories and procedures. We will examine the importance of:

1. Design
2. Training
3. Skill Retention
4. Utilization Criteria
5. Oversight
6. Medical Evaluation
7. Existing treatment programs

Design: The *design* of a particular physical intervention is perhaps the most critical element regarding safety and clinical effectiveness. The design refers to both the position that staff are required to assume and the position that the individual in crisis is placed in. The positions of all

persons involved are equally important. If the staff are comfortable, but the individual is in an awkward or unnatural position, the procedure will be susceptible to problems. If the individual is comfortable, but the staff have little ability to safely contain them, or the staff feel like they are positioned in an awkward manner, they are likely to alter the design to make themselves more comfortable. A procedure should be designed so that it is relatively easy to maintain the position for more than a few seconds or even minutes. Positions that are difficult to hold invite staff to alter their bodies (and hence the procedure) to maintain their comfort. There must be a good balance between the comfort of the individual and the comfort of staff. Other design elements to consider are the number of people needed to safely implement the procedure and whether the procedure applies equally well to children, adolescents and adults or whether it needs to be modified based upon the size of the person.

Of critical importance is that a procedure be designed in such a way that even large errors in implementation do not result in a severe injury or death. A procedure that can withstand many variations in its implementation may be spoken of as “robust,” that is, a margin of safety can be maintained even during an incorrect implementation. Some procedures are designed such that small variations can dramatically increase the risk of injury to staff and/or clients. A procedure that is poorly designed cannot be compensated for by increased vigilance in training, oversight, skill retention, etc., because one will end up with staff who are well trained and supervised using a poorly designed procedure exactly as it was taught to them. A procedure that is well designed (or robust) can better withstand violations in these other important areas of physical restraint (in much the same way that “robust” statistical formulas can withstand error in sample selection).

Training: Staff training is especially important in physical interventions as poorly trained staff will undoubtedly implement the procedure incorrectly. Training should be competency-based vs. attendance-based. Individuals who can demonstrate competency as part of the criteria for passing a course will be less likely to show “behavioral drift.” Drift, very simply, is a description of deviations in a staff member’s behavior over time. Everything that occurs during training should be carried out with an eye towards minimizing the likelihood of drift. Drift can result from lack of practice (resulting in forgetting), or staff may learn, over time, that certain ways of holding “feel” better than others and they make small adjustments to the procedure until it only vaguely resembles the one that they were taught initially. The duration of the training is also important as there must be ample time for staff to practice the procedures they learn. Trainings should make use of “distributed practice” in which physical procedures are practiced *throughout* the training instead of being taught only at the end of a training. Finally, the class size must be limited to ensure that all participants may be adequately observed, assisted, and evaluated.

Skill Retention: As mentioned above, drift may occur as a function of failure to use the skills learned during training. It is for this reason that there must be (at least) annual re-training of individuals. After several years of re-training, the behavior of staff will tend to drift less often and less severely. Furthermore, without regular re-training and re-evaluation staff may become physically incapable of performing certain procedures yet they may continue to attempt using these procedures. This can endanger the staff member as well as the people they serve. Annual re-training can catch these sorts of problems.

Utilization Criteria: Rules for when to use and when not to use physical interventions can be called “utilization criteria.” If a crisis intervention course or a facility policy does not adequately define when to use and when not to use physical interventions, there can be a resulting over-utilization or under-utilization. Either extreme is problematic. Over-utilization means that clients will be physically assisted when there really is no need. This results in a very high incidence of physical restraint. This can also produce subsequent aggression in a client who may feel that the physical procedures were unwarranted. Under-utilization can put clients at risk by not stopping their aggressive, disruptive, or self-injurious behavior. In most facilities, the norm is more towards over-utilization. This means that the criteria for intervening are poorly defined, or staff have few or no other skills at their disposal for handling the problem in a more appropriate manner e.g., prevention, de-escalation, behavior programs.

Oversight: Staff who are poorly supervised, or supervised by an individual with little or no knowledge of the system of physical intervention are at risk of over-utilization and drift. Even with very clear utilization criteria there are times when individuals must make a “judgment call” as to whether or not physical intervention is warranted. Poorly supervised individuals may not have the judgment necessary to make the right decision. Staff working at a facility where there are a variety of people serving as instructors in physical intervention will have the benefit of the accumulated experience and judgment of those individuals. It is much more difficult for a staff member to continue to implement a procedure incorrectly or unnecessarily when there is a high probability that their behavior will be observed by a supervisor *who is knowledgeable in that system of physical intervention.*

Medical Evaluation: Although there are occasions when an individual with no history of aggression may experience a severe aggressive episode, most facilities are familiar with the behavioral patterns of the people they serve. These individuals (especially) should receive proper medical clearance to use physical interventions (any sort of restraint, mechanical or otherwise). For example, individuals prone to heart problems or very high blood pressure, brittle bones, recent fractures, morbid obesity, respiratory problems, etc. should have clearance from their physician before implementing restraint procedures of any kind. The point here is that, for a small percentage of the population, any kind of strenuous activity can precipitate medical problems, be it struggling against a mechanical restraint, resisting staff, running, or even participating in sports. Often times deaths may be blamed on restraint (which is sometimes accurate) but there are numerous instances of “healthy” individuals who die suddenly during or right after strenuous exercise. Individuals with existing medical conditions might need alternate means for controlling their behavior such as seclusion rooms, or chemical sedations. Finally, there may be some instances where particular procedures are not advised for particular individuals (pregnant women should not be restrained in a prone position). This does not mean that a particular procedure is “dangerous” for everyone.

Existing Treatment Programs: Finally, one of the most important variables that impacts the use of physical interventions is existing treatment programs. Facilities that do not adequately address an individual’s crisis behaviors through de-escalation, skill acquisition (prevention), environmental re-structuring, or general “quality of life” improvements will need to use physical interventions regularly and (possibly) indefinitely. Many facilities, hence the staff who work there, are good at “putting out fires.” Facilities must, however, have the means necessary to

move people forward in their treatment. This is the difference between behavior *management* and behavior *change*. Many facilities pride themselves on their ability to “handle” clients with challenging behavior problems, but the ability to contain crisis behaviors is only one small part of an integrated teaching and treatment program. Facilities that rely too heavily on physical interventions will find that their use becomes *more* and not *less* necessary over time.

The Importance of Prone Immobilization

As a means of controlling high magnitude aggressive, self-injurious and disruptive behavior, the prone immobilization is a safe and valuable tool if used properly by well trained staff. There are a variety of reasons for this. There are specific reasons for both horizontal immobilization in general, (prone or supine) and reasons that favor a prone over a supine position.

Reasons to immobilize in a horizontal rather than a vertical position:

1. It is easier to get a more complete immobilization in a lying position than in a standing position. It is important to achieve as complete an immobilization as possible so that the behavior of resisting will result in little or no reinforcement. If the individual can move around significantly, their behavior can be intermittently reinforced by momentarily escaping from the procedure. While standing, individuals can generate tremendous amounts of resistance through their legs and they have a greater range of motion. Even when primarily using upper body strength, an individual is using their connection to the ground to help generate resistance. When staff are resisting against a person’s arm, they are, in effect, resisting against the ground itself. This is why, for example, it is easier to vertically immobilize someone with their legs close together rather than spread apart.
2. It is easier for a person to relax in a lying position. When individuals wish to relax, they don’t tend to do it standing up. Most people will either sit or lie down. As a lying position is more conducive to relaxation, there is a greater probability that an individual will relax, especially if they are comfortable on a foam mat.
3. A person struggling at a high magnitude in a vertical position puts both themselves and the supporting staff at risk of falling over, which often results in injuries. A person who is methodically, proactively, placed on a mat is (naturally) no longer at a risk of falling. Also, many individuals will attempt to escape from a vertical immobilization by “dropping” thus requiring staff to; 1) hold them up (possibly resulting in back injury to the staff), 2) let them go, or 3) fall to the ground with them.

Reasons favoring a prone position over a supine position:

1. A prone position helps to limit reinforcement in the form of eye contact from staff and others as well as limiting the ability of the individual to spit at and/or bite staff. Spitting must not be taken lightly, especially with the consideration for communicable diseases. Furthermore, some staff may attempt to cover the individual with a towel if they are being spit at. In a supine position the individual has a direct view of everyone and everything going on around them and be able to see the facial expressions of staff, all of which could easily escalate their behavior resulting in a longer intervention. All things being equal, longer interventions increase the likelihood of injuries to both staff and clients.

2. It is easier to control a person in a prone position on the ground, than in a supine position. Although the human torso can bend in various ways, the most natural and frequent way to bend the torso is forward from a straight position (as opposed to backward). All muscles and joints help to support this forward bending movement. Also, the range of motion for most individuals is extremely limited when trying to arch the back unless they have engaged in special stretching exercises (such as gymnasts). The phrase "bending over backward" is used to indicate that someone is (in trying to appease someone) putting themselves in an awkward position that is difficult to attain and maintain for any reasonable period of time.
3. In a prone position, an individual cannot effectively use their most powerful leg muscles (the calves, quadriceps and the gluteus maximus) to their advantage because they cannot effectively push against anything. In a supine position an individual only needs to raise their knees slightly to contact the floor with the bottoms of their feet and start to push. In a prone position, the individual can effectively only use their "hamstring" muscles to curl up their lower legs. This movement cannot however raise them up off of the mat. The hamstrings are typically (without specialized training) among the weakest of the leg muscles.
4. Individuals in a prone position are at less risk of aspiration should vomiting occur during a procedure (naturally the procedure would be terminated at this point).
5. All things being equal, a prone immobilization will generally produce a shorter intervention. This is because prone positions allow for a more complete immobilization. The more complete the immobilization, the more quickly an individual will stop struggling.

Safety Issues In Using Prone Immobilizations

The argument has been made that horizontal immobilizations can be much more effective than vertical for high magnitude aggressive behavior, specifically, prone immobilizations. There are however some caveats that must be observed to ensure the safety of any prone immobilization. They are as follows:

1. Prone immobilizations should be performed on a [foam mat](#)* and not on a hard surface. Not only does the mat prevent an cycle of escalation that would happen on a hard surface, but there is a decreased risk of an extended abdomen pushing the internal organs inward which could decrease the lung capacity. Instead, an extended abdomen will be accommodated through compression of the foam in the mat.
2. Prone immobilizations should be performed with at least two and preferably three people, but never with one person.
3. No part of the individual's torso, head, or neck should have any pressure applied to it.
4. The torso should not be "straddled." Although no one is touching the torso in a straddle position, if the staff member deviates from the position or becomes tired, they will very likely end up laying directly on the torso.
5. There must be a clear, precise, mandatory release criterion and not simply "let them go when they are calm." The importance of this release criterion cannot be understated. In some instances, there have been reports that an individual had finally been released more than 8 minutes after they had already stopped breathing because they did not "feel safe" even though the person had stopped resisting. In PCM there is a mandatory 3 second release criterion in which 99% of all pressure to the limbs is removed. Anyone certified in CPR understands that 3 seconds is ample time to begin life-saving resuscitation in the event of respiratory or cardiac arrest.

6. As mentioned earlier, individuals who are known to be predisposed to crisis behaviors should have appropriate medical evaluations to ensure that a prone immobilization (or any other form of holding, mechanical restraint, or chemical sedation for that matter) is not medically contraindicated. Even an individual struggling at a high level for an extended period of time in a supine position can still be at risk for a variety of cardiovascular-related problems.

In summary, prone immobilizations can be both safe and effective in stabilizing the behaviors of individuals in crisis. There are a number of reasons that favor horizontal immobilizations over vertical, and those that favor prone over supine positions. We believe that the overall safety of any given procedure is a culmination of the seven factors listed above (design, training, skill retention, utilization criteria, oversight, medical evaluation, and existing treatment programs). The extent to which these factors are violated can adversely affect the safety of ANY form of physical restraint (including prone immobilizations).

Although some of the PCM immobilization procedures can be categorized as prone procedures, they cannot be placed in the same category as those procedures that are vaguely described in such articles as the Hartford Courant article on Deadly Restraint and the article on Positional Asphyxiation by Protection and Advocacy Inc. (PAI). All that is known from these articles is that individuals were held in some fashion face down. No specifics about the staff training or the exact procedures are known. Here are the exact excerpts of the "procedures" used in the restraints that were alleged to cause the deaths of 4 individuals. We are not attempting to dispute the causes of death, but to point out the lack of knowledge of the specific procedures used to hold the individuals. These are the descriptions from the PAI article:

“Physically restrained prone on the floor”

“Physically contained in a prone position”

“...three staff members contained (name of client) on the floor in the prone position.”

“...one staff used his body weight to contain (name of client).”

“...(name of client) was taken to the floor initially on his back, but was then turned into a prone position.”

Here are even more quotes from the Hartford Courant article on deadly restraint and their database:

“She was crushed face down on the floor in a “therapeutic hold” applied by a man twice her size.”

“Better staffing also reduces the risk of a restraint, like the face-down floor hold in which Andrew died.”

“Montgomery, a child-care worker at the Methodist Children's Home Society, sat on Smith and

ignored his pleas for air because it was "typical of the ruses used by children to get themselves released from restraints," she said in a court deposition."

"Harold W. Jordan Center was called in to help "shuffle" patients -- slamming them to the ground face-down if they acted up or disobeyed"

From the Database re: Hartford Courant

Died while face down in restraints.
Face down, arms in front of chest; aide on top.
Face-down restraint with arms crossed over chest.
Restrained face down on a pillow.
Handcuffed and brought face down to floor
Restrained face down with arms crossed over chest.
Restrained face down by staffer who thought his distress was a ruse.
Face down restraint.
Face down on floor, towel in mouth.
Six aides restrained him face down, one on buttocks.
Patient physically restrained while face down; became unresponsive.
Restrained face down; patient stopped struggling after 12 minutes.
Aide used a "one-man body slide" that led to face-down restraint
Placed face down on the floor with staffer laying across back
Prone torso restraint after he tried to leave a day camp
Unruly resident restrained in face-down floor hold for 15 minutes
Pinned face down by aides, given tranquilizer.
Face-down restraint.

Based on these descriptions, it is entirely possible that ALL the staff members were lying directly on top of the individuals in question. There are no descriptions in either article to the contrary. There are no names given to the procedures and no indication that ANY of the staff were in fact trained and currently certified in any systematic, clinical, program of crisis management, and our best guess is that they simply were not. In order to truly assess what is dangerous and what is safe, it would be necessary to know exactly what was done in each instance. "Face-down restraint" is not the "name" of a procedure it simply denotes the position of the body. Just as "Sport-Utility Vehicle" (SUV) is not the name of a specific car, nor even a specific automobile manufacturer. There can still, however, be some SUVs that are very dangerous and some that are safe. Most, if not all, of the restraints listed above cannot rightfully be called procedures, for the word "procedure" implies some sort of systematic way of appropriately dealing with a known, recurring problem. A better term for these unfortunate restraints would be "reactions," for in most instances, that is exactly what they are.

The thrust of this paper is that *specific* procedures that are part of a *specific crisis management system*, procedures that have proven to be safe and effective, should not be maligned because they share a single common element (lying prone) with the typical reactions of untrained staff that have been involved in deaths/injuries in the past. Although some specific procedures most likely should be banned, (for example one man "basket hold" take-downs with the arms under the body) law makers, advocates and administrators must work with clinicians to ensure that *time-tested, safe, clinically effective, humane* procedures are not withheld from individuals who may desperately need them.

*Please see our [white paper](#) on the role of using a foam mat and why we believe it is negligent, ineffective, and inhumane to do so without one.