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The Conditions for Ethical Chemical Restraints

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ABSTRACT:

The practice of medicine frequently involves the unconsented restriction of liberty. A person, at the behest of a physician, can have their arms and legs strapped to a bed or be sedated, all against their will. The reasons for unilateral liberty restrictions are typically that being confined, strapped down, or sedated are necessary to prevent the person from harming themselves or others. In this paper, we target the ethics of chemical restraints, which are medications that are used to intentionally restrict the mental states associated with the unwanted behaviors, and are typically not specifically indicated for the condition for which the patient is being treated. Specifically, we aim to identify the conditions under which chemical restraints are ethically permissible. It is wrong to assume that what is morally true of physical restraints is also true of chemical restraints. Our aim is thus to identify the conditions under which chemical restraints are permissible while distinguishing these conditions from those of the application of physical restraints.

KEYWORDS: Chemical restraints; sedation; consciousness; liberty; physical restraints

Introduction

The practice of medicine frequently involves the unconsented restriction of liberty. A person, at the behest of a physician, can have their arms and legs strapped to a bed or be sedated, all against their will. The reasons for unilateral liberty restrictions are typically that being confined, strapped down, or sedated are necessary to prevent the person from harming themselves or others. Restricting liberty is the entire point: if the person were to use their liberties, they would inflict harm, either upon themselves or others. Often in practice, however, these methods of restricting liberty are treated as morally equivalent, as if any liberty restriction aimed at preventing harm to themselves or others is equally justifiable.

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These liberty restrictions, while governed by federal regulations and professional standards, occur outside the immediate purview of the courts of law.¹ That is, patients experiencing liberty restrictions within medical settings rarely have the ability to challenge those restrictions while they are being applied.

In this paper, we target the ethics of chemical restraints, which are medications that are used to intentionally restrict the mental states associated with the unwanted behaviors, and are typically not specifically indicated for the condition for which the patient is being treated. Specifically, we aim to identify the conditions under which chemical restraints are ethically permissible. Others have done so for physical restraints, which are devices applied to the patient to limit their movement. But it is wrong to assume that what is morally true of physical restraints is also true of chemical restraints. Our aim is thus to identify the conditions under which chemical restraints are permissible while distinguishing these conditions from those of the application of physical restraints.

Our argument hinges on the degree to which chemical restraints intrude upon one's liberty. Physical restraints are obviously highly intrusive—they prevent one from moving their arms and legs and body. On the face of it, chemical restraints are similarly intrusive, as they manipulate a person's mental states. But we claim that chemical restraints are often far less intrusive than physical restraints. Physical restraints intrude upon a basic liberty; some chemical restraints similarly intrude while others are less liberty intrusive. This difference in liberty intrusiveness hinges on the distinction between *being conscious* and *being in a particular conscious state*. Intruding upon a particular conscious state is less intrusive than intruding upon one's being conscious at all. This difference in intrusiveness has important implications for the permissibility of chemical restraints. Specifically, it motivates the ordering of restraints such that chemical restraints that intervene on a patient's particular conscious state should be the first line restraint over the more intrusive chemical restraints and physical restraints. However, what follows isn't intended to overturn the current practice of restraint application. Anecdotally, chemical restraints that merely calm a person are often the first line restraint, especially in emergency medicine and emergency medical services (EMS). Physical restraints, when applied,

¹ Though often the use of restraints for psychiatric patients is regulated by laws protecting patients undergoing treatment for mental illness.

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are typically conjoined with *some* chemical restraint. What follows is thus intended to provide a moral justification for a practice that is already quite common, and to morally defeat practices of restraint application that deviate from the present recommendations.

In the first section, we briefly introduce the reasons for chemical restraints and the ways and settings in which they are commonly used. In the second section, we describe the conditions under which physical restraints are permissible. Although few have analyzed the ethics of physical restraints, Crutchfield et al. argue for necessary and sufficient conditions for their application. Our argument uses Crutchfield et al.'s analysis as a starting point. They argue that physical restraints undermine a basic liberty. We argue in the third section that chemical restraints sometimes do intrude upon a basic liberty and sometimes they don't. This difference in liberty intrusiveness implies differences in the permissibility of the different restraints, which we discuss in the fourth section. We finish with some recommendations for restraint application.

Chemical Restraints

Chemical restraints are used widely in medicine. Much has been written on their appropriateness, safety, and perception. Often these discussions treat chemical and physical restraints as morally equivalent, which is a mistake. Additionally, while federal regulations and professional standards characterize both chemical and physical restraints as extraordinary practices requiring efforts to decrease their frequency and significant oversight, they are often equated (Currier, 2003; Guerrero & Mycyk, 2020). For example, the Joint Commission Standards on Restraint and Seclusion do not distinguish between physical and chemical restraints. Each standard uses the phrase "restraint or seclusion" as if chemical and physical restraints (and seclusion) are morally equivalent and defers on the appropriateness of each to physician judgment (*Joint Commission Standards on Restraint and Seclusion*, 2011). Other professional recommendations and authors also fail to recognize a moral distinction between physical and chemical restraints, while still recommending that the use of each be decided by the treating physician based on efficacy and minimization of harm in individual patients (American College of Emergency Physicians, 2020).

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Nonetheless, there remains significant definitional and conceptual confusion in the clinical literature regarding what sort of medication interventions constitute a chemical restraint. The Centers for Medicare & Medicaid Services (CMS), an administrative federal agency within the United States Department of Health and Human Services, defines a chemical restraint as, “A drug or medication when it is used as a restriction to manage the patient's behavior or restrict the patient's freedom of movement and is not a standard treatment or dosage for the patient's condition.” (Centers for Medicare & Medicaid Services, 2008). For conceptual clarity and in alignment with the definition used by CMS, we consider a “chemical restraint” to be medications that are primarily being used to intentionally restrict the mental states associated with unwanted behaviors, and are not specifically indicated for the condition for which the patient is being treated. The distinction between chemical restraint and treatment is important because the conditions for the ethical use of chemical restraints may be different than those for regular medical treatments indicated for a particular condition (for example, informed consent and medical appropriateness may be sufficient for treatment).

Medication interventions are “indicated” as a treatment for a particular recognized medical condition when it is used for the purpose of treating that condition and at dosages with evidence of efficacy in doing so. In contrast, medication interventions which constitute a chemical restraint either do not treat the medical condition in question or are given in dosages beyond necessary to treat the condition in order to restrict mental states associated with unwanted behaviors.

Interventions that are primarily intended to and act as treatments would not, under our definition, count as restraints. Giving an antipsychotic to a person who is acutely psychotic because doing so would treat the disease, but has the additional effect of restricting their mental states and/or movements, would not count as a chemical restraint. The same is true of pain-induced agitation or combativeness. Giving a person in severe pain a pain medicine because they are in pain is not a chemical restraint, even if a secondary effect of the medicine is that they are restricted in mind or body.

The following clinical example helps to clarify the distinction, and high potential for ambiguity, between chemical restraint and treatment. A 26 year-old man is admitted to an inpatient psychiatric unit for decompensated schizophrenia characterized by persecutory

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delusions. While hospitalized, the patient comes to believe that hospital staff is poisoning his food. As a result, he begins verbally threatening the staff and attempts to hit them with his food tray. After failed verbal attempts at de-escalation, the patient's attending psychiatrist orders that the patient receive over his objections a routine combination of three medications to eliminate the ongoing threat of harm to the patient and others on the unit. Specifically, a one-time intramuscular injection is ordered which includes the antipsychotic haloperidol at 5 mg, the benzodiazepine lorazepam at 2 mg, and the antihistamine diphenhydramine at 50 mg. After receiving the injection, the patient becomes calmer and returns to his room.

Closer examination of the medication choices and dosages clarify the intentions of the attending physician and whether or not the intervention was a chemical restraint. Benzodiazepines and antihistamines have no efficacy in treating schizophrenia. Because they were utilized to modify the mental state associated with aggressive behavior by directly sedating the patient, they both would clearly qualify as chemical restraints. The antipsychotic haloperidol, however, is efficacious in decreasing the frequency and intensity of delusional beliefs in schizophrenia. As a result, while the medication affected the patient's mental state, the antipsychotic was not a chemical restraint but rather an appropriate treatment indicated for his condition.

Alternatively, consider that instead of haloperidol, the attending physician ordered an alternative antipsychotic called olanzapine at 20 mg. Olanzapine is also efficacious in decreasing the frequency and intensity of delusional beliefs in schizophrenia but only requires 5-10 mg to achieve this effect. Instead, the attending psychiatrist ordered 20 mg because at the higher dose, olanzapine is highly sedating. Instead of only returning to his room in a more calm state, the patient is unable to stay awake for the next 8 hours. In this scenario, the antipsychotic would be both a treatment and a chemical restraint and subject to the ethical conditions of the latter in order to justifiably be given.

Types of Chemical Restraints

Distinguishing between pharmacological treatment of physical or mental illness and pharmacological intervention with the primary intent to restrict freedom of movement or to

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impair the patient's ability to interact with their surroundings is necessary to clarify the appropriate ethical conditions applicable to each. The present purpose is to draw out that distinction and leverage it to recommend an ordering of the ethical permissibility of restraints.

For the present purpose, however, it is important to recognize the morally relevant differences between two different types of uses of chemical restraint. One typical type of use is for the patient being treated with critical care medicine. Such a patient may be on a ventilator, extracorporeal membrane oxygenation (ECMO), dialysis, or be receiving some other physically uncomfortable treatment. Such patients may additionally be administered propofol for deep sedation, so that (a) they cannot self-remove the devices or treatments and (b) they are more comfortable while receiving the treatment. Often these treatments will be continuous and lasting for long periods of time. Furthermore, deep sedation is often also administered concurrently with physical restraints, such as devices strapping the patient's wrists to the bed. Thus, it is not uncommon for a patient in critical care to be deeply sedated and physically restrained for days at a time.

Sedation in the intensive care unit (ICU) is often deep. There are various scales to measure level of sedation, but when propofol is used in the ICU it induces sedation that puts the patient to sleep such that they are unrousable to physical stimulation (Chernik et al., 1990; Detriche et al., 1999; Ely et al., 2003a, 2003b; Malviya et al., 2002; Némethy et al., 2002; Rasheed et al., 2019). Deep sedation is more invasive than making someone sleep. Deep sedation "turns the lights off." The patient under deep sedation who is unresponsive to physical stimulation is plausibly no longer conscious. As sedation is withdrawn or "lifted", consciousness is recovered.

There are of course multiple accounts of what properties must be present for a person to be conscious. Regardless of which of these one adopts, being conscious is not equivalent to being in a particular conscious state. One way of showing the distinction is that being conscious is necessary for being in a particular conscious state, but being in a particular conscious state is not necessary for being conscious. After all, one could be conscious, but in a different particular conscious state. Experiencing the prick of the needle is not necessary for being conscious, but being conscious is necessary for experiencing the prick of the needle. The lights being on is distinct from them having a particular hue. With this distinction in hand, the effects of deep

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sedation, such as what is commonly used in ICUs as a way of restraining the patient, are that it not only changes the hue—being in a particular conscious state—but also turns off the lights.

The other commonly administered type of restraint is to control agitation or combativeness. Often the reasoning is that chemically restraining an agitated or combative patient is necessary to prevent the patient from harming themselves or others. Moreover, this type of chemical restraint is typically administered in situations of emergency, whether that emergency occurs in a pre-hospital setting, the emergency department, elsewhere in the hospital, or in a nursing home. For example, a patient who presents to the emergency department with, among other conditions, drug-induced agitation or combativeness such that their behavior is a threat to themselves or others may be chemically restrained with ketamine, an antipsychotic, or a benzodiazepine. Alternatively, it may be that the patient’s agitation and combativeness are the result of severe pain. The effect of this restraint will be that the patient’s agitation and combativeness are decreased, preventing the threatening behavior. The patient may be calm but awake or be sedated to the point of being rousably asleep. Importantly, the restraint won’t be so restrictive that they become unconscious.

For the present purpose, this is the relevant point. The patient who is emergently restrained with ketamine, antipsychotics, or benzodiazepines is less restrained than the critical care patient restrained with propofol. Specifically, chemical restraints using propofol, for example, affect *whether* a person is conscious; chemical restraints using antipsychotics or benzodiazepines affect *what particular conscious state one is in*. Haloperidol changes the hue; propofol turns out the lights. We argue this distinction is morally relevant. Once this morally relevant distinction is recognized, it can be used to recommend an ordering of restraints, or a “first line” restraint.

Physical Restraints

Although it is a mistake to assume that chemical and physical restraints are morally equivalent, they do both significantly intrude on a person’s liberty. Thus, looking to accounts of the conditions for the ethical administration of physical restraints can be helpful. Crutchfield et al. provide necessary and sufficient conditions for the ethical application of physical restraints

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(Crutchfield et al., 2019). Their account rests on the notion that physical restraints—using mechanical devices to restrict a person’s movement—restrict a basic liberty. They adopt Pettit’s account of what makes a particular liberty basic (Pettit, 2008). A basic liberty, on this view, is one that is required for living the life of a free person. Some liberties are not basic: one may have the liberty to drive a Ford, but driving a Ford is not required to live the life of a free person. But for Crutchfield et al., the liberty to move one’s arms how one wishes is required to live the life of a free person. Physical restraints intrude upon this liberty. Thus, physical restraints restrict a basic liberty.²

For some people, maintaining a basic liberty might reasonably be expected to be more valuable than any goal that medical treatment aims to achieve. For example, a reasonable person may value retaining their basic liberty more than they value continued life—if living requires sacrificing basic liberties, then they choose death.³ Furthermore, since moving one’s arms is a basic liberty, restricting this liberty is likely to constitute a harm. Thus, when weighing the risks, benefits, burdens, and alternatives, this harm must be entered into that evaluation. These considerations inform two of their other conditions: that physical restraints be the least liberty restrictive means of achieving the intended aim and that they be medically appropriate.

Additionally, the administration of physical restraints is an intervention like any other. Standard conditions for informed consent apply. This is to say that physical restraints are unethical unless one has obtained informed consent for them (or a standard exception to informed consent applies). Crutchfield et al.’s conditions for the administration of physical restraints are thus that (i) they are the least liberty restricting means of achieving the intended

² Crutchfield et al. clearly have in mind wrist straps, or straps that bind a person’s wrists to their bed. But there are many types of physical restraints. Devices that restrain one’s fingers (mittens) and long tubes that prevent the bending of elbows (“No-nos”) are two common types. But these, like wrist straps, also restrict basic liberties, as presumably a person who has fingers but is prevented from using them is being prevented from living a free life.

³ Recall Charlton Heston at meetings of the National Rifle Association saying, “I’ll give you my gun when you pry it from my cold, dead hands.” There are clearly very many people who hold similar beliefs about the relative value of basic liberties and continued life. In clinical scenarios, similar reasoning is common—these authors have heard numerous family members say of a patient that they would rather die than spend one second on a ventilator.

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aim; (ii) they are medically appropriate; and (iii) that one has obtained informed consent for their application.

Liberty and Restraints

It is intuitive that people have liberties related to cognition and consciousness. Some have argued even that intruding upon one's cognition in a way that undermines the person's mental self-determination should be criminally punishable (Bublitz & Merkel, 2014). This may be extreme, but it captures the intuitive notion that people have a right to cognitive integrity in roughly the same way they have a right to bodily integrity. We regard intrusions upon bodily integrity—assault—as criminally punishable (Bublitz, n.d.; Bublitz & Merkel, 2014; Douglas, 2014; Douglas & Forsberg, 2021; Ienca & Andorno, 2017; McCarthy-Jones, 2019; Ryberg, 2017). Perhaps we should also regard intrusion upon cognitive integrity in the same way.

There is an extensive literature on cognitive integrity, or cognitive liberty. The consideration relevant to the present purpose is whether intrusions upon consciousness (and by extension, cognition) are intrusions upon a liberty.

Above we distinguish being conscious from being in a particular conscious state. We think the former is a basic liberty; the latter is not. If we adopt Pettit's idea that a basic liberty is a liberty that is required to live the life of a free person (as Crutchfield et al. do), then being conscious is very clearly a basic liberty. One can't live freely if one is not conscious. Living a free life requires many things, among them the abilities to make choices, form preferences, associate with others, and express one's thoughts. All of these abilities presuppose that one is conscious.

The same is not true of being in a particular conscious state. Suppose that one is in conscious state that p , which is exclusive of being in conscious state that q . Is being in conscious state that p rather than conscious state that q a basic liberty? Probably not, because one is likely able to live a free life regardless of which conscious state one is in. For example, suppose a person is in a conscious state that the apple appears red. This is exclusive of being in a conscious state that the apple appears green (or any other appearance of non-redness). The apple appearing red is not required to live a free life. Even if living a free life requires the ability to eat an apple

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(which is itself implausible), the apple appearing red is still not required to living a free life. People eat apples that appear green to them all the time.

Or, consider an example from the emergency department. Suppose a person is in a state of drug-induced psychosis which includes being in the conscious state that the nurse is a government agent set on destroying humanity. Being in the conscious state that the nurse is a government agent set on destroying humanity is not required for the patient to live a free life. Failing to be in that conscious state would not *necessarily* undermine the patient's ability to live a free life. Unlike being in the particular conscious state that the nurse is a government agent set on destroying humanity, being conscious *is* necessary for living a free life.

Being conscious is a basic liberty, being in particular conscious state is not. Thus, interventions that intrude upon whether one is conscious intrude upon a basic liberty; and interventions that intrude upon the content of a particular conscious state do not necessarily intrude upon a basic liberty. This is not to say that intrusions upon a particular conscious state don't intrude upon one's liberty—they do, but not necessarily upon a basic one. Such interventions are still intrusive, just less so than those interventions that intrude upon whether a person is conscious.

Interventions that merely intrude on a particular conscious state can't generally be intrusions upon a basic liberty, at least in a freedom-undermining way. Our particular conscious states and their contents are under regular influence from other factors. For example, perceptual experience is cognitively penetrable by one's other cognitive states such as beliefs and desires, which are of course subject to external influence (Stokes, 2013). Even more directly, the color a thing is represented as being—the content of a particular conscious state—is influenced by the color of the frame. Framing effects are also common in moral judgment (Sinnott-Armstrong, 2008). The language used to describe potential consequences significantly affects moral judgments (Tversky & Kahneman, 1981). Our moral judgments—the contents of particular conscious states—are particularly prone to influence from others. Morally irrelevant factors can have a significant influence on whether one makes consequentialist or deontological judgments (Greene, 2008). Randomly finding cash on one's walk will make one more likely to help a stranger shortly thereafter (Isen & Levin, 1972). Slight manipulations of one's environment

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might “nudge” one into the belief with the content that one prefers an apple (Thaler & Sunstein, 2009).

The lesson of nudging and framing effects and all the other ways in which the contents of particular mental states are subject to external factors is not that these effects occur rarely or only when another intends them. The lesson is that they happen all the time and that they will occur regardless of the circumstances. The contents of particular conscious states are not up to us in the way some think. Advertisers—professional intruders upon particular conscious states—have known this for a long time. Nevertheless, Ienca and Adorno write (p. 1):

While the body can easily be subject to domination and control by others, our mind, along with our thoughts, beliefs and convictions, are to a large extent beyond external constraint.

Yet, with advances in neural engineering, brain imaging and pervasive neurotechnology, the mind might no longer be such an unassailable fortress.

But this isn’t quite right. Our minds and the thoughts in them are well within the reach of external constraint, and they always have been. Moreover, even if they weren’t subject to others’ influence, we would still lack control over them in the same way we have control over our bodies. It is no problem for one to move one’s body to get a cup of coffee, if one wants to do so. But one can’t in a similar way just will themselves to believe that the sky is green or that Wednesday is the day before Tuesday. The fact that the contents of our mental states are not entirely up to us runs contrary to one source of justification for cognitive liberty—the right to mental self-determination (Bublitz & Merkel, 2014; Douglas & Forsberg, 2021).

So, we’ve never had the same sort of control over mental states that we do our bodies. If this fact is sufficient to undermine basic liberty, and so freedom, then we never had either to begin with. But this position is stronger than we need. For the present purposes, it doesn’t matter whether general considerations about cognitive liberty confer basic liberty status upon being in particular conscious states. There are other reasons to think that chemical restraints upon particular conscious states don’t intrude upon a basic liberty. One of these reasons is that even if we generally have the ability of mental self-determination that some imagine, the sort of states that chemical restraints intrude upon are not the sort of states that one self-determines. Presumably people for whom chemical restraints might be medically appropriate did not freely choose to be in the mental state they find themselves in. The “agitated” or “combative” patient

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likely didn't freely choose to be in that state. It's thus not necessary that interventions on that particular state constitute the significant loss of liberty, and especially the loss of a basic one. Even if it's true that one might have some control over whether they want to buy a Big Mac rather than a Whopper until a slick McDonald's ad intrudes and gets them to buy the former, people don't typically choose to be agitated rather than calm.

If interventions that intrude on a particular conscious states are intrusions upon a basic liberty, and it's true that intrusions upon basic liberties undermine the living of a free life, then we may not have much mental freedom to begin with. We think the best response is thus to say that chemical restraints that are merely upon particular conscious states are not intrusions upon a basic liberty. *But this doesn't mean that such intrusions aren't liberty intrusions, nor that they aren't morally problematic.* Degree and means of intrusion matter, too (Douglas & Forsberg, 2021). Interventions on the contents of particular conscious states might be wrong to greater or lesser degrees based on whether and to what degree they bypass reason, use trickery, or use pressure to induce the conscious state (Noggle, 2022).⁴ In what follows, the extent to which a restraint bypasses reason figures into a condition for permissible chemical restraints.

The Conditions for Ethical Application of Chemical Restraints

The above distinction between the liberty intrusiveness of interventions on particular conscious states and being conscious is important for the ethics of chemical restraints for several reasons. One reason the distinction is important is that if interventions upon whether one is conscious are basic liberty intrusions, but interventions on particular conscious states are not, then chemical restraints that "turn off the lights," such as propofol, *are* morally equivalent to physical restraints but chemical restraints like benzodiazepines are not morally equivalent. This similarity warrants adopting Crutchfield et al.'s conditions for physical restraints.

⁴ Chemical restraints, however, need not do any of these things. Douglas (2022) has argued that arguments that "nudging" engages rational capacities (Levy, 2019; Schmidt, 2019) extend to nonconsensual neurointerventions such as some nonconsensual psychiatric interventions, though this class may not include chemical restraints. If Douglas is right, however, and it's also true that the antecedent arguments are sound, then chemical restraints may not bypass reason, even indirectly.

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These conditions may be justified for physical restraints, and there are good reasons to think that they apply equally for chemical restraints. Both types of restraints ostensibly aim at preventing harm to oneself or others. They do differ in where in the causal chain they prevent the harm. Physical restraints intervene further downstream, whereas chemical restraints intervene upstream in the chain events that leads to the problematic behavior. But this difference is purely metaphysical, not moral.

A second reason the distinction between the comparative liberty-intrusiveness of intervening on being conscious and intervening on being in a particular conscious state is important is that it implies a significant difference in disvalue associated with the different types of chemical restraint. The moral disvalue associated with liberty intrusions increases with intrusiveness. There is more disvalue associated with intruding upon one's liberty to associate, for example, than there is in intruding upon one's property to read the electricity and water meters. If that's true, then since interventions that intrude upon whether one is conscious intrude upon a basic liberty, the disvalue of such intrusions is greater than the disvalue associated with other liberty-intrusive interventions, such as those that intrude upon a person's particular conscious state. This means that chemical restraints that intervene on whether one is conscious are more disvaluable than chemical restraints that intervene on a particular conscious state.⁵

This difference in moral disvalue has implications for the conditions for the ethical administration of chemical restraints. One of these implications is that an individual may find the significant disvalue associated with basic liberty intrusions to be too much to bear for the sake of achieving some treatment goal. One can't simply presume that the disvalue associated with a basic liberty intrusion is outweighed by the value some other intervention is intended to achieve. Lots of people might find sacrificing basic liberty intrusions as just too much to bear. This is one of the reasons that Crutchfield et al. use to motivate their conditions for ethical administration of physical restraints. And it is why informed consent for these basic liberty intrusions is necessary.

A second implication is that it will take the achievement of greater value to balance out the disvalue associated with chemical restraints like propofol than it will take to balance out the disvalue associated with chemical restraints like lorazepam. The benefits of deep sedation have

⁵ This all presumes the commonly held view that liberty is at least *pro tanto* morally valuable.

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to be greater than the benefits of a benzodiazepine in order to compensate for the greater moral costs. But these calculations are packed into the notion of medical appropriateness. Because restraints like deep sedation are so disvaluable, for them to be medically appropriate, the counterbalancing value of them must be great.

The above considerations warrant the claim that chemical restraints that affect whether a person is conscious, such as deep sedation, have the same necessary and sufficient conditions for ethical administration as physical restraints. Because of this it is reasonable to adopt Crutchfield et al.'s conditions. But the above considerations also warrant the claim that conditions for ethical chemical restraints that intervene on whether a person is conscious are different from the conditions for ethical chemical restraints that *merely intervene on the particular conscious states of the patient*. When used as restraints, propofol and lorazepam fall into different moral buckets.

For all medical interventions, providers are obligated to obtain informed consent, unless an exception to informed consent applies. There is no reason to think that chemical restraints of any kind, in and of themselves, are not subject to this obligation. However, those situations in which chemical interventions on the particular conscious states of the patient are candidate interventions are often in cases in which rapid intervention is required to save life or function. This is to say that many situations in which chemical restraints are candidate interventions are emergencies. Thus, in many of these situations the emergency exception to informed consent will apply. For example, a patient presenting to the ER who is significantly intoxicated and combative and refusing emergently needed treatment (for, say, an open fracture resulting from jumping from a third story balcony) does not need to provide informed consent for treatments that are necessary to save life or function.

Sometimes chemical restraints for agitated patients are administered in settings in which an emergency can be anticipated, such as in nursing homes. For any patient and any condition, it is wrong to withhold treatment such that doing so fails to prevent an anticipated emergency so that one need not be obligated to obtain informed consent. Suppose a patient with dementia is in a nursing home and is known to become agitated and combative toward staff. Also suppose that there are multiple interventions that may effectively prevent this agitation, but are burdensome to the staff. But staff don't administer these interventions and instead wait for the agitation to present and the patient to become combative, at which point they emergently administer

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benzodiazepines to restrain the patient, and do so without obtaining informed consent. It is wrong in any setting to wait for an emergency so that informed consent becomes unnecessary. In this case, the staff's actions/omissions may not violate the informed consent condition, but they do violate the first condition, that the restraints be the least liberty-restricting means of achieving the intended aim.

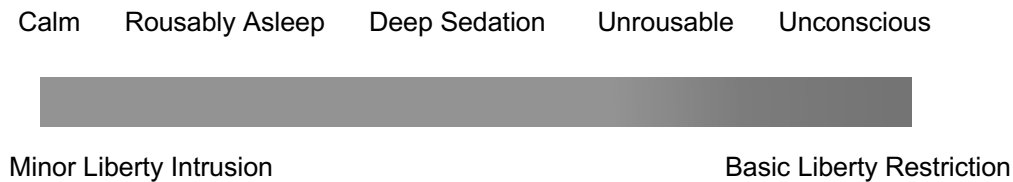
In the above case, the chemical restraints are not the least liberty-restricting means of achieving the intended aim. The intended aim is to keep the patient out of the particular conscious state that leads to the combative behavior. This means that preventing the agitation is very likely to be less intrusive upon the patient's liberty, as it likely includes some environmental intervention or medication that does not so drastically alter the patient's mental state. Of course, there are some cases in which the *only* intervention that achieves the aim is chemical restraint. But in those cases, because it's the only intervention that achieves the aim, it is by definition the least liberty-restricting intervention.

The condition that the intervention be the least liberty-restricting means is also relevant in the emergency department. Suppose a patient emergently needs to be in a different particular conscious state and the physician administers olanzapine for chemical restraint. Sometimes when this occurs, the patient's particular conscious state changes—maybe they become calmer—but then they slip into a deeper level of sedation such that they are unconscious. As they slip into deeper sedation, their liberty is more restricted. The intervention is gradually more intrusive. At some point it reaches a point such that the intrusion is upon a basic liberty. If the patient's particular conscious state could have been intervened upon without slipping into deeper sedation, then the chemical restraint violates the first condition. Haloperidol, a less sedating antipsychotic, would be less likely to do so than olanzapine, and therefore, less likely to intrude upon a basic liberty. There is, of course, no clean and neat cutoff at which point one violates the condition. Consciousness is more scalar than that. The point is rather that the more intrusive a given intervention is, the closer it gets to violating the condition that the intervention is the least liberty-restricting means of achieving the intended aim. Being put rousably asleep is less intrusive than being deeply sedated, but more intrusive than being made calm but awake (Figure 1). This has practical implications: physicians should err on the side of preserving liberty by providing initially lower doses of chemical restraints. In administering a chemical restraint, one

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should always start on the left-most medically appropriate end of the scale below. If the doses need to be increased, then as one administers higher and higher doses, one continues to satisfy the condition, as each higher dose becomes the least liberty-restricting means of achieving the intended aim. If the only interventions that will achieve the intended aim are on the right end, then those are the least liberty-restricting means.

Figure 1: Scale of chemical intervention by liberty intrusiveness



Chemical restraints must be the least liberty-restricting means of achieving the intended aim and informed consent for them must be obtained. But another condition is that they be medically appropriate. Like the informed consent condition, this is a condition on all treatments. In the case of physical restraints, the balance of evidence suggests that they are not beneficial, and may even be quite harmful. If so, then the situations in which physical restraints are medically appropriate will be few and far between, because the medical appropriateness of an intervention is a matter of the proportion of the benefits to the burdens.

The evidence of the benefits and burdens for chemical restraints is quite a bit thinner. It is thus more difficult to call into question the medical appropriateness of chemical restraints than it is to call into question the medical appropriateness of physical restraints. On the one hand, it seems obvious that for some patients being in a different particular conscious state or deeply sedated is a great benefit to them. But on the other hand, there is growing evidence that, for example, deep sedation in the ICU has longer-term adverse effects (Croxall et al., 2014; Treggiari et al., 2009). In any case, whether a given intervention is medically appropriate depends entirely on the proportion of benefits to burdens and risks.

So far, the conditions for the ethical administration of chemical restraints that intervene on a particular conscious state are the same as those that intervene on whether one is conscious.

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However, for restraints that intervene on a particular conscious state, the situations in which these conditions are satisfied will be more frequent. First, they are less liberty-intrusive, which means that, other things being equal, they inflict less harm. And because they are, again, other things being equal, less harmful, it takes less benefit to outweigh this harm. Second, they are more likely to be candidate interventions in emergencies, which means that the obligation to obtain informed consent will be more frequently excepted. But there is an important fourth condition that holds for interventions upon a patient's particular conscious state but not for interventions upon whether one is conscious.

Chemical restraints that intervene on a particular conscious state do not intrude upon a basic liberty. But that does not mean that such interventions shouldn't take into account the patient's liberty and how valuable cognitive liberty is to them. When interventions upon a particular conscious state are administered, it is critical that their primary aim is to put the patient in a better position to be autonomous and self-determinative. The goal of interventions upon a patient's particular conscious state is to induce some other conscious state. It is important that the other conscious state be one which is more self-determinative and autonomous, rather than one that the physician simply thinks the patient should be in.

To do so is to promote the patient's liberty interests, which figure into considerations of their best interests. Furthermore, it is not the role of a physician, or anyone else in medicine, to medically manipulate a person's conscious states beyond what is necessary to prevent harm to self or others. Interventions that instead aim to promote the person's ability to use their cognitive liberty, even if one objects to what that liberty will be used for, promote the patient's best interests. People have strong interests in even non-basic liberties. Thus, it is reasonable for the permissibility of chemical restraints upon a particular conscious state to be conditional on whether the restraint aims to promote the patient's liberty, once the threat of harm is mitigated.

For example, the medical staff may have good evidence from previous encounters that an agitated or combative patient intoxicated by methamphetamines will, once the capacity to use their cognitive liberties is returned, simply refuse further medical treatment or leave the hospital against medical advice. In such cases, the medical staff may feel inclined to administer a more liberty-intrusive chemical restraint, such that the patient lacks the ability to use these cognitive liberties. For instance, administering intrusive chemical restraints to full sedation may allow the

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patient to be admitted to the hospital and be treated with antibiotics for endocarditis associated with their intravenous drug use, even if the staff knows full well that the patient would not agree to that once they are able to use their cognitive liberties. The staff might even reason that to do so is to promote the patient's best interests. But this reasoning is wrong, because it ignores the significant disvalue associated with liberty intrusions and what these intrusions mean for the patient's best interests. Instead, the permissibility of chemical restraints hinges on whether they are necessary until their capacity to use their cognitive liberties returns. In this case, that would only be until the effects of acute intoxication subside. Imposing this condition on the permissibility of administering chemical restraints that intervene on a particular conscious state would allow the administration of restraints in these situations, but it would prohibit restraints that aim to go further.

Or, consider an example wherein a patient is given a drug which makes them happier, which makes them more agreeable, which makes them more likely to accept a medical intervention. Though not a basic liberty intrusion, it still might be wrong. Recall that such intrusions might be more or less wrong based on the degree to which they bypass reason, use trickery, or use pressure. What these types of cases point to is a fourth condition: chemical restraints must promote the patient's rational capacities. The restraints must be such that the patient is in at least as good a position to exercise their rational capacities to make medical decisions.⁶ This condition respects the notion that interventions upon the mind that subvert the processes involved in rational thinking and mental self-determination are wrong. If intruding upon a person's mental life is wrong to the extent that the intrusion undermines these processes, then chemical restraints that intrude upon a particular conscious state and bypass the patient's capacity to reason about other medical interventions are wrong. This condition would prohibit those restraints that might be the least liberty-restricting medically appropriate means of achieving the intended aim, but that also cause the person to be less considerate, less rational, or more prone to cognitive error. It would also prohibit restraints that are administered merely to prevent a patient from leaving AMA once her rational capacities are returned.. However,

⁶ On our view, this stated condition implies that the restraints should also not coerce a patient. Promoting a patient's rational capacity requires not coercing them.

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restraints that help to resolve agitation would satisfy this condition, because agitation undermines the patient's rational capacity.

This condition does not apply to chemical restraints that intervene on whether a patient is conscious. For chemical restraints like deep sedation, the worry about rational capacities doesn't apply, because one intent of the restraint, among others, is to shut off the capacity to reason.

Practical Applications

The conditions for ethical administration of any chemical restraint are that

- (i) they are the least liberty restricting means of achieving the intended aim;
- (ii) they are medically appropriate;
- (iii) one has obtained informed consent for their application.

If the chemical restraint intervenes merely on a particular conscious state, an additional condition applies:

- (iv) they promote the patient's rational capacity.

Although there is significant overlap between the conditions for permissible physical restraints and permissible chemical restraints, adhering to them will guide the administration of chemical restraints in a way that morally problematic restraints will be avoided.⁷ But the conditions will permit restraints in those cases where they are most needed. Moreover, though there is significant overlap, the range of situations in which the two different types of restraints are permissible will be very different.

The above conditions merely separate the ethical chemical restraints from unethical chemical restraints. They provide necessary and sufficient conditions for permissible restraints. They establish a threshold. They do not provide a method of evaluating the moral properties of chemical restraints that fall on either side of that threshold. For restraints that fail to meet the conditions, we have nothing to say about how unethical they are, just that they are unethical. For

⁷ It is clear, however, that (i) is doing the heavy lifting.

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example, someone might be given a drug so that they not only comply with a procedure that the medical staff wants to perform, but also so that they are alert during it. The restraint in this case is wrong, because it fails to satisfy the conditions (likely all of them). But we make no claim as to how unethical the restraint is, especially as compared to other interventions that also fail to satisfy the conditions. The same is true of all of the restraint applications that satisfy the conditions; the conditions fail to evaluate the comparative moral value of permissible restraints.

Importantly, our account does not tie the degree of liberty intrusion to degree of wrongness. Although degree of restraint is a matter of degree of liberty intrusion, on our view neither of these dimensions is necessarily associated with degree of wrongness. Thus, it could be that some less liberty intrusive chemical restraints are morally worse, if, for example, they are less medically appropriate. So, just because a restraint is more intrusive than an alternative, it doesn't follow that it is less permissible.

Some might object that these conditions are too difficult to adhere to. Maybe it's difficult to obtain informed consent, or difficult to more carefully dose benzodiazepines or other sedating agents. But difficulty of doing what is morally right is never an excuse to do something morally wrong. If it is impossible to satisfy an obligation, then one is excused. But if it is merely difficult, then one isn't so excused. The same could be said for obligations the satisfaction of which is inconvenient. Inconvenience is no excuse. If it's too hard to treat a patient without impermissibly restricting their liberty, then one should not treat anyone at all.

We have argued that there is a morally relevant distinction between physical restraints and chemical restraints. They are not morally equivalent, contrary to how they are typically treated in medicine. We have also argued that there are morally relevant distinctions between different types of chemical restraints. These distinctions suggest that, other things being equal, the most ethical restraints are chemical restraints that change what particular conscious state a person is in. Chemical restraints that change whether a person is conscious restrict a basic liberty, as do physical restraints. Thus, these types of restraints are worse, so long as all other factors are equal.⁸

⁸ Some might be skeptical of *ceteris paribus* clauses. But they are extremely common not only in theorizing about interventions of all types, but also in the provision of interventions themselves,

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There are, however, several ways in which other things won't be equal between them. One way they may not be equal is if the other conditions for the ethical permissibility of restraints (informed consent, medically appropriate) vary. For example, it's plausible that a person would prefer to be unconscious over being physically restrained, or even over being forced out of a particular mental state.

Alternatively, the medical appropriateness between the different types of restraints may vary. This is especially relevant when weighing the different types of chemical restraints against each other. For example, an extremely combative patient in the emergency room may maintain the violent and problematic behavior even after lower doses of benzodiazepines, which undermines their medical appropriateness and suggests that a more restrictive chemical restraint is more medically appropriate. But that a patient may prefer one type of restraint over another or that there are some cases in which one type of restraint is more medically appropriate than another doesn't undermine the above analysis. Rather, the examples just show the analysis in action.

Clinical Applications

The practical application of the above is that the *first line restraint should be chemical restraints that only change the particular conscious state the person is in*. When a physician is considering the application of restraints, she should have positive reasons to move to the next line of intervention. Reasons to move to the next line are as above: the first line is not medically appropriate, incompatible with patient preferences, or fails to promote the patient's rational capacities. But in the absence of such reasons, the best restraint is the chemical restraint that merely changes the particular conscious state the person is in.

There might be some settings in which it is frequently better to move to a second line restraint. One of these settings is the emergency room, and occurs in situations similar to the above, in which the patient doesn't respond to the first line. In those cases, the physician should move to more liberty-restricting measures, so long as the other conditions for permissible

including in medicine. Simply, it would be practically impossible to evaluate different interventions without controlling other variables.

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application of restraints are satisfied. But it would be wrong to jump right to a more liberty-restricting restraint without first trying the first line, unless there was some medical reason to skip the less liberty-intrusive first line.

EMS

Suppose EMS arrives to the scene of a postictal woman who is agitated and combative. The paramedics wait some time, and the combativeness doesn't improve. The first line chemical restraint is plausibly ketamine. But instead, the paramedics jump right to a high dose of midazolam. The patient becomes calm, sleepy, at which point they put her in the ambulance and take her to the hospital, whereas had they simply waited she may have not had to go at all. In this case, the paramedics' restraint was unethical—it violated the least liberty-restricting means condition, even though the midazolam was safe and effective.

Emergency Department

We have offered several examples of the appropriateness of chemical restraints in the emergency department. Often in the emergency department, the emergency exception to informed consent will apply, so that condition will be satisfied. Generally, in the emergency department physicians should take care to not prematurely intrude upon the patient's cognitive liberty. Doing so requires not moving too quickly to more intrusive chemical restraints, or not prematurely abandoning a less restrictive chemical restraint for a more restrictive one. Even if it is more convenient to use a more restrictive chemical restraint—the patient would be less of a hassle, for example—it is nevertheless wrong. Inconvenience does not excuse an action from moral criticism. Thus, if it would be more convenient for a patient to be asleep but rousable than it would to intervene on merely which particular conscious state they are in, but both would achieve the intended aim, it would be wrong to intervene such that they are asleep but rousable.

Pediatrics

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One setting in which skipping the first line of restraints—ketamine, antipsychotics, or benzodiazepines aimed at changing the particular conscious state the person is in—are frequent and justifiable are pediatric settings. Such drugs can have the opposite effect in children that they do in adults. Instead of inhibiting their agitation or combativeness, they may make such states worse in children (Mancuso et al., 2004). But this just means that for children it may be more common for first line chemical restraints to fail the medical appropriateness condition. The second line—more liberty-restrictive chemical restraints—would then be the least liberty-restricting means of achieving the intended aim. That is, the second line restraint may be the least restrictive medically appropriate means.

However, moving to the second line restraint for children is not as drastic as it is in moving to the second line restraint for adults, because adults have stronger liberty interests than children. This is not to say that children have no liberty interests. They do, and these interests warrant incorporating their preferences into shared decision-making regarding their treatment. But children lack liberty to do many things. And it is very common to unproblematically restrict their liberty. At home, there is no problem restricting a five-year-old's liberty to eat cookies and crackers all day; but doing that to an adult is problematic. Examples abound.

One implication of children having weaker liberty interests is that restraints are less of a harm to the child than the same restraints would be for an adult. Because they are less of a harm, the balance of the harms of restraints versus their benefits will tip more in favor of restraints than it would for an adult. Less harm means that it takes less benefit to weigh in favor of restraints. But since medical appropriateness is mostly a matter of benefits versus burdens (and risks), restraints, even second line restraints, will be more permissible in children than they are in adults. So, it isn't as problematic to move from first line restraints to second line restraints in children as it is to do so in adults.

Psychiatric Settings

Agitated behavior by patients that places themselves, other patients, and staff at risk of harm is frequent in inpatient psychiatric settings. This agitation may be due to frustration about restrictions on another liberty, such as the ability to leave the locked unit. Liberty restrictions for

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those on involuntary psychiatric admission are already curtailed along a spectrum intended to only use those interventions which are least liberty-restricting. For most patients, if their safety is ensured only by being unable to leave the unit, no other liberty-restricting interventions are warranted. Freedom of movement within the unit and the requirement to obtain informed consent for other interventions is required, as are other patient rights frequently governed by state mental health codes or other regulatory bodies.

When a patient's behavior warrants additional intrusions upon their liberty due to risk of harm to themselves or others, our account would support the use of chemical restraints over the use of physical restraints, with preference given to dosing the pharmacological intervention sufficiently to intervene on the agitation but not intentionally high enough to cause full sedation, as best as can be estimated. If physical restraints are necessary to administer the chemical restraint, the physical restraint can only be applied for the duration necessary to administer the chemical restraint and, if necessary, until the chemical restraint is able to take effect but no longer.

Our account does not consider the role of seclusion in the spectrum of liberty intrusiveness. Plausibly, individuals may differ in their perception of the liberty intrusion of seclusion. Likewise, individual seclusion over a prolonged period of time may be significantly harmful, as seen in incarcerated individuals who experience prolonged solitary confinement.

Conclusion

We have identified the first line restraint, but we have not yet identified the second line restraint. The candidates for second line restraint are (a) a more liberty-restrictive chemical restraint or (b) physical restraints or (c) the combination of the two. Identifying the second line restraint would be easier if the last line restraint were identified. There are two such candidates. One is (ii) physical restraints, and the other is (iii) the combination of physical restraints and more liberty-restrictive chemical restraints. On the one hand, the combination of the two is maximally liberty-restrictive, which means that it may be likely to fail to satisfy one of the conditions for ethically permissible restraints (but still may be the least liberty-restricting means of achieving the intended aim, if it is the only means). The combination is as liberty-intrusive as

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restraints get. But on the other hand, when a person is under such maximally intrusive measures, they are at least unaware of the intrusion, owing to the highly restrictive chemical restraint. The absence of awareness doesn't mean that the restraint is any less intrusive—whether a person is trespassing is independent of whether anyone knows about it. But the harm to the patient may be less, in the absence of awareness of the intrusion.

When one is merely physically restrained, the total liberty intrusion is lower, but the person's awareness of the intrusion is greater. Further, mere physical restraints may cause more harm and be less medically appropriate. It's therefore ambiguous which of the two candidates is worse, which is the last line restraint. But note that, either way, physical restraints, either on their own or in combination with chemical restraints, are the last line restraint. That means that more liberty-restrictive chemical restraints are the second line restraint and physical restraints the last line, a last resort.

This ordering of restraints is presuming that other things are equal, which they often aren't. But even when a patient presents with a need for medical treatment, there are often several candidate interventions. Any time a particular intervention is considered "first line" it is only under the condition that other things are equal. The ways in which *ceteris* is not *paribus* determine the re-ordering of candidate interventions. For example, when a patient presents with a probable tick bite and Lyme Disease, the first line antibiotic is doxycycline rather than amoxicillin (Wormser et al., 2019). But if the patient is a child whose permanent teeth have not yet formed, then doxycycline's status as the first line antibiotic may be diminished and amoxicillin may be due more consideration. Something similar is true of restraints. Chemical restraints that merely change the particular conscious state of the patient are the first line intervention, unless the other conditions are such that more liberty-intrusive candidates warrant greater consideration. But even then, those who are intruding upon a patient's liberty should consider the harms that they are inflicting alongside the benefits they expect those harms to purchase.

It is better to try to avoid these harms altogether, such as by manipulating the patient's environment (e.g., lighting, sounds), the people who see the patient (e.g., family, nursing staff), or the patient's location (e.g., nearer the nurses' station) (Crutchfield et al., 2019). While these may be slower and less convenient, they are less intrusive and don't require medical

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professionals to carry out practices that they are not entitled to carry out, namely the extra-legal restriction of liberty.

The use of restraints is clearly liberty-intrusive. We have argued for a set of conditions governing their permissibility. But these same conditions might also be suitable for the government of all permissible chemical intervention, or even all medical treatments. We have not argued for these claims, of course. But it may be that any medical treatment that targets a person's mind, or just even any medical treatment, is subject to these conditions. Liberty is, after all, an important (maybe the most important) human value and frequently figures into medical decision-making (Navin & Wasserman, 2019; Wasserman & Navin, 2018). Other than more clearly being a matter of liberty restriction, what is true of the ethics of restraints might be true of any medical treatment, psychiatric or otherwise. This is to say that *all* medical interventions should be the least liberty-restricting means of achieving the intended aim. However, we have not argued for this claim; we merely recognize its possibility.

As mentioned in the introduction, the practice of administering less liberty-intrusive restraints before moving to more liberty-restricting restraints is common. The above provides a moral justification for this approach, while recommending against any approach to restraints whereby a more liberty-intrusive but otherwise equally effective restraint is administered. When a physician takes this more intrusive approach, they are unnecessarily infringing upon a person's liberty, and committing a moral wrong.

Statements and Declarations

The authors declare no competing interests or commitments.

References

American College of Emergency Physicians. (2020). *Use of Patient Restraints*.
Bublitz, J. C. (n.d.). *Freedom of Thought in the Age of Neuroscience*.

- Penultimate Draft: Please cite final version in AJOB: Neuroscience
<https://doi.org/10.1080/21507740.2022.2126539>

- Bublitz, J. C., & Merkel, R. (2014). Crimes Against Minds: On Mental Manipulations, Harms and a Human Right to Mental Self-Determination. *Criminal Law and Philosophy*, 8(1), 51–77. <https://doi.org/10.1007/s11572-012-9172-y>
- Centers for Medicare & Medicaid Services (2008). “Hospitals – Restraint/Seclusion Interpretive Guidelines & Updated State Operations Manual (SOM) Appendix A”. <
<<https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Downloads/SCLetter08-18.pdf>>
- Chernik, D. A., Gillings, D., Laine, H., Hendler, J., Silver, J. M., Davidson, A. B., Schwam, E. M., & Siegel, J. L. (1990). Validity and reliability of the Observer’s Assessment of Alertness/Sedation Scale: study with intravenous midazolam. *Journal of Clinical Psychopharmacology*.
- Croxall, C., Tyas, M., & Garside, J. (2014). Sedation and its psychological effects following intensive care. *British Journal of Nursing*, 23(14), 800–804.
<https://doi.org/10.12968/bjon.2014.23.14.800>
- Crutchfield, P., Gibb, T. S., Redinger, M. J., Ferman, D., & Livingstone, J. (2019). The Conditions for Ethical Application of Restraints. *Chest*, 155(3), 617–625.
<https://doi.org/10.1016/j.chest.2018.12.005>
- Currier, G. W. (2003). The controversy over “chemical restraint” in acute care psychiatry. *Journal of Psychiatric Practice*®, 9(1), 59–70.
- Detriche, O., Berré, J., Massaut, J., & Vincent, J. L. (1999). The Brussels sedation scale: use of a simple clinical sedation scale can avoid excessive sedation in patients undergoing mechanical ventilation in the intensive care unit. *British Journal of Anaesthesia*, 83(5), 698–701.
- Douglas, T. (2014). Criminal Rehabilitation Through Medical Intervention: Moral Liability and the Right to Bodily Integrity. *Journal of Ethics*, 18(2), 101–122.
<https://doi.org/10.1007/s10892-014-9161-6>
- Douglas, T. (2022). If Nudges Treat their Targets as Rational Agents, Nonconsensual Neurointerventions Can Too. *Ethical Theory and Moral Practice*, 25(2), 369–384.
<https://doi.org/10.1007/s10677-022-10285-w>
- Douglas, T., & Forsberg, L. (2021). Three Rationales for a Legal Right to Mental Integrity. In *Neurolaw* (pp. 179–201). Springer International Publishing. https://doi.org/10.1007/978-3-030-69277-3_8
- Ely, E. W., Truman, B., Shintani, A., Thomason, J. W. W., Wheeler, A. P., Gordon, S., Francis, J., Speroff, T., Gautam, S., & Margolin, R. (2003a). Monitoring sedation status over time in ICU patients: reliability and validity of the Richmond Agitation-Sedation Scale (RASS). *Jama*, 289(22), 2983–2991.
- Ely, E. W., Truman, B., Shintani, A., Thomason, J. W. W., Wheeler, A. P., Gordon, S., Francis, J., Speroff, T., Gautam, S., & Margolin, R. (2003b). Monitoring sedation status over time in ICU patients: reliability and validity of the Richmond Agitation-Sedation Scale (RASS). *Jama*, 289(22), 2983–2991.
- Greene, J. D. (2008). The secret joke of Kant’s soul. In *Moral psychology, Vol 3: The neuroscience of morality: Emotion, brain disorders, and development*. (pp. 35–80). MIT Press.
- Guerrero, P., & Mycyk, M. B. (2020). Physical and chemical restraints (an update). *Emergency Medicine Clinics*, 38(2), 437–451.

- Penultimate Draft: Please cite final version in AJOB: Neuroscience
<https://doi.org/10.1080/21507740.2022.2126539>

- Ienca, M., & Andorno, R. (2017). Towards new human rights in the age of neuroscience and neurotechnology. *Life Sciences, Society and Policy*, 13(1). <https://doi.org/10.1186/s40504-017-0050-1>
- Isen, A. M., & Levin, P. F. (1972). Effect of Feeling Good on Helping: Cookies and Kindness. *Journal of Personality and Social Psychology*, 21, 384–388.
- Joint Commission Standards on Restraint and Seclusion*. (2011).
- Levy, N. (2019). Nudge, nudge, wink, wink: Nudging is giving reasons. *Ergo (Ann Arbor, Mich.)*, 6.
- Malviya, S., Voepel-Lewis, T., Tait, A. R., Merkel, S., Tremper, K., & Naughton, N. (2002). Depth of sedation in children undergoing computed tomography: validity and reliability of the University of Michigan Sedation Scale (UMSS). *British Journal of Anaesthesia*, 88(2), 241–245.
- Mancuso, C. E., Tanzi, M. G., & Gabay, M. (2004). Paradoxical reactions to benzodiazepines: literature review and treatment options. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, 24(9), 1177–1185.
- McCarthy-Jones, S. (2019). The Autonomous Mind: The Right to Freedom of Thought in the Twenty-First Century. *Frontiers in Artificial Intelligence*, 2. <https://doi.org/10.3389/frai.2019.00019>
- Navin, M. C., & Wasserman, J. A. (2019). Capacity for Preferences and Pediatric Assent Implications for Pediatric Practice. *Hastings Center Report*, 49(1), 43–51. <https://doi.org/10.1002/hast.980>
- Némethy, M., Paroli, L., Williams-Russo, P. G., & Blanck, T. J. J. (2002). Assessing sedation with regional anesthesia: inter-rater agreement on a modified Wilson sedation scale. *Anesthesia & Analgesia*, 94(3), 723–728.
- Pettit, P. (2008). The Basic Liberties. In M. H. Kramer (Ed.), *The Legacy of H.L.A. Hart: Legal, Political, and Moral Philosophy*. Oxford University Press.
- Rasheed, A. M., Amirah, M. F., Abdallah, M., Parameaswari, P. J., Issa, M., & Alharthy, A. (2019). Ramsay sedation scale and richmond agitation sedation scale: A Cross-sectional study. *Dimensions of Critical Care Nursing*, 38(2), 90–95.
- Ryberg, J. (2017). Neuroscience, Mind Reading and Mental Privacy. *Res Publica*, 23(2), 197–211. <https://doi.org/10.1007/s11158-016-9343-0>
- Schmidt, A. T. (2019). Getting real on rationality—Behavioral science, nudging, and public policy. *Ethics*, 129(4), 511–543.
- Sinnott-Armstrong, W. (2008). *Framing moral intuitions*. MIT Press.
- Stokes, D. (2013). Cognitive Penetrability of Perception. *Philosophy Compass*, 8(7), 646–663. <https://doi.org/https://doi.org/10.1111/phc3.12043>
- Thaler, R. H., & Sunstein, C. R. (2009). *Nudge: Improving Decisions About Health, Wealth, and Happiness*. Penguin Publishing Group. <https://books.google.com/books?id=bt6sPxiYdfkC>
- Treggiari, M. M., Romand, J.-A., Yanez, N. D., Deem, S. A., Goldberg, J., Hudson, L., Heidegger, C.-P., & Weiss, N. S. (2009). Randomized trial of light versus deep sedation on mental health after critical illness*. *Critical Care Medicine*, 37(9). https://journals.lww.com/ccmjournals/Fulltext/2009/09000/Randomized_trial_of_light_versus_deep_sedation_on.5.aspx

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<https://doi.org/10.1080/21507740.2022.2126539>

Tversky, A., & Kahneman, D. (1981). The Framing of Decisions and the Psychology of Choice. *Science, New Series*, 211(4481), 453–458. <http://links.jstor.org/sici?sici=0036-8075%2819810130%293%3A211%3A4481%3C453%3ATFODAT%3E2.0.CO%3B2-3>

Wasserman, J. A., & Navin, M. C. (2018). Capacity for Preferences: Respecting Patients with Compromised Decision-Making. *Hastings Center Report*, 48(3), 31–39. <https://doi.org/10.1002/hast.853>

Wormser, G. P., Strle, F., & Shapiro, E. D. (2019). Is Doxycycline Appropriate for Routine Treatment of Young Children With Erythema Migrans? *The Pediatric Infectious Disease Journal*, 38(11), 1113–1114. <https://doi.org/10.1097/INF.0000000000002453>