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A Case for Changing the Age of Majority From 18 to 22 Years of Age in Massachusetts

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Abstract

The age of majority is when a person is considered legally responsible and culpable for their actions (Cox et al., 2022). Since the advent of the legal system, there seems to be no consensus regarding the ideal age of majority. This is demonstrated by the age varying from state to state and nationally. In the United States, the age of majority has been as low as 14 years old. Until the 19th century, 14-year-olds could be processed in the adult justice system as well as sentenced to the death penalty. As of 2019, 38 of the 50 states, including North Carolina, Illinois, and Connecticut, have raised their age of majority to 17 or 18 years of age (Tedeschi & Ford, 2015; Citizens for Juvenile Justice, 2024). As of 2020, Vermont raised the age of majority to 20 years old (Fitzgerald, 2023). This systematic literature review analyzes the potential benefits of increasing the age of majority to 22. By analyzing the history of the United States' view of juveniles and the juvenile justice system, the benefits of using the juvenile justice system for more youthful offenders are evident. These benefits include a decrease of stigma, a decrease in long-term costs, rehabilitation, and public safety. Through examination, the differences between juveniles and adults are evident and play a significant role in identifying the benefits of raising the age of majority. These differences are seen in brain, social, and maturity development including neurotransmitter development, understanding of consequences, development of cognitive control, susceptibility and influenceability of peers, and propensity to engage in at-risk behavior. Through this investigation, it was noted that other Massachusetts agencies recognize older teens as a population in need of continued support. Many Massachusetts providers serve these youth through the transition into early adulthood. These include insurance and healthcare providers, the Department of Children and Families, the Department of Elementary and Secondary Education, the Department of Mental Health, and the Department of Disability

Services (Citizens for Juvenile Justice, 2024). Many of these services are eligible for youth ages 21 to 26. It is unclear why the age of majority within one or two departments was not consistent across all social service programming. This systematic literature review utilizes information and data to explore the benefits of increasing the age of the majority from 18 years old to 22 years old in Massachusetts.

Keywords: *age of majority, juvenile, justice system, neurological development, recidivism, rehabilitation, Massachusetts, youthful offender*

The Age of Majority in Massachusetts: The Benefits of Increasing the Age of Majority From 18 to 21 Years of Age

Literature Review

Introduction

The criminal justice system determines if a person is culpable based on the age they have committed a criminal act. The line between adolescence and adulthood is an arbitrary number that designates adulthood at 18 years of age (Loomis-Gustafson, 2017). However, there is a lack of consistency across juvenile law systems regarding the age of majority and when a young person is considered a juvenile and when they are an adult. Some juvenile justice courts consider the age of the juvenile at the time of arrest, prosecution, or court proceedings. This discrepancy can have a significant impact on what legal system, adult or juvenile, a person is processed through (Fitzgerald, 2023 and Loomis-Gustafson, 2017). This can directly impact the type of services a person has access to, the types of treatments, and the impact it might have on their future. There are benefits to being processed in the juvenile court system that get lost if a youth is processed in adult court. These include more focus on rehabilitation, confidentiality, and being labeled as a delinquent rather than a criminal. Youth is not merely an age or number, it is a period when there is more opportunity for rehabilitation (Fitzgerald, 2023). “The line was originally drawn based on the common law and statutory practices of the state, not behavioral and neurological science when determining the age of majority” (Loomis-Gustafson, 2017, p.230).

Many agree that adolescence begins around the age of 10 however there is debate around what age adolescents become adults. Many argue that it is somewhere between the ages of 18 and 21. Which can be seen in other forms of age restrictions. There is strong evidence that adolescents can be described as ranging from age 10 to 21 with early adolescence being 10-13,

middle adolescence being 14-17 and late adolescence being 18-21. Often those in late adolescence exhibit the highest level of recklessness (Shulman et al., 2016). This could be because those in their 20s have less supervision and more independent opportunities for risk-taking. There is evidence that suggests there is greater risk-taking associated with adolescents compared to adults and it can be due to developmental differences and the emotional arousal in any given situation (Shulman et al., 2016).

There is no drastic change in a person's ability to make decisions when they turn 18. Statutorily the age of 18 has been used as the age of majority because the young person was most likely no longer attending school, could be employed in a variety of settings (including those that might entail higher risk), vote, and join the armed forces. However, there is some discrepancy in the legal age of adulthood. At 14 a person can get a work permit. At 16 they are eligible for a driver's license. At 18 gives them the privilege to vote, join the military, give medical consent, and sign contracts. At 19 a person can become a firefighter. At 21 "a young person [can] drink alcohol, smoke tobacco or marijuana, gamble or serve as a police officer in Massachusetts" (Citizens for Juvenile Justice, 2024). Twentyone is also the age when a person can purchase a firearm and ammunition. Citizens for Juvenile Justice (2024) also reports that child support is often provided until a child turns 21 if they continue to reside at home with the custodial parent. The American Academy of Pediatrics recommends a child move on to adult medical services at the age of 21. Privileges continue to be awarded to emerging adults, "emerging adults are considered to be between the ages of 16-21 and are developmentally more similar to juveniles than adults" (Williams, 2020, p.13). Educational services are available to those with a disability through the Department of Elementary and Secondary Education until age 22 (if the family does not accept a high school diploma at age 18 or graduation). Young adults are also eligible to

remain on their parent's health insurance until the age of 26 (Citizens for Juvenile Justice, 2024). The amount of adult privileges increases as young people move through their teens and into their twenties

Neurodevelopment

One of the main reasons behind increased privileges with increased age is the brain development of juveniles. The brain is divided into three parts including the brain stem, the cerebellum, and the cerebrum. One specific section of the brain, the amygdala is responsible for the fight-flight-freeze response as it sends electrical impulses to be processed into survival based emotional responses (Greely & Farahany, 2019). The structures within the brain, particularly the frontal lobes, located in the cerebellum, develop as one ages. Ultimately the brain works together as a collective whole to control impulsive acting out, identify consequences of actions taken or not, and understand the moral imperatives of right and wrong.

Neuroscience is intertwined in the legal system in the United States and when used correctly neuroscience can improve the decision-making of the law by improving accuracy and decreasing errors. Neuroscience can help understand and explain criminal behavior to some extent. Although the brain and genes can correlate with a young person's actions there are competing internal and external influences that impact behavior (Greely & Farahany, 2019). Some juveniles are experimenting with unlawful behavior as a means to develop their own identity while others are entering adolescence with criminal inclination (Benda et al., 2001). "Youth [...] is a period when individuals are less mature, more impulsive, and more susceptible to negative [influences]" (Fitzgerald, 2023, p.386). However, some studies suggest that there is a "peak in sensitivity to peer influences" (Loomis-Gustafson, 2017, p. 237) at the age of 18 and the desire to engage in these more preferred, peer related, and risky behaviors continues until the age

of 21. This can be seen in the transient pattern of criminal activity which peaks in adolescence and subsides by the mid-20s. This suggests that the majority of juvenile offenders are likely to desist from crime as they mature in adulthood. Because of the placidity of the brain and its continued development, exposure to adult or harsh punishments may stifle the potential for growth and rehabilitation in youth (Casey et al., 2022).

Within the legal system, neuroscience can be used to determine a defendant's competency, understand and challenge a defendant's mental state during the crime, and give way to arguments around the involuntary actions of a client. There is an increasing amount of evidence that juveniles who commit crimes differ in many ways from their adult counterparts. Juveniles can be more susceptible to the negative effects of the adult criminal justice system (Tedeschi & Ford, 2015). This is all to say neuroscience may shed light onto the responsibility of a defendant. Developmental neuroscience highlights how the adolescents' developing brain can make it more difficult to conform to societal expectations of behavior and the legal systems standard of law abiding behavior. Neuroscience is also being used to evaluate if a client has the competency to understand the proceedings against them. This is to ensure due process and a fair trial. Neuroscience is advancing and will have important implications for the justice system (Greely & Farahany, 2019). One of the most important implications is the idea that “the upper bound of the age range is probably somewhere around 22. That is, it would be unlikely that there would be many normally developing individuals who have not reached adult neurological maturity by the time they have turned 22” (Steinberg, 2012).

One of the focuses of neuroscience within the law looks at the rates of recidivism for juveniles. Juvenile court systems are meant to focus more on rehabilitative efforts with an emphasis on creating responsible adults, rather than punitive measures and retribution”

(Loomis-Gustafson, 2017, p.223). Brenda et al., (2001) highlights the importance of understanding that there are significantly higher odds of entering the correctional system for adults if they are associated with specific predictors and that this can equate to about 92.7% of adults entering the correctional system. One of the strongest predictors of recidivism and criminal habituation was gang membership and carrying a weapon (Robertson et al., 2020). Adolescents could be associating with gang members to fill an emotional void and be based on manipulation and coercion. Gang members typically have a group mentality that invites risk-taking, socially maladjusted, alienated, and aggressive, often manipulating others for their gain. Youthful offenders tend to become affiliated with gangs following delinquency behavior. Greater involvement in the justice system has harmful effects and increases risks for later antisocial behavior. This can be due to exposure to violence and trauma in the system (Robertson et al., 2020). There is concern expressed in the research that this change in officer behavior could be mistaken for a shift in recidivism and or juvenile behavior. One limitation of deciphering officer behavior from juvenile behavior is that most if not all data comes directly from the police and therefore there is only data on those who are being arrested and or brought into the system. In addition, some data highlights that jurisdictions reported a lack of guidance and confusion around raising the age and therefore some juveniles were released with a warning as opposed to arrests (Loeffler & Chalfin, 2017). Juveniles whose criminal behavior persists into adulthood may have issues with a “low frustration tolerance, insensitivity to others, hyperactivity, unusual need for excitement, and poor impulse control” (Benda et al., 2001 p. 82). It is important to note that “youth who engage in criminal acts continue to do so as adults only 5-10% of the time” (Tedeschi & Ford, 2015 p.157). However, those processed in adult systems are more likely to recidivate and are often re-arrested more quickly.

In Europe, youth who are incarcerated on violent charges have a higher likelihood of desistance, the act of abstaining from engaging in criminal behavior, compared to their United States counterparts. There needs to be further data to fully explain, if any, the causes for this difference. However, it could be associated with higher opportunities for rehabilitation as well as the idea that youth as they age are more vulnerable to recidivism (Creemers et al., 2022). Juveniles who offend before their brains are fully developed should not be held at the same level and system as adult offenders.

Raising the Age

By raising the age, juveniles would have more time to access rehabilitation programs and treatment opportunities. Some proponents state that by raising the age there is a limit of exposure of adolescents to adult criminals and violence (Loeffler & Chalfin, 2017). There was a decrease in offending over time supporting the idea that adolescent's involvement in crime decreases over time (Robertson et al., 2020). With all this in mind, the study suggests that regardless of whether an arrestee is being processed in a juvenile or adult court there is little difference in recidivism. The limitations of this study include the fact that the sample is from one city and different jurisdictions with differential treatment of juveniles could impact the results of the study. This study also only looked at misdemeanor crimes and there could be an opportunity to study the results around serious felonies. Although the data suggests little effect on recidivism the study highlights that raising the age of majority does have other significant benefits. Many of these benefits are long-term life benefits such as employment, health, life satisfaction, and victimization. The authors also highlight that juveniles may not be as culpable for their crimes as adults and therefore juvenile court may be fairer in treatment. They also suggest that there is no

issue of public safety, in terms of their study, for raising the age of misdemeanors and is unlikely to increase crime rates (Loeffler & Grunwald, 2015).

As of 2019, 38 of the 50 states, including North Carolina, Illinois, and Connecticut, have raised their age of majority to 17 or 18 years of age and Connecticut and Illinois seem to be contemplating raising the age of legal majority from 18 to 21 (Tedeschi & Ford, 2015; Citizens for Juvenile Justice, 2024; Loeffler & Chalfin, 2017). As of 2020, Vermont raised the age of majority to 20 years of age (Fitzgerald, 2023). Those in favor of raising the age of majority believe that there will be a reduction in crime due to the increase in access to treatment opportunities in the juvenile system as well as decreasing the harmful effects of putting juveniles in the adult system. “If early childhood is seen as a major opportunity for teaching, so too should the teenage years” (Blakemore, 2012, p.115). Raising the age to 21 would mean that those offenders 21 and under would have access to juvenile courts and their benefits. “Juvenile courts have jurisdiction over offenders who commit certain criminal offenses before a certain age known as the age of majority” (Fitzgerald, 2023, p. 368) and we must support emerging adults and seek a higher rate of rehabilitation. By raising the age of majority from 18 to 21 there is support and evidence to suggest that the benefits are not only to the youth but the public and community.

History of the Juvenile Justice System

“There are 51 juvenile justice systems in the United States” (Ecenbarger, 2012, p.55) each having its own set of rules, policies, and structures. Some states even have significant differences from county to county. One major difference is the power held by a judge in juvenile court. A judge in juvenile court is given a large amount of freedom to use judgment on how to sentence a juvenile as there are no federal guidelines. The goal of this was to afford youth more

benefit of the doubt however it creates significant differences in sentencing for offenders of the same crime (Ecenbarger, 2012). The House of Refuge helped establish the basis for the American Juvenile System. In the 1960s some argued that the juvenile system was too informal and gave judges too much discretion. It was also highlighted at this time that the juvenile system did not get the due process that their adult counterparts receive. The next big shift in juvenile justice history was in the 1970s and 1980s. This was the time when the mantra ‘adult time for the adult crime’ was coined and utilized. In this reform, one of the many changes was that juveniles could now be transferred to adult systems at younger ages. This was a shift from the rehabilitative roots of the juvenile system to a more punitive system (Tedeschi & Ford, 2015). Punishment was a way to get evil out of society with justice focusing on retribution. There was no real difference in how criminals were viewed and age did not affect the type of punishment. Shift to a more restorative model however, there was a quick shift to a more justice model that focused again on punishment and retribution. This shift created an increase in transfers to adult systems (Loomis-Gustafson, 2017 and Cohen & Piquero, 2007). Juvenile court is founded on two ideals: treatment and rehabilitation. When comparing juvenile courts with adult courts there are differences in not only the type and format of sentencing but there is also a difference in the terminology used (Ecenbarger, 2012). Much of the focus of the juvenile justice system is on rehabilitation based on rehabilitation philosophy. The main goal has been to prevent and mitigate unlawful behavior before crime becomes habitual (Benda et al., 2001). The country has created a juvenile justice system that too often criminalizes “typical” adolescent behavior. The juvenile justice system was meant to be the “shallow end of the pool” (Ecenbarger, 2012, p.55), a place to help youth before they become habitual criminals in their adult lives.

Conclusion

Although there has been no consensus regarding the ideal age of majority. The United States Supreme Court refers to society's standards of decency when discussing the juvenile age of majority. That is to say, the age at which society sees youth as responsible and culpable of their actions. This age varies from state to state and nationally (Tedeschi & Ford, 2015). “Over the last two decades, the United States Supreme Court has repeatedly held that these developmental deficiencies make juvenile offenders less culpable and more deserving of special treatment under the law” (Fitzgerald, 2023, p. 404). The US Supreme Court declared that it is against the Eighth Amendment to impose harsh penalties on juveniles such as life without parole and the death penalty. It should be noted that youth can still receive life without parole however it is not legal to have this punishment be mandatory for certain crimes. This creates a more case-by-case option for judges to use their judgment in the juvenile system (Casey et al., 2022). Over the past 100 years, there have been three waves of reform in the legal system (Cavanagh et al., 2022). These shifts are just the beginning and can be seen in the use of the developing neuroscience for understanding the legal age of culpability and in states looking into increasing their age of majority up to 20 years old (Fitzgerald, 2023; Citizens for Juvenile Justice, 2024). Massachusetts is a front runner in support through various programs and departments; many of these services are accessible for those well into their 20s and there is a higher age of eligibility. The juvenile justice system is meant to be another supportive service and by increasing the age of majority to 22 there is significant evidence that it offers more support not only to young adults but the state as a whole.

Methods

This project stemmed from an interest in research related to juvenile justice, brain development, and raising the age of majority. Using this area of research helped formulate a

research question that was focused on raising the age of majority. The EBSCO database was used through the Mcquade Library Database at Merrimack College. There were criteria utilized to narrow down the overall search. The criteria included articles from 2014 to 2024 that were peer reviewed from the United States and written in English. Once this criteria was set up the following keywords were used to identify articles of interest: recidivism, Massachusetts, DYS, raising the age, juvenile justice, adolescent brain development, decision making, delinquency, other states, adult justice system, and comparison. These various keywords were utilized to create a list of articles. Once duplicates and irrelevant articles discarded articles that did not fit in the year range were also discarded. This created a list of 31 articles that examined key topics and articles for this literature review. From this list 11 articles were discarded due to being relevant and resulted in 20 articles for analysis. In addition to these 20 articles 8 to 10 other sources including textbooks, books, and websites were utilized and analyzed for this literature review.

Results

Developmental Differences Between Adults and Juveniles

The Brain

The brain changes during adolescence in a variety of ways. One change involves the increase in emotional regulation and self-control. This can stem from the various systems of the brain communicating more effectively. Adolescents are sensitive to rewards and are often motivated to engage in acts that increase their immediate rewards. During middle adolescence, the brain is heightened to the arousability of rewards and the systems responsible for self-regulation are still underdeveloped. It is important to note that adolescents mature intellectually faster than they do socially or emotionally and this should be considered when looking at the culpability of youth (Steinberg, 2012). “The brain develops both structurally and

functionally during adolescence” (Blakemore, 2012). It is during this time that there is also the development of identity, self-consciousness, and relationships. This is a time when brain reorganization is taking place, the brain is adaptable and is susceptible to molding and shaping. Abilities such as internal control, multitasking, planning, and social cognition skills are continuing to develop in adolescence (Blakemore, 2012). In adulthood, the communication between brain systems is more developed and increases rational decision-making, emotional regulation, and understanding of consequences. There is no exact moment that an adolescent’s brain becomes that of an adult’s brain.

The parts of the brain that are not fully developed in adolescence can be directly related to a person’s ability to understand their choices and the consequences of those choices. Some of these parts include the nucleus accumbens, the frontal cortex, the cerebral cortex, and the amygdala. The nucleus accumbens, the reward center, when enlarged can impact motivation, learning, and decision-making and decreases in size in early adulthood (Loomis-Gustafson, 2017). The frontal cortex, which is responsible for rational decision-making and impulse control is not fully developed until 21 for females and 24 for males. The cerebral cortex is responsible for cognitive functioning including decision-making, response inhibition, attention, and other social abilities. The social abilities of the cerebral cortex truly form between the ages of 16 and 19 and some may even continue to develop well into the age of 21 (Williams, 2020). Youth’s decision-making and impulse control are controlled by the amygdala which is central to emotion and impulse. This can impact not only the youth’s ability to make reasoned decisions but also impacts their ability to understand long-term consequences (Fowler & Kurlychek, 2017). The ability to inhibit emotional and behavioral responses, estimate risk, and consistently plan a course of action is not available until most are in their mid-20s (Tedeschi & Ford, 2015).

It is reasonable to argue that adolescents' cognition is much more influenced by emotion and social environments. Their choices are likely to be based on their emotional state that can be influenced by their brain chemistry. Youth are more likely to engage in at-risk behaviors and follow their impulses in adolescence. This can be attributed to the slow development of youth's brain regions that are associated with immediate reward and control. Although older adolescents have more capacity to make decisions similar to adults, adolescents still lack the social and emotional maturity that adults have. One way this social-emotional maturity is seen in adults is in their ability to self-regulate. To have this, adults must have the ability to self-monitor their behavior (Williams, 2020). To truly resist peer influence a juvenile must have a stable sense of self which is often not fully formed until late adolescence or early adulthood (Tedeschi & Ford, 2015).

Juveniles have an increase in dopamine, associated with increased risk-taking and sensation-seeking behaviors, their prefrontal cortex is not fully formed, which means that while it is still developing juveniles are lacking the full ability to manage their impulses, and their brain goes through significant myelination, allowing for faster neurotransmissions impacting overall functioning. "Ages 14-21 are a period of heightened sensitivity to reward" (Shulman et al., 2016, p.107). This can account for the increase in risky behavior and impulsivity. The brain's ability to communicate among its parts is also still developing in adolescence which supports effective emotional regulation and control of emotional impulses (Fitzgerald, 2023). "Until this process is complete, adolescents are unable to fully plan, weigh costs and benefits, and respond appropriately to inhibitions" (Fitzgerald, 2023, P 388). In adolescents, the cognitive control system is not fully developed often making it difficult to restrain from risky behaviors. This

ability for cognitive control continues to develop well into late adolescence (Shulman et al., 2016).

Studies of the brain “show that the area of the brain that allows adults to make responsible, rational decisions is not fully developed until early adulthood, usually” between the ages of 22 to 25 years. (Fitzgerald, 2023, P 402) The brain has incredible plasticity throughout life specifically in the first two decades. This means that up until the age of 20, there is profound room and ability to change and develop. It is important to note that the adolescent brain does not finish developing quickly, there are a series of multiple changes that occur that continue well into adulthood and research suggests there is a plateau in development around the mid to late 20s (Casey et al., 2022).

Puberty

Puberty often marks the beginning of adolescence however the end of adolescence is harder to define. Experts both nationally and internationally acknowledge that adolescence and the development of maturity continue well past the age of 18. Both the World Health Organization and the United Nations define youth as youth up until the age of 24 (Casey et al., 2022). This emphasizes the growing argument that the shift into adulthood begins between the age of 20 and 25 (Casey et al., 2022). Puberty plays a significant role in the brain development and chemistry of adolescents (Shulman et al., 2016). Children who go through puberty earlier or faster may appear to be more adult however their level of maturity may not be as advanced. These hormonal changes have a significant impact on cognition and emotional intensity (Garavito & Koch, 2023). The shift in puberty leaves room to create four subsections of youth: early adolescence, middle adolescence, late adolescence, and young or emerging adulthood. Emerging adulthood, often defined as 18-21, is a time of immense growth, development, and

transition. The distinction between the brain becomes more obvious by the mid 20s (Casey et al., 2022). This suggests that there are “clear biological reasons youth may not be as responsible or culpable for their actions as adults” (Fowler & Kurlychek, 2017, p. 265).

Peer Influence and Risk-Taking

There is a strong likelihood that juveniles are more susceptible to guidance from older peers due to the chemical changes that occur during puberty and can impact decision making. There is a greater likelihood that juveniles may believe that they are under arrest in situations where adults would understand the difference. Even adults have been coerced to admit to crimes they have not committed under pressure (Garavito & Koch, 2023; Fowler & Kurlychek, 2017). Although adolescents may be susceptible to suggestion in situations, “it is entirely possible that an adolescent might be mature enough for some decisions but not others” (Steinberg, 2012). This lack in maturity can impact an adolescent’s inability to avoid emotionally heightened situations and engage in risky choices. This increase can be attributed to the adolescents' amplified desire for exciting and pleasurable activities. Due to a lack of cognitive control, adolescents can struggle to refrain from engaging in hazardous impulses. The recklessness displayed by adolescents can be a consequence of the lack of development in a young person’s brain (Shulman et al., 2016).

“Focus on the reward of a risky choice all increase between pre-adolescence and mid-adolescence, peak between ages 15 and 17, and then decline. In contrast, controlling impulses, planning ahead, and resisting peer influence all increase gradually from pre-adolescence through late adolescence, and in some instances, into early adulthood” (Steinberg, 2012).

Adolescence is a time of experimentation where juveniles often struggle to regulate emotional control, engage in logical thinking, engage in rational decision making, and examine the consequences of their actions. This can suggest that adolescents may not be biologically responsible for their criminal acts. In addition to this there is evidence that suggests juveniles may be more psychiatrically and developmentally vulnerable to the stresses of an adult system. With this in mind adolescents offer a unique experience for rehabilitation (Tedeschi & Ford, 2015).

Personality

Personality also shifts throughout life however the biggest age range for shifts is 20-40. Emotional stability has the biggest shift after the age of 22. There is a robust amount of evidence that suggests that personality, behavior, and the brain are changing and developing throughout the lifespan with a significant change occurring between adolescence and the early 20s. “Adult capacity is not reached until the twenties” (Casey et al., 2022, p.322). Juveniles are different from adults especially in the eyes of the law due to maturity levels and vulnerabilities (Casey et al., 2022).

Cognition

Cognitive control increases linearly during adolescence but does not reach full maturity until several years following the peak period of reward sensitivity (Shulman et al., 2016). Adolescent maturity can be measured by cognitive capacity which includes logical thinking and an individual's ability to regulate and manage their impulsivity during intense emotion and risky situations. Minors are more prone to make immature decisions with immature judgment and a lack of understanding the consequences of these decisions (Icenogle et al., 2019). This can be associated with a lack of self-control which Brenda et al., (2001) found to be the primary

explanation for criminal behavior. Shulman et al. (2016) found that 18 and 19 year olds report having a continued higher level of impulsivity.

Based on data from over 900 people aged 10-30 Icenogle et al. (2019) found that cognitive capacity, which is the ability to reason logically, matures around 16 whereas psychosocial maturity, the ability to exercise self-restraint including in moments of heightened emotion, does not fully mature until many years later. Cognitive capacity reaches adult level around 16 years old but psychosocial maturity reaches adult levels beyond the age of 18.

“Although the basic understanding of principals may be intact by 15 or 16, youths do not have the psychosocial maturity to make reasoned decisions in social situations” (Fowler & Kurlychek, 2017 p. 265). This means that juveniles may be capable of making decisions but may struggle in making mature decisions in emotional moments. Icenogle et al. (2019) described two types of cognition: cold and hot. Cold cognition is defined by the mental process used to make decisions in situations absent of heightened emotion. Hot cognition is defined as the process involved in decision making in emotionally charged situations. Studies have found that ages 18-21 perform at adult levels with cold cognition however perform closer to younger teens with hot cognition situations. It is easy to make impulsive decisions in heightened emotional states. Cold cognition increases in early to mid-adolescence and then plateaus.

By age 16 or 17 many juveniles are compatible with adults on their ability to competently stand trial. Hot cognition includes sensation seeking, impulse control, future orientation, and ability to manage peer influences. Effective hot cognition requires developed cognitive capacity and psychological maturity. Adolescents' decision making lags behind adults and especially lags in emotional situations. Therefore adolescents and young adults are still

developing in ways that influence their culpability (Icenogle et al., 2019; Shulman et al., 2016; Loomis-Gustafson, 2017).

Those, especially adolescents, that engage in crime tend to be more impulsive, insensitive, engage in more risk-taking, are typically emotionally aroused, and lack self control (Brenda et al., 2001; Steinberg, 2012). By the mid 20s the likelihood and amount of impulsive behaviors appear to stabilize. The skills needed to appropriately respond to cognitively demanding situations continue to improve well into adulthood. Although at 15 some may be able to utilize self-regulation techniques in calm or ideal situations, the ability to utilize self-regulation techniques in times of heightened emotion is not fully formed until the early 20s. This emphasizes the idea that cognitive control does not plateau in adolescence rather it continues to develop into early adulthood (Shulman et al., 2016).

Trauma

Trauma impacts brain development. The justice system can further traumatize youth through long sentences and harsh punishments. This can get in the way of them reentering society in a constructive way impacting the rates of recidivism. Each adverse childhood experience that a child experiences increases the likelihood of disruption in brain development that can lead to impairments in brain functioning. About 93% of juvenile offenders have at least one adverse childhood experience (ACE) (Williams, 2020).

Difference Between Juvenile Justice Systems and Adult Justice Systems

The main goal of the juvenile system is to support public safety, develop skills and treatment to support rehabilitation. Children and juveniles are less culpable of their actions and more prone to having successful rehabilitation (Icenogle et al., 2019). The juveniles that are sentenced to adult systems often receive harsher punishments and, although it is not meant to

happen, due to the interaction of adults and juveniles, juveniles are subject to more trauma, violence, and ability to expand their criminal insights increasing their likelihood for recidivism (Williams, 2020 & Robertson et al., 2020). In adult systems there can be inadequate mental health treatment, increased recidivism, victimization, and social marginalization. This can be attributed to the adult systems being focused more on punishment than rehabilitation (Loeffler & Chalfin, 2017; Tedeschi & Ford, 2015). Juvenile systems are more likely to have an emphasis on treatment and rehabilitation allowing for a more therapeutic model. While adult facilities often focus on enforcing rules and punitive methodology. One concern is an increased likelihood of suicidal ideation and suicidality within the adult systems specifically for juveniles (Tedeschi & Ford, 2015). Beyond suicidality and the punitive methodology of adult systems there is also the likelihood and frequency of juveniles interacting with more experienced criminals and learning more about criminal behavior.

Cost

One concern that arises around raising the age is the cost. However, proponents argue that the decrease in crime offsets the cost of processing more juveniles. Those against raising the age claim that raising the age for teenagers who commit serious offenses are more appropriately handled in the adult system and therefore if they are processed in the juvenile system there will be an increase in juvenile crime rates (Loeffler & Grunwald, 2015). Yet, the public is often more open to paying for rehabilitation services for juveniles compared to paying for incarceration of juveniles (Cohen & Piquero, 2007). The Massachusetts economy benefits from raising the age of majority by having increased workers in the workforce and having less of an expense over the course of a person's lifetime (Citizens for Juvenile Justice, 2024). According to Abrams and Rohlds (2007) as cited in Cohen et al. (2007), the average offender loses \$949 in wages and has a

freedom value of 1,050 dollars for a 9- day period. In a willingness to pay analysis the cost of murder is estimated to be around 11.8 million dollars. Two or more police contacts can cost 201,527 dollars (bottom up) or 472,039 dollars (willingness to pay). Those with 15 or more contacts with police can impose costs between 3.6 million and 5.8 million dollars. This highlights the benefits to increasing rehabilitation of those who are having contact with the police and for adolescents that opportunity is present in the juvenile court systems.

Cohen et al. (2007) reports that a career criminal can cost nearly 5.7 million dollars over their lifetime. According to Ecenbarger (2012), “Nationally the average daily cost of juvenile detention is around 250 dollars”. Cohen et al. (2007) reports that the value of saving high risk youth could be estimated at 1.7 to 2.3 million dollars. There has also been some research that may suggest a cost benefit in the long run to processing more adolescents in the juvenile system as opposed to the adult system. Cost of detaining a juvenile for one year is four times higher than an adult being detained for the same time (Loeffler & Chalfin, 2017). This is due to the reported higher rates of rehabilitation of youth and although it would be a bigger onset cost it would decrease the long term costs of additional time in an adult system.

Public Safety

There is little evidence to suggest that raising the age impacts public safety (Loeffler & Chalfin, 2017). Often concern for public safety is the pushing factor to have more restrictive and severe punishment for juveniles (Creemers et al., 2022).

Impact of the Current Justice System on Juveniles

Juveniles are meant to be processed in juvenile court however they can be processed in adult court systems if a person is past the age of majority or they are transferred to adult court. Loeff and Grunwald (2015) highlight benefits of being processed in a juvenile court including

the fact that juvenile arrests require parental notification, juvenile arrests are less likely to be detained, and are more likely to engage in community based interventions. Exposure to adult justice systems can increase recidivism and incarceration (Citizens for Juvenile Justice, 2024; Creemers et al., 2022). Although recidivism among juveniles is more common for those who experience mental health issues or substance use disorders who have been incarcerated, early studies have found that there is a lower recidivism rate for youth who are processed in juvenile court. Recent research has shown that juveniles do not mature psychosocially until post adolescence and therefore processing them in adult systems can be associated with elevated rates of recidivism (Loeffler & Chalfin, 2017). In other studies youth who were processed in adult court were rearrested quicker and more likely to be arrested for a serious felony. Studies conducted in Arizona, Pennsylvania, and Florida found similar results (Fowler & Kurlychek, 2017; Creemers et al., 2022; Tedeschi & Ford, 2015).

Juveniles who are processed in adult courts often go on to become more criminal in their adult life compared to juveniles who are processed in juvenile courts.. It is concluded that keeping juveniles out of adult jails, where they could learn to engage in more criminal behavior, would increase the likelihood of rehabilitating juveniles (Fowler & Kurlychek, 2017). Other significant predictors of recidivism include social maladjustment, alienation, aggression, withdrawal, and substance use. Raising the age of majority may not have much effect on recidivism in the short term but does have an impact on the recidivism later in life (Loeffler & Grunwald, 2015) and “regardless of whether the juvenile further penetrated the system after arrest, youth processed as a juvenile did indeed have significantly lower rates of recidivism” (Fowler & Kurlychek, 2017 p. 272). Loeffler and Grunwald (2015) and Fowler and Kurychek (2017) found that processing juveniles in the adult system does increase recidivism. When tried

as juveniles 16-year-olds have a reduction in recidivism rates by about 50% (Fowler & Kurlychek, 2017). Each year in adult prison equals about 4-7% increase in likelihood of recidivism (Fitzgerald, 2023).

In addition to an increase in the likelihood of recidivism there can be an increase in stigmatization for youth processed in the criminal system. This is called secondary deviance and refers to a shift in a person's identity that can occur for a youth with social rejection due to a criminal record (Fowler & Kurlychek, 2017). This stigma created by the adult system can make it difficult to move on in life and become a law abiding citizen in the future (Tedeschi & Ford, 2015). When a juvenile is processed in the juvenile systems the records are not publicly available. The further a juvenile penetrates the system and is possibly processed through the adult courts the more public the criminal record is and the stronger the chance of stigma. Raising the age of majority could have a positive impact on their ability to enter the workforce (Loeffler & Grunwald, 2015; Fowler & Kurlychek, 2017).

Many states have created statues that allow juveniles to be transferred by a judge for serious offenses to adult court. “These changes precipitated a large-scale recriminalization of juvenile offending” (Loeffler & Grunwald, 2015 p. 362). Williams (2020) reports that from age 12-17 a juvenile can be transferred to adult court. Loeffler and Grunwald (2015) found that among transferred youth, those transferred from juvenile systems to adult systems, there is a higher rate of recidivism. Combining young adults or juveniles with adults in the justice system can create more connection to negative influences (Loomis-Gustafson, 2017). These negative influences can include peer influence and witnessing violence.

“The United States Department of Justice noted that approximately one-quarter of juveniles transferred to adult facilities [have] been assaulted or witnessed an assault by an inmate, and one-third reported being the victim of, or witness to, an assault by a correctional officer” (Tedeschi & Ford, 2015 p.157).

The violence towards themselves in the form of suicidality increases for juveniles in the adult system (Loomis-Gustafson, 2017). Tedeschi and Ford (2015) reported that a 1980 study found the rate of suicidality for juveniles in adult systems as 7.7 times higher and in 2007 the number had increased to 36 times higher for those in adult systems. The researcher reports that transfers are actually relatively low with 7,600 of the 1.5 million juveniles being transferred to adult systems (Loeffler & Chalfin, 2017).

Other Massachusetts Agencies

In Massachusetts support services are provided to those up until the age of 26. These support services are provided through various agencies including the Department of Elementary and Secondary Education (DESE), the Department of Children and Families, and the Department of Youth Services. The Department of Elementary and Secondary Education requires students who are receiving special education services to begin secondary transitioning at the age of 14. However from the age of 14 until they graduate and accept the diploma or when the student turns 22 students receive services from their public school districts. They can be on a non-diploma track, reject the diploma, or accept a recommendation for a continued 5th year (*Garcia, 2024*). Although a student, at the age of 18, legally has the right to take control over their IEP decisions they are still considered eligible until the age of 22 (Mittnacht, 2010). The Department of Children and Families (DCF) works with families and children offering services to children ages 18-22 (*Massachusetts Department of Children & Families, 2024*). DCF supports this transitional

period for children who are in the care of the department as well as those who are in the care of their families and working with the department.

The Department of Youth Services (DYS) works closely with the juvenile justice system. DYS is typically where juveniles will be placed to receive support and remain detained to serve their sentence. Although this paper is utilizing terminology typically associated with adult legal systems, it is important to note that DYS utilizes different vocabulary to create distance from the adult system (*Department of Youth Services, 2024*). DYS serves youth who are ages 12-21 and are involved in the juvenile justice system who are adjudicated delinquent or adjudicated as a youthful offender. Typically DYS supports youth until the age of 18 where they would then be transferred to an adult system to finish any remaining sentencing. However if a youth is released at the age of 18 they are eligible to sign themselves back into DYS until the age of 21 (*Department of Youth Services, 2024*). Youth discharged from DYS have lower recidivism rates. “46% of formerly DYS committed youth were re-arraigned compared to 76% of 18-24 year-old’s discharged from Houses of Corrections [with a] re-conviction rate of 26% compared to 55%” (Citizens for Juvenile Justice, 2024). The early twenties are a time many policy makers use as a defining moment in adulthood.

Conclusion

The human brain continues to develop well after the age of 18. Young adults demonstrate a decrease in risk seeking behavior, sensation seeking, and impulsivity (Collado et al., 2014). Many social service agencies in Massachusetts who serve these youth recognize a need for a transitional period that requires additional support (Citizens for Juvenile Justice 2024). The Department of Elementary and Secondary Education, the Department of Children and Families, and the Department of Youth Services all consider ages 18-22 eligible for support. In addition to

this in Massachusetts, people with mental disabilities are seen in the courts to have a lesser degree of culpability due to their diminished ability to understand their actions and consequences. Juvenile offenders can be considered just as diminished in their ability to understand their actions and consequences due to their brain development (Loomis-Gustafson, 2017). Additionally, Massachusetts recognizes older adolescence as a transitional age and offers supports through agencies and divisions such as DCF, DESE. Other “state agencies have created dedicated policies and programs to support young adults' transition to independent adulthood” (Citizens for Juvenile Justice, 2024).

Through this systematic review it is clear that the juvenile justice system’s stakeholders could benefit if the age of majority is increased to age 22. Raising the age could decrease recidivism and decrease the long term costs. There could also be an increase in community involvement, increasing rehabilitation, and an increase in access to treatment services. Loomis-Gustafson (2017) report that the percentage of juvenile offenders continuing to commit crimes in adulthood drastically decreases around the age of 25 and that with proper guidance and support adolescents can make responsible decisions. Emerging adults ages 18-22 can and should be considered juveniles based on their brain development and ability to make sound decisions. There are significant and lasting negative impacts that can occur for juveniles placed in adults, including higher rates of recidivism, increased exposure to violence, increased exposure to trauma, and increased potential for suicidality.

Recommendations

There is significant evidence that highlights the benefits of the juvenile justice system. Although it is a system that continues to evolve, there are significant benefits for those processed through the juvenile system compared to the adult system. This literature review makes the

argument for the need to increase the age of majority to the age of 22. This would help create more consistency across support services in Massachusetts. This increase in age would increase the amount of people involved in the juvenile justice system. Some opponents suggest that the same system could not support such a large age gap however the juvenile justice system is established on a more flexible law ground enabling judges more liberty with cases. One way to address this large age gap would be to divide the system into four subsections: early adolescence, middle adolescence, late adolescence, and emerging adults. This would give judges more freedom in establishing the correct environment for these youth. It's crucial to carefully consider the unique needs of the population and tailor DYS services accordingly to maximize the positive impact of extending the age of eligibility. Additionally, ongoing evaluation and adjustment of programs are essential to ensure they remain responsive to changing circumstances and emerging challenges. More research is needed to be done to assess if the benefits of the juvenile justice system would apply to those aged 18-22.

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