

ADMISSION COERCION IN ADOLESCENT
RESIDENTIAL TREATMENT

by
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ABSTRACT

Identifying, initiating, and sustaining change are central tasks in behavioral healthcare (Ryan & Deci, 2008, 2017). Using coercion to compel a person to change can undermine their autonomous motivation for change (Gutterswijk et al., 2020; Harder et al., 2012; Lynch et al., 2017). The use of coercion to compel a person to enter treatment is a common yet highly contentious practice that pervades all aspects of behavioral healthcare, including residential treatment (RT) settings for adolescents. The use of coercion during the RT admission process can be broadly defined as any implicit or explicit imposition from an external source that threatens or restricts a person's choice to enter treatment (Barbui et al., 2021; Hoge et al., 2001; Laing, 2016; Winick, 2008).

This dissertation examined the coercive practice of involuntary youth transport (IYT) in relation to adolescents' subjective experiences of negative pressures, voice exclusion, perceived coercion, and angry emotion at admission. Based on extant research and theory, two recursive path models were hypothesized to evaluate the relationship between IYT and each of these subjective experiences at admission. As hypothesized, Model 1's results showed that IYT was strongly related to adolescents' perceived coercion through two single indirect pathways: (a) negative pressures and (b) voice exclusion. Model 2's results extended these findings and showed that IYT was also related to adolescents' increased probability of endorsing angry emotion at admission through two double indirect pathways and one single indirect pathway: (a) negative

pressures through perceived coercion, (b) voice exclusion through perceived coercion, and (c) negative pressures.

These findings suggest that transported adolescents' perceived coercion at RT admission may be more associated with their experience of negative pressures and belief of voice exclusion versus IYT. Additionally, transported adolescents' angry emotion at admission may be more associated with their experience of negative pressures, belief of voice exclusion, and perceived coercion versus IYT. These findings provide a basis for future research investigating adolescents' subjective experiences at admission in relation to involuntary admission method and psychosocial treatment outcomes. This research also offers guidance for reducing involuntarily admitted adolescents' perceived coercion and angry emotion at admission by reducing their experience of threat and force and increasing their belief of having voice during admission. In the absence of more robust empirical evidence, this research can inform practice and policy recommendations for IYT, including other involuntary admission approaches in RT. Strategies for improving adolescents' experiences during involuntary admission are discussed.

To the adolescents involuntarily referred to behavioral health residential treatment. You have the right to experiencing dignity and respect in all aspects of treatment, including the admission process.

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CHAPTER 1

INTRODUCTION

The process of identifying, initiating, and sustaining change is a central task in behavioral healthcare (Ryan & Deci, 2008, 2017). Using coercion to compel a person to change can undermine their autonomous motivation for change (Gutterswijk et al., 2020; Harder et al., 2012; Lynch et al., 2017). In behavioral healthcare, the use of coercion during the admission process can be broadly defined as any implicit or explicit imposition from an external source that threatens or restricts a person's choice to enter treatment (Barbui et al., 2021; Hoge et al., 2001; Laing, 2016; Winick, 2008). The use of coercion during admission is a common yet highly contentious practice that pervades all aspects of behavioral healthcare, including residential treatment (RT) settings for adolescents (Gass, 2018; Gutterswijk et al., 2020; Hamilton et al., 2020; Harder et al., 2012; Lynch et al., 2017; SAMHSA, 2019). On the one hand, coercive admission practices threaten to violate a person's autonomy, undermine motivation, incite negative psychological reactions, and impede the therapeutic relationship—all central components to therapeutic change in behavioral healthcare (Maylea, 2017; Rains, 2013; Ryan & Deci, 2008, 2017). On the other hand, when used ethically, such practices may be conducive to the therapeutic process, as they afford those who are "incompetent to make decisions for themselves or to lack autonomy" the opportunity of treatment (O'Brien & Golding, 2003,

p. 170; Ellila et al., 2008; Hamilton et al., 2020; Gass et al., 2021; Gutterswijk et al., 2020). In recognizing both arguments, O'Brien and Golding (2003) proposed the following justification process—the principle of least coercion—for using coercion in behavioral healthcare:

The [person] is incompetent to make the decision; harm prevented or benefit provided outweighs the harm caused by the coercion; the least coercive intervention that will promote good or prevent harm is used. (p. 172)

Residential Treatment

Residential treatment (RT) is broadly defined as a 24-hour behavioral health intervention for children and adolescents under 18-years-old beleaguered by emotional, behavioral, and substance use problems (Ainsworth, 2017; Gutterswijk et al., 2020; Lynch et al., 2017). RT incorporates various cognitive, behavioral, and solution-oriented therapeutic techniques to address youth's problems within a structured non-hospital group-living environment (Gutterswijk et al., 2020; Harder et al., 2012; Whittaker et al., 2015). RT facilities vary in size and security and go by a variety of names, including residential treatment center, therapeutic boarding school, wilderness therapy program, and other treatment programs meeting the above criteria (Harder et al., 2012; Russell, 2007; SAMHSA, 2019). This wide variation of milieus makes it difficult to ascertain the true prevalence of adolescent RT facilities in the U.S. According to the criteria in SAMHSA's (2019) National Mental Health Services Survey, more than 600 adolescent RT facilities operate in the U.S., serving more than 18,000 youth at any given time. Other SAMHSA data report more than 800 adolescent RT facilities operate in the U.S., serving more than 48,000 youth per year (Lynch et al., 2017).

Adolescents referred to RT often present with a history of severe emotional and behavioral problems, including high rates of aggression and substance abuse (Gutterswijk et al., 2020; Leloux-Opmeer et al., 2017; Martín et al., 2018). Many adolescents referred to RT have a history of unsuccessful treatment in family or community behavioral health outpatient settings (Lynch et al., 2017). Adolescents can also be referred to RT as a step-down from inpatient care (Lynch et al., 2017). Adolescents referred to RT tend to exhibit low motivation to change and may refuse treatment even when recognizing a need for it (Brauers et al., 2016; Lambert et al., 2013; Martin et al., 2018; Whittaker et al., 2015). In situations where adolescents referred to RT pose a substantial risk of harm to themselves or others but refuse admission, coercive methods may be used to involuntarily admit them into care (Gutterswijk et al., 2020; Kaltiala-Heino, 2010; Nytingnes et al., 2018; Russell, 2007; Tucker et al., 2018; Whittaker et al., 2015).

Coercive RT admission methods are discussed extensively in subsequent sections, but include the use of therapeutic deceit, threat of harsher consequences, physical or legal force, and other procedures that compel an adolescent to enter treatment (Gutterswijk et al., 2020; Russell, 2006). While precise prevalence estimates do not exist, scholars reason that the vast majority of adolescents entering RT and other out-of-home treatment settings experience some form of coercion during admission (Chatfield et al., 2020; Gass et al., 2021; Gutterswijk et al., 2020; Mooney & Leighton, 2019; Russell, 2006). Relying exclusively on involuntary admission status, SAMHSA (2019) reports approximately 35% of children and adolescents placed in the more than 600 RT U.S. programs surveyed were admitted involuntarily. International estimates for adolescents in RT do not exist. However, involuntary admission data are reported for other forms of out-of-home care

outside of the U.S. Research of adolescent inpatient behavioral health treatment in Canada reports involuntary admission rates ranging from 45 to 83% with significant variation across studies (Greenham & Persi, 2014; Persi et al., 2016). International research for adolescent inpatient treatment outside of North America reports involuntary admission rates ranging from 20 to 50% (Ellila et al., 2008; Kaltiala-Heino, 2004, 2010; Nytingnes et al., 2018). In sum, the available data suggest admission coercion is pervasive throughout adolescent RT admissions and other out-of-home behavioral healthcare settings in the U.S. and abroad.

Criticisms and Justification of Coercion in RT Admissions

The use of coercive methods to involuntarily admit adolescents into RT is a hotly contested issue (Hamilton et al., 2020; Maylea, 2017; Mooney & Leighton, 2019). The American Bar Association (2007) and U.S. Government Accountability Office (2008) have highlighted concerns of abuse and a need for increased regulation of coercive practices, particularly, in private RT settings. National news (e.g., Kennedy, 2020) and social media platforms (e.g., Facebook) have placed the use of such practices in the public spotlight, as prominent public figures and others have come forward citing incidents of abuse related to these practices. Mooney and Leighton (2019) and Robbins (2014) have highlighted ethical concerns regarding the use of involuntary youth transport (IYT), a form of secure transport where adolescents are physically escorted from their current residence into RT (Tucker et al., 2015). These authors contend that the restrictive nature of IYT and other coercive admission practices pose a risk of more psychological and physical harm than benefit to youth clients (Mooney & Leighton, 2019; Robbins,

2014). As a result, they call for greater regulation and consideration of adolescents' rights in the RT admission process (Mooney & Leighton, 2019; Robbins, 2014).

In recognizing these concerns, Gass et al. (2021) emphasize the importance of weighing the potential harm versus benefit of using coercion to admit a youth client into RT. Drawing on Gass et al.'s (2020) ethical framework for RT and O'Brien and Golding's (2003) principle of least coercion, Gass et al. (2021) propose an ethical model for justifying the use of coercion during RT admission based on the following criteria:

- (1) Consent to treatment.
- (2) Potential of harming self or others.
- (3) Ability to make rational decisions.
- (4) Ability of the treatment program to prevent potential harm to youth.
- (5) Transfer only to programs demonstrating a research-based record of success for youth with their particular needs.
- (6) Utilize programs offering the least restrictive intervention that will promote the most benefit or prevent most harm, including re-traumatization.
- (7) Use of [coercive] procedures maximizing autonomy, respect, and dignity for youth throughout the entire treatment process. (p. 6)

In sum, Gass et al. (2021) underscore the importance of an admission process that utilizes the least restrictive procedures based on the adolescent's state of willingness and decision-making capacity while also considering their risk of harm to self and others, history of trauma, and evidence that the proposed RT can provide the care needed (p. 7). When the above ethical criteria are followed, Gass et al. advocate that coercive practices can be ethically used for admitting adolescents into RT (2021).

Admission Coercion

Admission coercion includes an objective and subjective component, meaning a person experiences admission coercion objectively and subjectively (Monahan et al., 1995; Opsal et al., 2016). A person's subjective experience of coercion is most often

referred to and investigated as perceived coercion in the literature (Hoge et al., 2001). Whereas objective coercion during admission refers to the literal use of coercion, perceived coercion refers to a person's internal experience of coercion, accounting for the unobservable idiosyncratic and contextual factors embedded within the admission process (Hoge et al., 2001; Katsakou et al., 2010; Laing, 2016; McNiel et al., 2013; Winick, 2008). In this vein, perceived coercion is viewed as a more valid indicator of a person's experience of admission coercion (Katsakou et al., 2010; Laing, 2016; McNiel et al., 2013; Winick, 2008). This reasoning is also supported by research which demonstrates perceived coercion (vs. objective admission coercion) is a stronger predictor of immediate and long-term behavioral health outcomes, including emotional responses, satisfaction with treatment, adherence to treatment recommendations, and quality of behavioral change (Katsakou et al., 2010; Laing, 2016; McNiel et al., 2013; Winick, 2008).

The extant literature identifies three critical factors associated with a person's perceived coercion at admission, including objective coercion, procedural justice, and negative pressures. This dissertation discusses perceived coercion, along with these factors, within the context of adolescent RT admissions.

Objective Coercion

Objective forms of coercion during admission can be observed and documented and include the use of overt legal or interpersonal pressures to compel a person to enter treatment involuntarily (Hiday et al., 1997). Various terms for objective admission coercion are used in the literature, including involuntary treatment, mandated or

compulsory treatment, and formal coercion. Objective coercion can be delineated along a continuum, ranging from positive to negative pressures (Hiday et al., 1997; Szmukler & Appelbaum, 2008). Positive pressures include techniques intended to induce cooperation via reason or incentive, such as encouragement and friendly persuasion. Negative pressures involve techniques intended to compel acceptance and cooperation via the use of threat, deceit, and acts of force (Hoge et al., 2001; O'Donoghue et al., 2014; Winick, 2008). Positive pressures are considered benign and an ethical first step before using negative pressures (Lidz et al., 1995, 1998; Winick, 2008).

Objective Coercion and RT Admission

In RT admissions, objective coercion can occur in various forms, including: (a) exclusion from the decision-making process, (b) deceit, (c) threat of harsher consequences such as a more restrictive treatment environment, or (d) the use of force (Gass et al., 2021; Nytingnes et al., 2018; Russell, 2006; Tucker et al., 2018). The literature identifies caregivers, the legal system, admission staff, and secure transport services as common sources of objective coercion for adolescents entering RT (Gutterswijk et al., 2020; Nytingnes et al., 2018; Russell, 2006; Tucker et al., 2018). For example, after unsuccessfully exhausting efforts to encourage their adolescent child to voluntarily seek treatment, a caregiver may resort to verbal ultimatums and eventually threats, deceit, or physical intimidation and force to compel their child to enter treatment (Nytingnes et al., 2018; Persi et al., 2016). Equally, adolescent offenders may be compelled by a juvenile court judge to attend RT with the looming threat of harsher legal penalties if they refuse or fail to complete treatment (Gutterswijk et al., 2020; Kaltiala-

Heino, 2010; Persi et al., 2016; Ten Brummelaar et al., 2018). After a caregiver or judge makes the decision for treatment, they may employ a secure transport service to ensure an adolescent is safely transported to treatment (Persi et al., 2016; Tucker et al., 2018).

Secure transport services may resort to coercive tactics, including physical or mechanical restraint, to manage adolescents' aggressive behavior or prevent them from leaving their care during transport (Persi et al., 2016). Once the adolescent arrives at the RT facility, RT staff may employ coercive tactics to ensure the adolescent remains in their care, such as locked seclusion, physical restraint, or threat of harsher penalties if they leave (e.g., Green-Hennessy & Hennessy, 2015; Russell, 2006, 2007; Ten Brummelaar et al., 2018).

Involuntary Youth Transport

Involuntary youth transport (IYT) is a form of secure transport that generally involves entrusting staff employed by a third-party service to safely admit an involuntary adolescent into RT. IYT can involve a wide range of coercive techniques, including the four categories discussed in the preceding section: (1) exclusion from the decision-making process, (2) therapeutic deceit, (3) threats of harsher consequences, and (4) overt force (Gass et al., 2021; Nytingnes et al., 2018; Russell, 2006; Tucker et al., 2018). The true prevalence of IYT is also unknown, though it is documented as a standard practice across various RT settings (Chatfield et al., 2020; Gass et al., 2021; Mooney & Leighton, 2019). A 2018 survey by the Outdoor Behavioral Healthcare Research Center (cited in Gass et al., 2021) reported that the use of IYT varied widely across its more than 20 member U.S. wilderness programs, ranging from 0 to 83% with a mean and median score of 53%. Other wilderness therapy research reports IYT rates ranging from 50.9% (Tucker

et al., 2015) to 64.5% (Tucker et al., 2018). In short, IYT is reasoned a common form of RT admission, particularly in outdoor wilderness programs.

Perceived Coercion

As previously noted, a person's subjective experience of coercion is often referred to as perceived coercion in research (Hoge et al., 2001). Perceived coercion within the admission process refers to a person's internal perceptual experience of influence and control over choice during the admission process (Gardner et al., 1999; Klag et al., 2006; Rourke et al., 2015). Like objective coercion, perceived coercion is a continuous construct and can be delineated along a continuum, ranging from low to high levels. While perceived coercion is empirically examined in the adult behavioral health literature, it has received significantly less attention in the adolescent literature, with no current peer-reviewed studies of perceived coercion at admission in adolescent RT. To the best of my knowledge, this dissertation is the first research analysis of perceived coercion and IYT among adolescents entering RT.

Relationship with Objective Coercion

Objective coercion, including formal legal coercion, is cited as the strongest predictor of perceived coercion in the adolescent and adult treatment literature (e.g., Newton-Howes & Stanley, 2012). Notwithstanding, not all persons subjected to objective coercion during admission endorse perceived coercion (Hoge et al., 2001; Newton-Howes & Stanley, 2012). Equally, high levels of perceived coercion are endorsed by many voluntarily admitted persons who do not experience objective coercion (Newton-

Howes & Stanley, 2012; O'Donoghue et al., 2014; Opsal et al., 2016; Wynn, 2018). For example, Newton-Howes and Stanley's (2012) systematic review on the international prevalence of perceived coercion showed approximately 74% of formally coerced older adolescent and adult psychiatric patients endorsed high-perceived coercion, with 26% endorsing no perceived coercion. Moreover, 25% of the informal or voluntarily admitted patient group endorsed high-perceived coercion (Newton-Howes & Stanley, 2012). Similarly, Nytingnes et al.'s (2018) cross-sectional analysis of adolescent inpatients showed approximately 75% of adolescents admitted involuntarily and 20% admitted voluntarily endorsed high-perceived coercion.

These findings are also replicated in other adult psychiatric literature (Anestis et al., 2013; O'Donoghue et al., 2014; Opsal et al., 2016; Wynn et al., 2018). Anestis et al.'s (2013) research of 125 (50.4% involuntary) adult inpatients in Australia found reports of high perceived coercion across voluntary and involuntary admissions with no statistically significant differences between these two groups. O'Donoghue et al.'s (2014) cross-sectional analysis of 161 (48.4% involuntary) adult patients in three psychiatric hospitals in Ireland showed 80% of involuntary and 22% of voluntary patients endorsed high-perceived coercion. Equally, Opsal et al.'s (2016) cross-sectional analysis of 192 (32.8% involuntary) adult patients across three Norwegian psychiatric treatment centers reported 92% of voluntary patients endorsed perceived coercion while 14% of involuntary patients did not endorse perceive coercion. Finally, Wynn et al.'s (2018) systematic review of involuntary admissions in Norwegian adult psychiatric hospitals identified 21 studies specific to perceived coercion. This review also found that perceived coercion was frequently endorsed among voluntary and involuntary adult psychiatric patients at

admission, though involuntary patients endorsed it more often (Wynn et al., 2018). In essence, the current evidence shows that objective and perceived coercion are strongly correlated, yet there is also significant variability in this association (Iversen et al., 2007; O'Donoghue et al., 2014; Opsal et al., 2016; Wynn, 2018).

Procedural Justice and Negative Pressures

The extant literature identifies two additional factors related to a person's perceived coercion during admission beyond objective coercion, including the perception of procedural justice and negative pressures (Hoge et al., 2001). Among these two factors, research has shown procedural justice, especially voice, to be the strongest predictor of perceived coercion, though both show a statistically meaningful effect when controlling for the other (Gardner et al., 1999; Newton-Howes & Mullen, 2011; O'Donoghue et al., 2014). Voice represents one of two aspects of procedural justice (Hiday et al., 1997). Procedural justice refers to the extent a person believes they were: (a) able to voice and have their concerns listened to (i.e., validated) and (b) treated with respect and fairness from others during the admission process (Anestis et al., 2013; Hiday et al., 1997; Hoge et al., 2001). A person's perception of negative pressures represents their perceptual experience of negative pressures, as described previously, including the use of threat, deceit, intimidation, and force (Hoge et al., 2001). Similar to perceived and objective coercion, a person's perception of negative pressures does not always correlate with the objective use of negative pressures (Lidz et al., 1995, 1998, 2000; Monahan et al., 2001).

In general, research demonstrates that a person who perceives high negative pressures and low procedural fairness during admission will be more likely to endorse higher levels of perceived coercion in comparison to those who perceive low negative pressures and high procedural justice (Hoge et al., 2001). This reasoning appears to hold irrespective of whether a person is objectively coerced into treatment (Iversen et al., 2007; O'Donoghue et al., 2014; Opsal et al., 2016; Wynn, 2018).

Perceived Coercion and RT Admission

Perceived coercion within the context of adolescent RT admissions has not been investigated in the extant literature. In drawing on the above information, an adolescent's perceived coercion during RT admission reflects their perception of influence and control over choice during admission (Hoge et al., 2001). While objective coercion during admission is assumed to be associated with adolescents' perceived coercion, their perception of procedural justice and negative pressures are considered equal if not more important factors (Gardner et al., 1999; Newton-Howes & Mullen, 2011; O'Donoghue et al., 2014). For example, when adolescents admitted into RT believe they were: (a) able to voice and have their concerns listened to, (b) treated fairly and with respect, and (c) not threatened, intimidated, or forced to enter treatment, they are reasoned more likely to endorse less perceived coercion than their counterparts. Consistent with the adult literature, this reasoning is assumed to hold irrespective of an adolescent's involuntary (or voluntary) status at admission (Opsal et al., 2016). In sum, whether or not an involuntary or voluntary adolescent endorses perceived coercion is related to the use of objective coercion but hinges largely on their perception of procedural justice—voice and

fair treatment—and negative pressures during admission.

Prevalence data for perceived coercion in adolescent RT admissions are also omitted in the extant literature. However, prevalence data does exist for other out-of-home treatment settings. As previously noted, Newton-Howes and Stanley's (2012) conducted a systematic review to assess the international prevalence of perceived coercion in inpatient psychiatric care admissions. Their research identified 18 qualifying studies, including four from the U.S., with 3489 patients, ages 16-65 years old. In addition to finding strong correlations between objective and perceived coercion, they found that international prevalence rates for perceived coercion varied widely across studies, ranging from 16 to 90%, with no clear indicators for this variability. Rates of perceived coercion were narrower but still highly variable in the four U.S. studies, ranging from 22 to 51% with an overall average of 38% (Newton-Howes & Stanley, 2012). While Newton-Howes and Stanley's (2012) research included participants ages 16 to 18, it did not discuss prevalence rates specific to this age group and excluded RT. A more recent study of 96 adolescents across 10 Norwegian psychiatric wards reported 34.4% of adolescents endorsed high-perceived coercion (Nyttingnes et al., 2018). In sum, perceived coercion is prevalent among adolescents and adults in inpatient psychiatric care settings, with current research showing that one-third or more of inpatients endorse perceived coercion during admission. This, combined with the high prevalence of objective coercion in RT settings, suggests perceived coercion is also common in RT (Nyttingnes et al., 2018). The fact that prevalence rates for perceived coercion during admission have not been examined in adolescent RT literature highlights the need for such research.

Outcomes Related to Admission Coercion

Overall, outcome research on admission coercion is conflicting and limited, especially in regards to adolescent RT. To my knowledge, only two outcome studies on admission coercion in adolescent RT exist, which focus on IYT in wilderness therapy programs (Tucker et al., 2015, 2018). In this research, adolescents who were admitted via IYT reported no differences in discharge and post-discharge mental health outcomes in comparison to those who were not transported (Tucker et al., 2015, 2018). Research in related behavioral healthcare domains links clients' perceived coercion at admission to negative emotional responses, less satisfaction with treatment, poorer quality of life, and diminished therapeutic alliance in follow-up treatment (Gardner et al., 1999; Kallert et al., 2011; Kaltiala-Heino et al., 1997; Link et al., 2008; Riley et al., 2014). At the same time, other research reports no statistically significant differences in psychological functioning, engagement, adherence, risk of future violence, or readmission among clients who experienced higher coercion at admission (Jaeger et al., 2013; Monahan et al., 2001; Newton-Howes & Mullen, 2011; Schreyer et al., 2016; Rain et al., 2003). The lack of empirical inquiry of perceived and objective coercion in adolescent RT admissions underscores a gap in the literature and the need for this dissertation's research.

Therapeutic Implications

Given the lack of outcome research on admission coercion, it is necessary to draw on established psychological theory and related research to discuss potential therapeutic implications related to the use and perception of coercion among adolescents entering RT. In particular, this dissertation draws on Self-Determination Theory (SDT) and

Psychological Reactance Theory (PRT) to provide a theoretical foundation for understanding coercion during the admission process and its role in different immediate and long-term trajectories of motivation and change for adolescents entering RT (Rains, 2013; Ryan & Deci, 2008). These theories suggest that coercion, especially perceived coercion, can violate an adolescent's autonomy, thwart motivation, incite psychological reactance, and undermine the therapeutic relationship—all central components to therapeutic change in behavioral healthcare (Rains, 2013; Ryan & Deci, 2008). While these theories are discussed in detail in Chapter 2, therapeutic implications related to motivation and psychological reactance are concisely discussed below. Developmental factors unique to adolescence are also discussed, as they can play a role in how adolescents experience and react to coercion (Berger, 2020; Grandpre et al., 2003).

Motivation

Motivation is considered the driving force behind therapeutic change (Krebs et al., 2018; Ryan & Deci, 2017). Motivation is often considered an indicator of a person's likelihood of engaging and responding well to therapeutic intervention, including RT (Krebs et al., 2018; Prochaska et al., 2002; Ryan et al., 2015). Coercion can impede a person's motivation to change (Krebs et al., 2018; Ryan & Deci, 2017). When a person changes under duress related to coercion, it is often viewed as a compliance strategy versus indicative of lasting therapeutic change (e.g., Riley et al., 2014). This issue of temporary change is a central concern in RT settings which are yet to demonstrate a strong evidence base for positive long-term treatment outcomes (Gutterswijk et al., 2020; Harder et al., 2012; Knorth et al., 2008).

Psychological Reactance

Psychological reactance is an adverse cognitive and emotional state where a person is motivated to resist a perceived threat or imposed restriction on their freedom (Brehm & Brehm, 1981; Lewing & Caraway, 2019; Provan, 2013). Psychological reactance represents a specific form of resistance induced by a person's environment (Beutler et al., 2011). This definition excludes resistance towards change that originates from within a person but instead focuses on the person-environment interaction contribution to resistance (Beutler et al., 2011). When a person experiences psychological reactance, they often endorse feeling angry and being treated unjustly, which can result in them becoming non-compliant and oppositional towards the requested task and source of the request (Dillard & Shen, 2005; Dorner & Guss, 2013; Provan, 2013; Sittenthaler et al., 2015; Quick & Stephenson, 2007). Adverse emotions, such as anger, can also impair a person's capacity to adapt to a novel environment, such as RT (Dorner & Guss, 2013; McNiel et al., 2013; Newton-Howes & Mullen, 2011; Rains, 2013; Sittenthaler et al., 2015; Van Petegem et al., 2012, 2015). Coercion, which involves an imposed restriction on one's freedom from an outside source, is considered a powerful catalyst for a person experiencing psychological reactance (Provan, 2013).

By way of extrapolation, the use of coercion during RT admission may induce psychological reactance in adolescents, leading them to endorse a more negative admission experience and perhaps increase their resistance toward treatment (Brehm & Brehm, 1981; Kaltiala-Heino, 2010; Lewing & Caraway, 2019; Van Petegem et al., 2015). In such situations, an adolescent may remain oppositional toward treatment after admission, resulting in additional barriers to change and possibly early termination from

treatment (e.g., Kaltiala-Heino, 2010; Kaltiala-Heino et al., 1997; Ryan & Deci, 2017; Van Petegem et al., 2015). Taken together, reducing coercion during RT admissions is an important issue with direct implications on adolescents' immediate and long-term treatment outcomes.

Adolescence

Adolescence is a dynamic period of psychosocial development, where establishing autonomy, a personal identity, and social status are essential to optimal functioning (Erikson, 1968; Meschke et al., 2012; Spear & Kulbok, 2004; Yeager et al., 2018). Despite differences in cultural norms and expectations, these aspects of development are considered universal across cultures. Research has yielded a considerable amount of evidence linking autonomy and identity development to enhanced overall functioning and well-being irrespective of culture (Chen, Van Assche, et al., 2015; Chen, Vansteenkiste, et al., 2013, 2015; Chirkov et al., 2003, 2011; Ryan et al., 2016).

Adolescence is also a time of rapid physiological changes and increased brain development (Berger, 2020; Casey et al., 2008; Meschke et al., 2012). These factors are associated with an adolescent's increased cognitive capacity for rational reasoning, which coincides with an increased desire for autonomous decision-making (Erikson, 1968; Spear & Kulbok, 2004; Yeager et al., 2018). Notwithstanding, the brain's prefrontal cortex is not fully developed until a person's mid-20s to late 30s (Casey et al., 2008; Hamilton et al., 2020). As a result, poor and impulsive decision-making are especially common during adolescence (Berger, 2020; Wolff & Crockett, 2011).

An adolescent's increased desire towards establishing personal autonomy can increase their resistance towards the influence of authority figures, making them especially prone to experiencing psychological reactance (Berger, 2020; Grandpre et al., 2003; Van Petegem et al., 2015). This resistance can hold even when it contradicts their internal desires and values (Grandpre et al., 2003; Van Petegem et al., 2015). Therefore, adolescents may be anticipated to show low motivation, resist, or refuse RT even when they internally want help. For these reasons, the use of coercion and its implications may warrant additional considerations for adolescents compared to adults.

In sum, motivation is an essential component of lasting therapeutic change (Ryan & Deci, 2018). Psychological reactance represents a form of motivated resistance that emerges from a person's interaction with their environment, especially when they perceive a loss or threat to their freedom from an external source (Provan, 2013; Rains, 2013). Psychological reactance includes a host of negative emotions, perceptions, and behaviors that thwart autonomous motivation and hinder therapeutic change (Rains, 2013; Van Petegem et al., 2015). Coercion—an imposition from an external agent that restricts choice—can induce psychological reactance in a person, thereby evoking a negative reaction towards the imposed restriction and source (Van Petegem et al., 2015).

Adolescents, in particular, may perceive coercion during RT admission as a threat to their autonomy, social status, and identity (Meschke et al., 2012; Ryan et al., 2015; Yeager et al., 2018). These developmental factors are considered important to adolescents irrespective of culture (Ryan et al., 2016). As a result, adolescents entering RT may be increasingly susceptible to exhibiting low motivation and experiencing psychological reactance in response to admission coercion (Grandpre et al., 2003; Kaltiala-Heino, 2010;

Miller & Rollnick, 2013; Provan, 2013; Van Petegem et al., 2015). This underscores the need for research-informed practice surrounding the use of coercion and reducing its experience among adolescents entering RT (Kaltiala-Heino, 2004; Nytingnes et al., 2018).

Relevance to Social Work Practice and Dissertation Questions

Social workers are bound to a universal set of professional ethics to promote client self-determination, dignity, and well-being. However, in considering the above, how do social workers respond when an adolescent client's desired choice stands in conflict with what parents and others in authority determine is best? Referencing the use of admission coercion, Lidz et al. (2000) note:

Mental-health professionals are caught between using coercive mechanisms and abandoning their commitment to providing the care that they believe is necessary ... Thus it is crucial when making decisions about the appropriateness of using pressures to get patients into treatment to balance the immediate clinical benefit with the potential damage to the patient's relationship to mental health care. (p. 79)

Ethical approaches, including Gass et al.'s (2021) recommendations for using coercion in adolescent RT admissions and O'Brien and Golding's (2003) principle of least coercion, are noted above. However, research is yet to investigate the effectiveness of such approaches with adolescents, leaving social workers and other behavioral health professionals with a lack of guidance on promoting well-being among adolescents who require involuntary placement in RT.

In recognizing this dilemma, Lidz et al. (1998) further commented:

Whether or not the use of coercion to ensure that mentally ill people receive treatment is justified is a controversy that cannot be entirely resolved by empirical research. However, it is preferable to minimize patients' perceptions of being

coerced, both because it seems inherently undesirable for anyone to feel coerced and because those feelings may undermine cooperation with subsequent treatment. (p. 1258)

Therefore, this dissertation explores the following research questions:

1. As measured by the MacArthur Admission Experience Survey and program admission data, what is the role of negative pressures and voice exclusion on the relationship between involuntary youth transport and perceived coercion at admission and how can this be modeled?
2. As measured by the MacArthur Admission Experience Survey and program admission data, what is the role of negative pressures, voice exclusion, and perceived coercion on the relationship between involuntary youth transport and psychological reactance, specifically angry emotion, among adolescents at admission and how can this be modeled in relation to the question 1?

To answer these questions, this dissertation utilizes secondary de-identified data from a Utah-based outdoor RT program that was originally collected in conjunction with a larger study of the National Association of Therapeutic Schools and Programs (NATSAP) Research and Evaluation Network. Secondary data analysis is an effective and efficient method for addressing the research questions of this dissertation.

CHAPTER 2

LITERATURE REVIEW AND THEORY

Admission Coercion Literature

This dissertation discusses admission coercion within the context of adolescents entering behavioral healthcare residential treatment (RT) settings. Due to the scarcity of research on admission coercion within this context, it is necessary to draw on relevant research from other out-of-home behavioral healthcare settings for adolescents and adults to provide a foundation for this research. Both objective and perceived coercion during admission are examined in the extant literature across various out-of-home treatment settings, with the largest volume of research exploring the admission experiences of adults in inpatient psychiatric settings. While research on objective admission coercion is discussed, individuals' perceived coercion at the time of admission is the primary focus of this literature review and dissertation.

Objective Coercion in RT Admissions

As noted in Chapter 1, objective forms of admission coercion can be described along a continuum of pressures, ranging from positive pressures, including techniques to induce cooperation via reason and incentive, to negative pressures, including therapeutic deception, threat and intimidation, and overt force (Hoge et al., 2001; O'Donoghue et al., 2014; Winick, 2008). Positive pressures are considered benign and non-coercive, whereas

negative pressures are considered coercive (Lidz et al., 1995, 1998; Winick, 2008). Often, however, objective coercion falls in the middle of positive and negative pressures, such as is the case when an adolescent is mandated to treatment despite cooperating with it. Equally, a caregiver may inform an adolescent that the decision for RT has been made without prior discussion, but without the use of deceit or explicit threats. Several forms of admission coercion in adolescent RT and other out-of-home treatment settings are cited in the literature, including physical holds, mechanical restraints (i.e., handcuffs), financial and other forms of leverage, legal mandates, threats of harsher consequences, exclusion from the decision-making process, deception, and involuntary youth transport (IYT; Blikshavn et al., 2020; Gass et al., 2021; Griffiths et al., 2021; Nytingnes et al., 2018; Russell, 2006; Seed et al., 2016; Tucker et al., 2018).

Research on Objective Coercion in RT Admissions

Research on objective coercion is especially limited for adolescents entering RT and other out-of-home placements. As noted in Chapter 1, only two studies were identified in the extant literature addressing its use in adolescent RT admissions. These studies examined the coercive admission practice of IYT, as defined in Chapter 1, concerning treatment outcomes in wilderness therapy programs (Tucker et al., 2015, 2018).

Tucker et al. (2015) examined 165 adolescents entering wilderness therapy, including 50.9% admitted via IYT. They found that adolescents entering via IYT exhibited a higher level of acuity regarding socially-related behavioral problems. However, they found no differences in readiness to change at admission or psychosocial

functioning at discharge between transported and non-transported adolescents. Their data also showed that transported adolescents improved their readiness to change scores from admission to discharge similarly to those not transported. Based on these findings, they reasoned that adolescents entering wilderness therapy via IYT could experience positive outcomes similar to non-transported adolescents (2015).

Tucker et al. (2018) examined IYT in relation to psychosocial treatment outcomes among 645 adolescents across four wilderness program sites. They reported 64.5% of adolescents in their study entered via IYT. In contrast to the previous study, this research found similar acuity levels among adolescents at admission irrespective of IYT. Consistent with the previous study, their research showed adolescents entering treatment via IYT experienced similar positive outcomes to non-transported adolescents. While cautioning that not all IYT services are equivalent in standards and qualifications, they reasoned that IYT appeared conducive to adolescent treatment, as it provided an opportunity for involuntary adolescents to experience similar positive outcomes to those who enter voluntarily (2018).

In a related domain of adolescent research, Kaltiala-Heino (2010) analyzed case histories of 187 (49.7% involuntary) adolescents (ages 13-17) who attended a university psychiatric hospital in Finland to identify differences between those who entered treatment involuntarily versus voluntarily. According to their data, involuntarily admitted adolescents presented more often with suicidal ideation, acute psychiatric symptoms, and hostile, violent, and destructive behavior than their voluntary counterparts (Kaltiala-Heino, 2010).

In another study, Persi et al. (2016) examined 237 children and adolescents admitted to inpatient psychiatric care in Canada. According to their data, approximately 80% of children and adolescents referred to inpatient treatment were involuntary. In contrast to Kaltiala-Heino's (2010) findings, involuntary adolescents did not differ from those who entered voluntarily in the severity of mental illness or diagnosis. Involuntary adolescents also did not require more intensive care than voluntary adolescents. However, involuntary adolescents were at a higher risk for suicide and more likely to enter treatment via secure transport, including ambulance, taxi via escorts, and police vehicle via escorts (Persi et al., 2016). Both of these studies (Kaltiala-Heino, 2010; Persi et al., 2016) are lacking, given that neither evaluated post-treatment outcomes. However, they underscore the lack of empirical investigation surrounding involuntary admissions, including the use of objective coercion, highlighting the need for additional research in this domain of adolescent treatment (Persi et al., 2016).

Perceived Coercion in RT Admissions

In the context of RT admissions, perceived coercion refers to the adolescent's perspective of influence and control over choice while entering treatment (Hoge et al., 2001; Monahan et al., 1999, 2001). Additional discussion and examples of perceived coercion in adolescent RT admission is provided in Chapter 1. To my knowledge, this dissertation represents the first research analysis of perceived coercion among adolescents during RT admission. As a result, relevant adult and adolescent literature in related out-of-home treatment settings are reviewed to provide context for this research.

Perceived coercion within the context of the admission process first appeared in the behavioral health literature in the late 1970s (e.g., Shannon, 1976). However, rigorous investigation of perceived coercion did not emerge until the late 1980s and early 1990s with the MacArthur Research Group's Coercion Study (Hoge et al., 2001; Monahan et al., 1999). While this research focused on adults during their admission into psychiatric hospitals (versus adolescents entering RT), it provided the foundation for the current admission research on perceived coercion for adults and adolescents. Therefore, this section begins by reviewing this research.

The MacArthur Coercion Study

The MacArthur Coercion Study represents the most comprehensive and rigorous investigation of perceived coercion which resulted in several instrumental studies (Hoge et al., 2001). Four of these studies are discussed in this section, which are linked to more than two dozen peer-reviewed publications and are continuing to inform research to this date (Hoge et al., 2001; O'Callaghan et al., 2021; O'Donoghue et al., 2011, 2014).

The MacArthur Coercion Study furthered research on admission coercion in three main ways. First, involuntary status is only a "blunt" index of a person's experience of admission coercion, as they found a minority of voluntary persons perceived high coercion and a minority of involuntary persons perceived low coercion at admission (Hoge et al., 2001; Monahan et al., 1999, 2001). Second, their research developed the MacArthur Admission Experience Interview and Admission Experience Survey, which included three validated self-report measures for perceived coercion, voice (originally procedural justice), and negative pressures (Gardner et al. 1993; Hiday et al., 1999).

Third, a person's report of experiencing negative pressures during admission strongly influences their level of perceived coercion, while positive pressures do not (Hoge et al., 2001). Fourth, a person's experience of procedural justice, especially voice, during the admission process is perhaps the strongest predictor of perceived coercion irrespective of involuntary (or voluntary) status (Hiday et al., 1997; Hoge et al., 2001; Lidz et al., 2000).

Study 1: Development of Perceived Coercion Scale

Their first study resulted in two scales measuring patients' admission experience, including perceived coercion, at admission into a psychiatric hospital: the MacArthur Admission Experience Interview and Admission Experience Survey (Gardner et al., 1993). This study included two samples of adult psychiatric patients across two hospital sites. The first sample included 161 adult patients at both psychiatric hospitals in Pennsylvania and Virginia. The second sample included 50 adult patients at only the Pennsylvania site. Patients in the first sample participated in a 30-minute admission experience interview immediately followed by a 104-question admission experience survey. Only the latter part of the admission experience interview focused on perceived coercion and included four questions on patients' perceptions of influence, control, choice, and freedom during admission. The admission experience survey included five questions on perceived coercion, asking about patients' perceptions of influence, control, choice, freedom, and idea. These five questions evolved into the MacArthur Perceived Coercion Scale (PCS) and are included below as an adapted version of this scale is used in this dissertation:

“I had more influence than anyone else on whether I came into the hospital.”
 “I had a lot of control over whether I went into the hospital.”

“I chose to come into the hospital.”

“I felt free to do what I wanted about coming into the hospital.”

“It was my idea to come into the hospital.” (Gardner et al., 1993, p. 310)

After completing data collection from the first sample, Gardner et al. (1993) conducted a correspondence analysis. The authors described this analysis as similar to principal components analyses and appropriate for identifying latent quantitative variables in multivariate categorical data sets. Using this approach, they concluded that all perceived coercion questions on the admission experience interview and survey were indicators of a single latent factor: “perceived coercion during mental hospital admission” (p. 314). They also concluded that factor loadings for all observed and latent factors were similar across both measurements and hospital sites (1993).

Gardner et al. (1993) administered only the admission experience survey to participants in their second sample and reduced its length to 41-questions. The purpose of the second sample was to investigate if using a shorter admission experience survey as a standalone measure would yield similar results to the full interview. Using the same analysis approach, they found that patients' responses were internally consistent across both measurements ($r = .79$) and samples. From these results, they concluded a five-question survey (i.e., PCS) was a more efficient method of measuring patients' perceived coercion at admission in comparison to a formal interview. The authors also noted that the distribution among PCS scores was bimodal across both measurement formats and samples, meaning patients tended to either endorse high or low perceived coercion with slight variation in-between (Gardner et al., 1993).

Study 2: Contributors of Perceived Coercion

Study 2 included a sample of 157 randomly selected psychiatric inpatients, ages 17 and older, from two hospitals in Virginia and Pennsylvania in 1991 (Hoge et al. 2001). Forty-two percent of this sample was admitted involuntarily. This study relied on patient self-reports to further their understanding of patients' experiences of the admission process, along with the factors related to patients' perceived coercion. The primary measure in this study was the MacArthur Admission Experience Interview, which included: the five-question PCS, (b) a four-question admission pressures scale for positive and negative pressures, and (c) a six-question procedural justice scale for perceptions of fairness and voice during admission (Lidz et al., 1995). As previously discussed, positive pressures refer to persuasion and inducement strategies; whereas, negative pressures refer to threat, deceit, and force (Lidz et al., 1995; Monahan et al., 1999). Participants completed this interview within the first 48-hours of admission.

In this research, Lidz et al. (1995) posited that three factors contributed to a person's perceived coercion, including external pressures from others (i.e., positive and negative pressures), demographic characteristics, such as gender and race, and perceptions of being listened to and treated fairly (i.e., procedural justice). They reasoned that a person who enters treatment "voluntarily" might not believe they had a choice if they felt threatened by others with harsher consequences and did not feel listened to or treated fairly. They also reasoned that different demographic and cultural groups might perceive the admission process differently (1995).

Lidz et al. (1995) first employed principal components analysis to create a procedural justice scale to analyze their data. Following this, multiple regression analysis was used to evaluate the association of procedural justice, positive pressures, negative

pressures, involuntary status, and patient demographics with perceived coercion. Principal components analysis revealed a single latent factor of the six questions (with correlations ranging from .37 and .77) on the procedural justice scale. Bivariate regression analyses showed patients' beliefs of procedural justice, reports of negative pressures, and involuntary status were strongly correlated with perceived coercion at admission, respectively at $r = .72$, $r = .60$, and $r = .50$. However, neither positive pressures nor demographic variables, including age and gender, showed statistically significant associations with perceived coercion. Race initially showed a statically significant correlation with perceived coercion ($r = -.20$), procedural justice ($r = .17$), involuntary status ($r = -.23$), and negative pressures ($r = -.15$). In particular, African Americans reported more procedural justice and less perceived coercion and negative pressures in comparison to white Americans. When hospital site was considered, however, race was not significantly correlated with these variables. Neither age nor gender was associated with procedural justice, involuntary status, or negative pressures (1995).

Lidz et al.'s (1995) multiple regression analysis demonstrated a person's perception of procedural justice was the strongest predictor of perceived coercion and remained statically significant when controlling for negative pressures, involuntary status, and hospital site. Involuntary admission status was the second strongest predictor of perceived coercion and remained significant when controlling for procedural justice and perceived negative pressures, though this varied across hospital sites. Perceived negative pressures were also a statistically significant predictor of perceived coercion when controlling for procedural justice and involuntary status, but this also varied across

hospital sites. The authors attributed this discrepancy between negative pressures and involuntary status with perceived coercion based on hospital site to the lack of variation in perceived coercion among voluntary patients. Further, most of the patients at the Virginia hospital site (82%) were admitted on voluntary status, which accounted for two-thirds of the overall sample (1995).

In sum, Lidz et al.'s (1995) findings demonstrated that factors other than involuntary admission influence a person's perceived coercion at admission, including the perception of procedural justice and negative pressures during admission. Positive pressures, however, did not appear to influence a person's perceived coercion. While the authors noted this finding supported the idea that positive pressures are benign, they also reasoned that positive pressures might often lead to more negative pressures, making it difficult to measure their unique contribution. A person's demographics, including age, race, and gender, did not influence a person's perceived coercion. Finally, procedural justice was the strongest predictor of a person's perceived coercion at admission compared to involuntary status and negative pressures of perceived coercion (1995).

While Lidz et al.'s (1995) findings are limited to adult patients entering a psychiatric hospital, their research offered evidence that involuntary admission status is an incomplete measure of a person's experience of coercion during admission. Other factors, including a person's perception of procedural justice and negative pressures, also play an essential role in perceived coercion at admission. In discussing the implications of their findings, Lidz et al. stated:

By opening up the process of the admission to the patient's point of view and being respectful and attentive to their suggestions and concerns, some of the negative consequences of coercion might be mitigated. (1995, p. 1093)

In a subsequent analysis of this same sample, Hoge et al. (1997) used both qualitative and quantitative approaches but focused on patients' understanding of the admission process. In their research, Hoge et al. (1997) classified patients into four groups based on their perceived coercion and involuntary status, including (a) coerced involuntarily, (b) uncoerced voluntary, (c) coerced voluntary, (d) uncoerced involuntary. According to their data, coerced voluntary admissions accounted for 10% of voluntary admissions, and uncoerced involuntary admissions accounted for 35% of involuntary admissions.

Hoge et al. (1997) utilized narrative analysis to investigate patients' perceptions during admission, particularly in the coerced voluntary and uncoerced involuntary admission groups. Hoge et al. (1997) provided the following two examples of (coerced) voluntary patients entering treatment via interpersonal pressures, including threats of harsher consequences, from loved ones:

In one case, a young man with Obsessive-Compulsive Disorder was told by his mother that she would withdraw her assistance with his ritualistic behavior and "put him somewhere" if he did not enter the hospital. (p. 176)

In a second case, a young woman with a substance-abuse problem was brought to the hospital emergency room by her boyfriend, who told her that their relationship was over unless she sought help. (p. 176)

In discussing the uncoerced involuntary group, Hoge et al. (1997) noted the following:

[Patients] reported they wanted to be admitted; involuntary admission procedures appear to have been used in order to arrange transportation to the hospital or for other reasons related to the policies of the mental health system. (p. 176)

A fourth [patient], recently discharged from the hospital, apparently became acutely disordered at home and agreed with her mother that she should be re-admitted. The mother called the treating clinician, who initiated the involuntary

process that permitted the sheriff to transport the subject from home to the hospital. (p. 177)

A fifth [patient], an outpatient, reported suicidal ideation to her therapist during treatment. The [patient] agreed with the therapist's assessment that hospitalization was necessary. The therapist initiated involuntary hospitalization procedures so the sheriff could take her to the hospital. (p. 177)

These data illustrate how involuntary procedures, such as forms of secure transport, can be associated with systemic factors (i.e., policies of the mental health system) and utilized by patients who desire or choose to enter treatment on their own. They also show how interpersonal processes that do not involve threat (or other negative pressures) can be conducive in assisting the person to choose treatment autonomously (1997).

Study 3: Validity and Stability of Patients' Perceptions

The MacArthur Coercion Research's third important study included a randomly selected sample of 433 adult inpatients from the same psychiatric hospitals (in study two) but expanded their research to include patient perceptions at admission and one month following admission (Hoge et al., 2001). Subsequently, patients' admission perceptions were compared with reports from family members, admitting clinicians, and documented accounts of what occurred during admission. This research resulted in multiple publications (e.g., Gardner et al., 1999; Hoge et al., 1998; & Lidz et al., 1997, 1998, 2000;) that contributed to the knowledge base of patients' perceptions surrounding the admission process, the stability of these perceptions, and how they compared with the perspectives of others involved and available documentation (Hoge et al., 2001).

Hoge et al.'s (1998) analysis addressed two critical questions from this sample:

- (1) How Do Family and Clinician Perceptions of Coercion Compare with the Perceptions of Patients?
- (2) Are the Determinants of Family and Clinician Perceptions of Coercion the Same as the Determinants of Patient Perceptions of Coercion? (p. 133)

In addition to the 433 patient participants, Hoge et al. (1998) included 210 family participants and 372 clinician participants with 185 cases where patient, family, and clinicians all participated. Of note, friends and allied professionals were combined with family members in the "family" variable. Trained research assistants administered the following measures to all participants, including the MacArthur Admission Experience Interview, Perceived Coercion Scale (PCS), four self-reported admission pressures, including persuasion and inducement (positive pressures), and threats and force (negative pressures), and Procedural Justice Scale. Patient chart reviews were utilized to collect additional demographic data related to patients' diagnosis and course of treatment (1998).

In regards to Hoge et al.'s (1998) first research question, correlational analysis showed moderately strong associations (ranging from $r = .57 - .63$) between all three groups' perceived coercion scores at the level of statistical significance ($p < .001$). Race was the only demographic variable associated with perceived coercion at the level of significance ($p < .001$), with white patients and their families reporting higher mean scores of perceived coercion than African Americans. There were no statistically significant differences in race in clinicians' reports on patients' perceived coercion. In evaluating the relationship between perceived coercion, involuntary status, and group (patient, family, and clinician), higher perceived coercion scores were reported for involuntary (versus voluntary) patients across all groups. Multivariate analysis of covariance (MANOVA) showed statistically significant differences in group perceived coercion scores when controlling for involuntary status. In particular, patients and

clinicians reported higher perceived coercion scores in comparison to families. For admission pressures, family reported negative pressures occurred less often than patients and clinicians. On the procedural justice scale (*Range* = 4 – 16), patients' scores were different from both clinicians and family at the level of statistical significance, with clinicians ($M = 14.37$) and family ($M = 14.30$) reporting similarly higher scores of procedural justice versus patients ($M = 12.87$; 1998).

In regards to Hoge et al.'s (1998) second question, correlational analysis showed strong associations of involuntary status, negative pressures, and procedural justice with patients' perceived coercion across all groups. Structural equation modeling analysis showed similar patterns across each of the three groups in what variables predicted perceived coercion, including the relative significance of each predictor variable (1998).

In sum, Hoge et al.'s (1998) findings suggest that patients, family (family members, friends, and allied professionals), and admitting clinicians perceive similar amounts of coercion for patients during the admission process. All groups appear to perceive higher coercion among involuntary patients. However, family members may report less perceived coercion when accounting for involuntary status. Family may also be less likely to report the use of negative pressures during admission than patients and admitting clinicians. Admitting clinicians and family members may also perceive greater amounts of procedural justice during admission versus the patient, perhaps due to the admitting clinicians and family members feeling the need to justify their actions or the tendency of patients to perceive less fairness. Finally, the predictor variables and their relative significance for perceived coercion appear to be similar for patients, family members, and admitting clinicians. Notwithstanding, Hoge et al. underscored that relying

solely on the subjective accounts from these different groups (versus objective evidence) was a significant limitation to their findings. As a result, they emphasized the need for additional research taking into account both objective and subjective data into what happened during admission to determine the validity of each group's subjective reports (1998).

In this vein, Lidz et al. (1997) examined this sample of participants with what they referred to as the *most plausible factual account* (MPFA) of coercive related behaviors during admission to evaluate the validity of patients' families' and admitting clinicians' subjective reports. Coercive-related admission behaviors included two positive pressures and four negative pressures. To calculate the MPFA, the authors triangulated chart data and interviews with others (besides the patient) involved in the admission process to determine what happened. The MPFA was also compared with accounts from the admitting clinicians and family informants (as defined in Hoge et al., 1998) involved in the admission process (1997).

In all, Lidz et al. (1997) compared and contrasted data between patient accounts, the MPFA, and others involved in the process in 171 cases. The two positive pressures included persuasion and inducement. While positive pressures are not generally viewed as coercive, the authors noted these pressures involve an external source of pressure and often precede the use of more coercive negative pressures. The four negative pressures involved included verbal threat, force (i.e., show of force, physical force, legal force), verbal orders given (without threat), and deception. Finally, this research also examined whether patients were asked their preference about the admission. The consideration of patient preference was viewed as an indicator that coercion was not used (1997).

Lidz et al.'s (1997) correlational analysis showed patient accounts (versus admitting clinician and others involved in the admission) showed the strongest association with MPFA (.51-.72) in all except one variable. For the presence of force, admitting clinician accounts showed a stronger association with MPFA (.72) than patients (.58). An additional finding of interest was the amount of difference in association with MPFA between patients' accounts of whether they were asked about their preference in admission. For this variable, patients' accounts were correlated with MPFA at .72, while admitting clinicians and others involved in admission were correlated with this variable at .18 and .12, respectively. Additionally, Lidz et al. evaluated several patient background and demographic variables related to these results, including involuntary status, patient diagnosis, cognitive differences, age, gender, race, socioeconomic status, and education. Correlational analyses and t-tests showed all of these variables were unrelated to their results (1997).

Lidz et al. (1997) interpreted their findings to suggest that patient accounts appear to be the most accurate indicator of whether coercion occurs during the admission process. However, no account was considered fully complete. Therefore, this research provides evidence that patient accounts (and perceptions) should generally be prioritized and considered more accurate than other accounts of admission coercion. However, this does not eliminate the importance of considering information from other sources, including admission staff, others, such as other mental health professionals and family members involved in the admission, and chart documentation (1997).

Subsequently, Lidz et al. (1998) further evaluated the same 171 cases, but the primary focus was on the association between objective forms of coercion-related

behaviors and patients' perceived coercion. In drawing on the most plausible factual accounts previously discussed, Lidz et al. (1998) found the following variables to be positively associated at the level of statistical significance ($p < .01$) with patients' perceived coercion at admission: persuasion (.17), verbal orders given (.50), deception (.25), verbal threats (.36), show of force (.49), legal force (.57), and physical force (.27). No statistically significant associations were found with patients' perceived coercion at admission and patients being asked about their preference (-.14) or inducement approaches (.10). Persuasion was the most commonly reported admission method (66%), and nearly half (49%) of all patients experienced some form of negative pressure, including verbal orders given (29%), deception (6%), verbal threats (19%), show of force (23%), legal force (33%), and physical force (6%; 1998).

Next, Lidz et al. (1998) categorized the different admission pressures into three categories to illustrate how these pressures commonly occur together. Persuasion, inducement, and asking about preference were categorized as positive symbolic pressures. Verbal orders given, verbal threats, deception, and show of force were categorized as negative symbolic pressures. Finally, legal commitment and physical force were categorized as force. Within this model, the data showed that negative symbolic pressures were present in the use of force 83% of the time. The data also showed that negative symbolic pressures were accompanied by positive symbolic pressures 90% of the time, supporting the idea that positive symbolic pressures may often precede the use of negative symbolic pressures. The largest group in this model was patients who experienced only positive symbolic pressures (40%). Twelve percent of patients

experienced no form of pressure, and 21% experienced each form of coercive pressure (1998).

Finally, Lidz et al. (1998) examined a regression model of force, negative symbolic pressures, positive symbolic pressures (but only statistically significant ones with perceived coercion in the bivariate analysis), and race. Race was selected because it was the only demographic variable, including age, gender, social class, diagnosis, comorbid substance abuse, education, and hospital site, correlated with perceived coercion at the level of statistical significance. In their sample, African Americans reported less perceived coercion in comparison to other patients. While race was statistically significant in the overall model, Lidz et al. noted that it was not statistically significant when controlling for the hospital site. The results of their regression analysis showed statistically significant associations between force, negative symbolic pressures, and race with perceived coercion. Positive symbolic pressures showed no statistical significance. In all, this regression model accounted for 43.3% of the variance in perceived coercion. In addressing the remaining variance, the authors note that procedural justice, including the perception of voice and fair treatment, was not examined in their analyses but had previously been shown to account for the majority of the variance of perceived coercion compared to negative pressures. As a result, they reasoned that patients' perceptions of procedural justice might account for a significant portion of the unexplained variance (1998).

In essence, Lidz et al. (1998) offers evidence suggesting that negative coercive pressures—negative symbolic pressures and force—are highly prevalent in the admission process and strongly associated with perceived coercion among adults entering inpatient

psychiatric treatment. In contrast, positive symbolic pressures are the most common form of admission pressure experienced but are not uniquely associated with patients' perceived coercion. Interestingly, patients who experience negative symbolic pressures almost always experienced positive symbolic pressures first, underscoring that the use of positive symbolic pressures may lead to more negative symbolic pressures and force. Finally, this research provides compelling evidence that patients' perceptions of coercion are, in fact, based on objective pressures versus limited to internal subjective processes. Therefore, research investigating the processes that contribute to negative symbolic pressures and the use of force may be fundamental to understanding how a person's perceived coercion can be reduced during admission (1998).

Lidz et al. (2000) conducted a third analysis of the 171 cases used in the two preceding articles to examine the sources of the different pressures just highlighted in Lidz et al. (1998). Lidz et al. (2000) categorized the different sources of admission pressures into five groups: (a) admission staff, (b) allied healthcare professionals, (c) family and friends, (d) police and security officers, and (e) others. Descriptive analysis showed each of these groups to be involved in the following percentage of cases involving negative symbolic pressures and force, respectively: admitting staff ($n = 171$) were involved in 33% of both, allied healthcare professionals ($n = 108$) were involved in 23% and 29%, family and friends ($n = 73$) were involved in 20% and 12%, police and security officers ($n = 59$) were involved in 68% and 42%, and others ($n = 18$) were involved in 11% of both (2000).

Lidz et al.'s (2000) bivariate analysis also showed race as the only demographic variable with a statistically significant relationship with perceived coercion. As a result,

race was the only demographic variable included in the subsequent regression analysis. The group of others was dropped due to a lack of statistical significance in a bivariate analysis, along with the fact this category only involved 12 cases. Regression analysis of the remaining four groups with both negative symbolic pressures and force and race showed the following variables to be associated with perceived coercion at the level of statistical significance ($p < .05$): family and friends' negative symbolic pressures ($B = -.40$, $Beta = -.14$), allied healthcare professionals' negative symbolic pressures ($B = -.73$, $Beta = -.29$), admission staff using force ($B = -.68$, $Beta = -.36$), and race ($B = .28$, $Beta = .15$). This regression model accounted for 51% of the variance in patients' perceived coercion (2000).

In sum, allied healthcare professionals' negative symbolic pressures and admission staff's use of force were the most significant contributors to patients' perceived coercion during admission. Family and friends' negative symbolic pressures contributed the least amount among the statistically significant variables. Also, while negative symbolic pressures and the use of force from police and security were the most common in cases where negative symbolic pressures and force occurred, they did not show a statistically significant association with perceived coercion in the regression model. Taken together, Lidz et al.'s (2000) findings suggest that admission staff and allied healthcare professionals may play the most significant part in a person's perceived coercion during admission. This finding held true despite the fact that police and security officers relied on negative symbolic pressures and the use of force the most often. Family and friends relied on negative symbolic pressures and the use of force the least often.

Their negative symbolic pressures only showed a minimal influence on a patient's perceived coercion (2000).

Gardner et al. (1999) is the final research that will be reviewed in reference to this sample of 433 patients. In Gardner et al.'s research, perceived coercion was a secondary outcome variable, with the primary focus being on whether patients' perceived need for hospitalization at admission changed after discharge. This research utilized the measures previously discussed in Hoge et al. (1998) for perceived coercion, admission pressures (including positive and negative), and procedural justice but added a six-point scale for patient's perceived need for hospitalization. In particular, patients were asked if they believed they needed to be admitted to the hospital (p. 1387). The authors utilized descriptive statistics to evaluate frequencies. Chi Square values via the McNemar's test and Chi-Squares from paired t-tests were used to evaluate changes in patients' perceptions (1999).

Gardner et al. (1999) found that more than half of the patients who did not perceive the need for treatment at admission revised their view to perceive the need for treatment in the follow-up interview. However, patients who perceived higher coercion at admission were less likely to change their perceptions at follow-up regarding the need for treatment. Further, patients who perceived higher coercion, more negative pressures, and less procedural justice at admission were less likely to endorse the need for treatment at admission. Patients' perceived coercion, admission pressures (positive and negative), and procedural justice remained stable from admission to follow-up. Patients' emotional responses reported in the admission experience interview regarding their admission, which included feelings of anger, sadness, relief, and fear, also remained stable. The

authors interpreted these findings to suggest that while some patients may revise their perceptions towards their perceived need for admission, they do not appear to revise their feelings of coercion or negative emotional reactions. Therefore, even if a coerced patient who initially believes they do not need treatment comes to see the benefit, they will maintain their negative feelings towards being coerced. In this vein, the authors emphasized the importance of reducing this experience for patients (1999).

Study Four: Perceived Coercion and Treatment Adherence Outcomes

The MacArthur Coercion Research's fourth study discussed was conducted concurrently with the previous two MacArthur Coercion Research studies (studies 2 and 3) but in collaboration with the MacArthur Risk Assessment Study (Hoge et al., 2001). The MacArthur Risk Assessment study was a prospective study of 1135 adult psychiatric patients admitted into hospitals in Massachusetts, Pennsylvania, and Missouri (Hoge et al., 2001). This risk assessment study followed adult psychiatric patients from admission through their transition back into the community. It included a large number of variables, with the resulting research focusing on risk factors of violence among mentally ill patients post-discharge (Monahan et al., 2001). While the details of their risk assessment study can be accessed elsewhere (see Monahan et al., 2001), it is worth noting that this research did not find a statistically significant effect between perceived coercion at admission and future risk of violence. That said, one research article (Rain et al., 2003) emerged from this study that is pertinent to this dissertation.

Rain et al. (2003) conducted a secondary analysis of data from this sample of patients in the MacArthur Risk Assessment Study to investigate patients' perceived

coercion at hospital admission in relation to adherence to mental health treatment post-discharge. Patients completed the MacArthur Admission Experience Survey at admission and were followed up with up to five times (every 10-weeks) during the first year after discharge. At each follow-up visit, patients were asked a wide range of questions regarding their adherence to medication and outpatient mental health treatment.

Adherence to outpatient treatment was measured by calculating the number of sessions attended versus the number of assigned sessions. Adherence to psychiatric medications was assessed by questions on whether or not patients took their medications as prescribed. Patients were dichotomously coded as adherent or non-adherent. Rain et al.'s research focused on the patients' Perceived Coercion Scale (PCS) at admission and adherence responses at the first follow-up interview at 10-weeks post-discharge. In all, 825 patients (of the original 1135) had enough information at both time points to be included in their analysis (2003).

Rain et al.'s (2003) correlation analysis failed to find a statically significant relationship between perceived coercion and adherence to medication or outpatient sessions at 10-week follow-up. While the authors did not report the results of the subsequent four follow-up visits, they noted additional analyses showed this lack of significance in effect between perceived coercion and treatment adherence was evidenced in all five of the post-discharge follow-ups. While these results suggest perceived coercion at admission may not influence future treatment adherence, the authors emphasize caution in this interpretation. This research did not investigate the relationship between perceived coercion and the 310 (nearly 30% of the original sample) patients who did not fully participate and relied exclusively on self-report from patients. For example,

perceived coercion may have played a role in patients failing to follow-up with researchers post-discharge, or patients who exhibited poorer adherence may have been less likely to follow up. It is also plausible that patients reported more treatment adherence than occurred (2003, p. 105).

Other Adult Perceived Coercion Research

Development of Negative Pressures and Voice Scales

Hiday et al. (1997) added to the MacArthur Coercion Study's (e.g., Hoge et al., 2001) research by further investigating patients' perceptions of negative pressures and process exclusion during admission in relation to their perceived coercion. In this research, process exclusion represented the voice and validation components of procedural justice, which involve a person believing they were able to voice and have their concerns considered (Hiday et al., 1997; Lidz et al., 1995). As discussed previously, negative pressures and procedural justice are two strongly related correlates of perceived coercion (e.g., Lidz et al., 1995). To investigate this, Hiday et al. (1997) conducted a cross-sectional analysis of 331 adult psychiatric patients (ages 20 – 70 years) across three U.S. hospitals from a larger study on outpatient commitment (Swartz et al., 1995).

Patient data were collected through hospital records and an interview in the hospital, including 15 true-false items from the MacArthur Admissions Experience Survey (Hiday et al., 1997). The Perceived Coercion Scale (PCS) made up five of these items. Consistent with Gardner et al. (1993) and Lidz et al. (1995), they reported satisfactory homogeneity (item-total correlations: .60 - .73) and high internal reliability (Cronbach's alpha = .86). Similarly, they found a bimodal distribution in patient response

data, with the majority of the responses falling on the lowest or highest end of the scale.

Patient mean scores of perceived coercion were 2.90 (Hiday et al., 1997).

The admission experience survey also included six items related to negative pressures, which Hiday et al. (1997) used to form a perceived negative pressures scale. An adapted form of this scale is used in this dissertation, with the original scale including the following items:

- "People tried to force me to come into the hospital."
- "Someone threatened me to get me to come into the hospital."
- "Someone physically tried to make me come into the hospital."
- "I was threatened with commitment."
- "They said they would make me come into the hospital."
- "No one tried to force me to come into the hospital." (Hiday et al., 1997, p. 232-233)

Hiday et al. (1997) found high internal reliability for the responses on this scale, with item-total correlations ranging from .54 to .70 and a Cronbach's alpha of .84. Patient ratings were distributed across all possible scores. The overall patient mean score was 3.31 with a standard deviation of 2.17 (1997).

Four items on the admission experience survey were used to construct a process exclusion scale to measure patients' perception of voice and validation during the admission process (Hiday et al., 1997). As an adapted version of this scale is used in this dissertation, the scale items are listed below, with the first two addressing voice or lack of voice and the last two addressing validation or lack of validation:

- "I had enough of a chance to say whether I wanted to come into the hospital."
- "I got to say what I wanted about coming into the hospital."
- "No one seemed to want to know whether I wanted to come into the hospital."
- "My opinion about coming into the hospital didn't matter." (Hiday et al., 1997, p. 233)

Hiday et al. (1997) also found high internal reliability on this scale, with item-total correlations ranging from .52 to .60 and a Cronbach's alpha of .76. Patients' mean score was 2.09 with a standard deviation of 1.51. Patients' process exclusion scores were also spread across the entire scale (1997).

As anticipated, patients' perceived coercion, negative pressures, and process exclusion were all strongly correlated at the level of statistical significance ($p < .05$; Hiday et al., 1997). Consistent with the previous research (Hoge et al., 2001; Lidz et al., 1995), patients' perception of process exclusion was the strongest correlate with perceived coercion (.71), with patients' perceived negative pressures also being strongly correlated with perceived coercion (.60). Patients' perceived negative pressures and process exclusion were also strongly correlated (.61). Given that this sample consisted only of involuntary patients, these findings illustrate that significant variability in patients' perceived coercion, negative pressures, and process exclusion occurs irrespective of involuntary status. The distribution of patients' ratings of perceived coercion was also similar to research (e.g., Gardner et al., 1993; Lidz et al., 1995) involving both voluntary and involuntary patients (1997).

Hiday et al. (1997) used proportional odds ordinal logistic regression to examine several demographic variables, including age, race, gender, and clinical variables, including diagnosis, with patients' perceived coercion, negative pressures, and process exclusion. While their initial analyses found African-American males were the least likely to perceive high coercion and white females were the most likely, these differences were insignificant when patients' perceived negative pressures and process exclusion were considered. Regarding patients' perceived negative pressures, white males and

African American females were the most likely to endorse higher perceptions of them, with African males being the least likely. For patients' perception of process exclusion, only gender was significantly correlated, which showed that females were more likely than males to endorse high levels of process exclusion. Age and clinical markers were not significantly related to patients' perceived coercion, negative pressures, or process exclusion (1997).

Overall, Hiday et al.'s (1997) research was significant in constructing two additional admission experience surveys, including the process exclusion and negative pressures scales. This 15-item admission experience survey was later adopted as the MacArthur Admission Experience Survey – Short Form and continues to be utilized as a scale for perceived coercion, negative pressures, and process exclusion in current research (Hoge et al., 2001; Newton-Howes & Stanley, 2012; O'Donoghue et al., 2014, 2015). Of note, the process exclusion scale has come to be known as the voice scale (Hoge et al., 2001). In combination with the MacArthur Coercion Study (Hoge et al., 2001), Hiday et al. (1997) provided a foundation to examine prevalence rates and treatment outcomes related to perceived coercion, negative pressures, and voice at admission.

Perceived Coercion Outcomes: Treatment Engagement, Adherence, and Satisfaction

Kaltiala-Heino et al. (1997) examined patient admission experiences in a sample of 87 adults admitted to an inpatient psychiatric hospital in Finland. Data were collected from patients at two different time points. The first occurred at two-weeks after admission and focused on patients' perceived coercion, fair treatment, feelings, treatment

desires and expectations, attitudes, and future social support. The second occurred approximately six months after discharge. It focused on patients' opinions and attitudes of their hospitalization and outcomes and the current psychosocial support system. Of their sample, 55% were involuntarily committed to treatment, and 45% were voluntarily admitted. Approximately 29% of patients endorsed high-perceived coercion at admission, including 51% of involuntary and 7% of voluntary patients (1997).

Kaltiala-Heino et al.'s (1997) admission data showed that involuntary status was not associated with patients' perceptions of fair treatment, feelings, desires, expectations, or attitudes. However, perceived coercion was strongly associated with each of these at the level of statistical significance ($p < .05$). Patients who endorsed higher perceived coercion were more likely to endorse negative feelings towards admission, including feeling unjustly treated, ashamed, unhelpful, unsafe, and less calm. These patients were also more likely to endorse negative feelings towards staff and the treatment program and maintain a more negative outlook on treatment outcomes. Involuntary status was also relatively insignificant on follow-up outcomes. Patients endorsing higher perceived coercion at admission were more likely to endorse negative attitudes towards their initial admission and treatment. They were also more likely to endorse resistance against future inpatient treatment and were less involved in outpatient services at follow-up (1997).

In another study, Bindman et al. (2005) investigated perceived coercion at admission into a psychiatric hospital in relation to engagement with follow-up treatment post-discharge. Their sample included 100 adult patients who were recruited consecutively from a psychiatric hospital in London, England. This research administered the MacArthur Admission Experience Interview and Survey to participants within the

first 72 hours of admission. Consistent with Hiday et al. (1997), Bindman et al. (2005) utilized the five-item perceived coercion scale (PCS), six-item perceived negative pressures scale and four-item process exclusion scale. The MacArthur Admission Survey was also administered to patients at discharge, including the three scales just noted. Follow-up data were collected from patients for an average of 10-months post-discharge, which included the time patients were not compliant with follow-up with services, time before hospital readmission (if applicable), and global rating of compliance completed by the patient's caseworker. Finally, their sample identified three general types of objective admission coercion: involuntary legal status, police involvement, and physical restraint or forced medication. Notably, 67% of their sample endorsed some form of objective coercion during admission (2005).

By way of univariate analysis, Bindman et al. (2005) found that objective coercion was strongly related to patients endorsing increased perceived coercion, negative pressures, and process exclusion during admission. Patients' reports on each of the items of the MacArthur Admission Survey remained stable from admission to discharge. However, multivariate regression analysis failed to show a statistically significant relationship between perceived coercion and any of the three follow-up variables for future engagement. While this finding was in conflict with their initial hypothesis, the authors noted this might be attributed to a limitation in measuring future engagement by attending treatment. They reasoned that it was plausible that patients in their sample who felt coerced to enter treatment may have also felt coerced to continue attending the recommended follow-up treatment. This research underscored the need for

future investigations examining the quality of future engagement and patients' progress in psychosocial functioning (2005).

Iverson et al. (2007) investigated patients' perceived coercion at admission in relation to self-reported treatment satisfaction at discharge among 94 adult patients in a Norwegian psychiatric university hospital. Perceived coercion was measured via the MacArthur Perceived Coercion Scale (PCS) and patient satisfaction via a standardized 47-item scale. Admission data showed that 66% of patients were admitted involuntarily, with 11% endorsing the use of physical force, including physical or mechanical restraint, during admission. Forty-five percent of patients endorsed high perceived coercion during admission. In contrast to previous research, objective coercion and perceived coercion were less correlated. Thirty-four percent of voluntary patients endorsed high perceived coercion, and 51% of involuntary patients endorsed low perceived coercion at admission. Overall patient satisfaction at discharge was low, with only 37% of patients scoring above the scale's midpoint. While patients' endorsement of physical force was related to decreased patient satisfaction at discharge, neither perceived coercion nor involuntary status at admission was related to patient satisfaction. However, it was difficult to evaluate the influence of perceived coercion in relation to treatment satisfaction, considering the vast majority of all patients endorsed low satisfaction. Further, when accumulated coercion—objective coercion and perceived coercion during admission and coercion during hospitalization—was considered, coercion was associated with reduced patient satisfaction with treatment (2007).

Iverson et al.'s (2007) findings were significant in showing how patients' experiences during their time in treatment may be a significant confounder in evaluating

patients' experiences, including perceived coercion, at admission in relation to outcomes. Therefore, a more comprehensive approach that includes objective and subjective experiences at admission and objective and subjective experiences during treatment may be essential to understanding the role of perceived coercion in treatment and post-treatment outcomes. In this vein, it may not be surprising that outcome research related to objective and perceived coercion has produced conflicting results.

O'Donoghue et al. (2011) investigated perceived admission pressures and procedural justice in relation to physical coercion in involuntary admission and future engagement with services among 81 involuntary adult patients in a psychiatric hospital in Dublin, Ireland. The original version of the MacArthur Admission Experience Survey (Gardner et al., 1993) was used to evaluate perceived positive and negative pressures at admission along with perceived procedural justice. Physical coercion at admission included bodily restraint, seclusion, and assisted admission by police or transport staff from the facility. Adherence after discharge was assessed by patients attending 75% or more of scheduled appointments, similar to previous research (Rain et al., 2003).

O'Donoghue et al. (2011) showed that approximately 67% of patients experienced physical coercion during admission, with physical restraint being used in 46% and seclusion in 25% of admissions. Data also showed that 34% endorsed negative pressures (threats or force), and 80% of patients endorsed some form of procedural justice during admission. Patients' perceived negative pressures and procedural justice were not associated with the use of physical coercion. However, patients' perception of procedural justice at admission was associated with patient willingness to engage in follow-up treatment at discharge. Patients who were not adherent with treatment at 12-

month follow-up tended to report lower scores of procedural justice. However, this difference was not statistically significant. Patient perception of procedural justice at admission was also unrelated to hospital readmission (2011).

In sum, O'Donoghue et al. (2011) provided suggestive evidence that patients' perceived negative pressures are distinct from the actual use of negative pressures. The use of physical coercion also appears to be a common experience in involuntary admissions. While patient reports of procedural justice at admission were associated with their willingness to engage in future treatment, they were not associated with treatment adherence at 12-month follow-up. This discrepancy between patients' intent to engage in treatment at discharge versus future adherence suggests that other unaccounted factors may be involved in adherence (2011).

Kallert et al. (2011) conducted a prospective cohort study to examine changes in patients' symptoms over a three-month timeframe in relation to perceived at admission in a sample of 3090 adult psychiatric patients from multiple hospitals across 11 European countries. Patients were categorized into the following three groups according to their level of perceived coercion on the PCS, and involuntary status at admission: (1) coerced voluntary ($n = 764$), (2) coerced involuntary ($n = 2051$), (3) not coerced involuntary ($n = 225$). Not coerced voluntary patients ($n = 3934$) were excluded from analyses (2011).

Multivariate analysis showed that patients in the coerced voluntary group experienced less improvement in their symptoms over the three-months compared to those in the not coerced involuntary group with a small but statistically significant ($p < .05$) effect (Kallert et al., 2011). No statistically significant differences were found between the coerced or not coerced involuntary groups. While no differences in symptom

reduction were noted with perceived coercion in the two involuntary groups, the fact that voluntary patients who endorsed high perceived coercion experienced less symptom reduction in comparison to involuntary patients who endorsed low perceived coercion underscores the importance of looking beyond legal status and considering perceptions of patients (Kallert et al., 2011).

Newton-Howes and Mullen (2011) conducted a systematic review of qualitative and quantitative literature to identify themes and correlates of perceived coercion at admission among patients (16 to 65-years-old) in psychiatric care. While their initial search yielded more than 5000 articles, only 23 of these studies met inclusion criteria for their study. Samples size across each of these studies ranged from 11 to 733. Their analyses of qualitative studies showed that patients' perceived coercion is associated with several negative subjective outcomes at admission, including feeling "dehumanized and not listened to" (p. 469). Their review of longitudinal studies showed that patients' perceived coercion was associated with attenuated treatment outcomes in regards to future engagement and adherence in several studies. While some studies showed no differences, the authors emphasized that the overall evidence did not support significant long-term benefits for patients who perceive coercion and did not appear to offset patients' negative subjective experiences related to perceived coercion. Finally, in their review of correlational studies, they noted physical force, social leverage, and lack of "voice" as strong correlates of perceived coercion at admission. Taken together, Newton-Howes and Mullen identified negative outcomes at admission and a lack of long-term benefits associated with perceived coercion. They also found support for previously established key variables that contribute to patients' perceived coercion at admission.

These findings suggest that more emphasis should be placed on reducing patients' perceived coercion during admission, which may be accomplished by reducing patients' experiences of force and leverage while increasing their perception of voice (or being listened to) during the admission process (2011).

Riley et al. (2014) employed a qualitative narrative interview approach with 11 adult psychiatric patients committed to outpatient treatment post involuntary hospitalization to investigate patients' experiences of involuntary commitment. Thematic narrative analysis was used to analyze and interpret qualitative data. In regards to their initial inpatient psychiatric admission, their analyses showed that patients endorsed various forms of admission coercion, including forced admission via police transport, physical restraint, seclusion, and forced medication. Consistent with Newton-Howes and Mullen's (2011) findings, patients described involuntary hospital admission and coercive practices as a humiliating and stigmatizing experience. Patients endorsed experiencing less coercion in outpatient commitment versus inpatient commitment, though they also described this experience as stressful and feeling uncertain due to a lack of control over their treatment. No patients endorsed the desire for involuntary hospitalization or outpatient commitment and considered the coercive measures associated with both as negative and a significant restriction on their autonomy. Patients identified a lack of voice in the decision-making process in treatment and feeling powerless as the most intrusive aspects of involuntary treatment. Finally, patients described obedience, a less intrinsically anchored motivation, as a strategy in outpatient treatment to avoid more severe forms of coercion, such as being involuntarily readmitted to inpatient treatment. This study did not include post-treatment outcomes (2014).

Notwithstanding Riley et al.'s (2014) small sample size and lack of post-treatment outcome data, their research was consistent with previous larger quantitative studies (e.g., Hoge et al., 2001), which identify voice and lack of control as central components of perceived coercion. These data are also consistent with research (e.g., Bindman et al., 2005; Gardner et al., 1999) that shows negative attitudes towards experiencing admission coercion remain stable over time, given that all patients in this sample were reporting on their experiences of admission coercion post-discharge from inpatient treatment. Finally, the qualitative nature of this study illustrates how patients can become compliant or adherent with treatment despite their negative experience of coercion. Further, this form of adaptive compliance is generally associated with lower quality of motivation (2014).

In sum, the adult psychiatric literature offers insight into the potential implications associated with perceived coercion during admission into inpatient settings and treatment outcomes. However, the generalizability of this research to adolescents entering RT is unclear. This dissertation addresses this gap in the research by providing an initial foundation for examining research outcomes related adolescents' perceived coercion during RT admission.

Adolescent Perceived Coercion Research

An extensive review of the adolescent literature revealed one adolescent study (Nyttingnes et al., 2018) on perceptions of perceived coercion during admission. Accordingly, Nytingnes et al. (2018) conducted the first (and only current) quantitative study related to perceived coercion in adolescent behavioral healthcare. This study involved a cross-sectional analysis of adolescents' perceptions of experienced coercion

among 96 adolescents, ages 13 through 17, from 10 Norwegian psychiatric wards. This research investigated admission pressures from parents in relation to adolescent patients' perceptions of experienced coercion for voluntary and involuntary patients. To evaluate adolescents' perception of experienced coercion, these researchers developed the Experienced Coercion Scale (ECS), comprising 15 Likert items focused on adolescents' perceptions of different forms of coercion emphasizing parent authority and involvement. Adolescents also completed the Coercion Ladder, a one-item scale where the patient rates their experience of being coerced on a scale of 1 to 10 (with 10 indicating the highest amount of coercion). Parents' admission pressures were measured via a one-item (5-point Likert item) staff rating form (2018).

In addition to the rates of adolescents' perceptions of experienced coercion discussed in Chapter 1, Nytingnes et al. (2018) reported that involuntary admission and lower psychosocial functioning were associated with adolescents' increased perceptions of experienced coercion. Their data also showed that admission pressures from parents were associated with increased perceptions of experienced coercion among voluntary but not involuntary patients. The authors speculated that this last finding could be attributed to parent pressures being considered more legitimate when they were admitted involuntarily (2018). Notwithstanding, the finding of involuntary patients reporting low experienced coercion and voluntary patients reporting high experienced coercion is also demonstrated in several studies of adult psychiatric patients (e.g., Hoge et al., 1997; Iversen et al., 2002; Monahan et al., 1999; Newton-Howes & Stanley, 2012; Sheehan & Burns, 2011).

While this research offers new insight into adolescents' perceptions of experienced coercion during admission into inpatient care, it comes with important caveats. First, Nytingnes et al. (2018) relied on their unstandardized scale of experienced coercion. While it was correlated ($r = .68$) with the one-item coercion ladder, they omitted additional psychometric data regarding its internal consistency and reliability. Second, the authors in this research noted the decision not to utilize the PCS as a critical limitation considering its extensive use in the adult literature. As a result, it is difficult to compare their findings with previous literature (2018).

Research Summary

Consistent with the adult and adolescent inpatient psychiatric literature, coercion is a common practice for admitting adolescents into RT (Nytingnes et al., 2018; Tucker et al., 2015, 2018). Adolescents admitted into RT via objective forms of coercion may also be considered likely to perceive coercion; however, this may not always be the case. Instead, research suggests a minority of adolescents who are not coerced into RT will endorse high levels of perceived coercion, and a minority of coerced adolescents endorse low perceived coercion (e.g., Monahan et al., 1999, 2001; Newton-Howes & Stanley, 2012; Nytingnes et al., 2018; Opsal et al., 2016).

Drawing on the adult literature, whether or not an adolescent perceives coercion during admission is reasoned to be contingent on at least two factors, namely, perception of voice and fairness (or procedural justice) and perception of negative pressures (e.g., Anestis et al., 2013; Hiday et al., 1997; Hoge et al., 2001). Adolescents who believe they have the opportunity to voice their opinions, feel treated fairly, and do not perceive

negative pressures are anticipated to not perceive coercion during admission. In contrast, adolescents who believe they are allowed to voice their concerns, feel unfairly treated, and perceive significant negative pressures are anticipated to endorse high perceived coercion. Perhaps most significantly, research suggests this reasoning holds irrespective of whether an adolescent is involuntarily or voluntarily admitted into RT (e.g., Hoge et al., 2001; Newton-Howes & Mullen, 2011; Opsal et al., 2016).

Outcome research for objective coercion in RT admissions is primarily limited to two studies on IYT. These studies report no differences in discharge or post-discharge outcomes in psychosocial functioning among adolescents who were involuntarily transported into treatment versus those who were not (Tucker et al., 2015, 2018). No outcome studies appear to exist for perceived coercion in adolescent RT admissions. In drawing on the small body adult and adolescent psychiatric inpatient literature, perceived coercion tends to be associated with adverse emotional reactions and attitudes towards admission and treatment (Kaltiala-Heino et al., 1997; Newton-Howes & Mullen, 2011; Riley et al., 2014). Discharge and post-discharge outcomes appear more conflicted in the literature. Several studies failed to find a statistically significant association between increased perceived coercion at admission and discharge and post-discharge outcomes in treatment satisfaction, future engagement, and future adherence (Bindman et al., 2005; Newton-Howes & Mullen, 2011; Rain et al., 2003). One study, however, found a statistically significant association in discharge satisfaction but only after considering perceived coercion at admission in conjunction with objective coercion experienced during admission and treatment (Iverson et al., 2007). This study highlights the need for a comprehensive research approach that considers both the objective and subjective aspects

of coercion at admission and throughout treatment when evaluating future outcomes. Newton-Howes and Mullen's (2011) systematic review emphasized that while the aforementioned treatment outcomes varied across studies, patients' negative subjective experiences of coercion at admission remained stable. Moreover, this research did not find evidence supporting the long-term benefit of patients' perceiving coercion during admission.

By way of extrapolation, adolescents who perceive high coercion during RT admission are anticipated to simultaneously endorse adverse emotional reactions and attitudes towards treatment, which may remain stable after treatment discharge. Future outcome research of adolescent RT admissions may benefit from considering multiple aspects of the adolescent's admission experience, including objective and perceived coercion at admission, along with coercive aspects of the RT milieu. Finally, the lack of objective and perceived coercion research in adolescent RT admissions underscores the importance of this dissertation's research. This also supports the need to draw on well-established psychological motivation and change theories to provide a foundation for the current dissertation and future research.

Theoretical Foundation

This dissertation draws on Self-Determination Theory (SDT) and Psychological Reactance Theory (PRT) to provide a theoretical foundation for understanding coercion during the admission process and its role in different immediate and long-term trajectories of motivation and change for adolescents entering RT. Due to the extensive

use of the Transtheoretical Model (TTM) in the behavioral health literature, it is reviewed first to provide context for SDT (Krebs et al., 2018).

Transtheoretical Model

The Transtheoretical Model (TTM) of behavioral change describes motivation as a unidirectional force that underlies a person's readiness to change within a six-stage framework: precontemplation (no intention to act within next 6-months), contemplation (intention to act in next 6-months), preparation (intention and some actions to act within next month), action (changed behavior for less than 6-months), maintenance (behavior change maintained for at-least 6-months), and termination (behavior change is fully integrated with no temptation to relapse to previous behavior; Krebs et al., 2018; Prochaska et al., 2002). Within TTM, a person's motivation is not only a catalyst for progressing through each of these stages but varies according to what stage a person is on (Krebs et al., 2018). A person with high motivation is considered more ready to change and, in turn, more likely to be in the preparation, action, or later stage; whereas, a person with low motivation is more likely in the pre-contemplation or contemplation stage (Krebs et al., 2018).

In addition to a person's motivation or readiness to change, TTM emphasizes several broad processes of change, including (a) consciousness raising of advantages and consequences related to change, (b) dramatic relief or emotional arousal related to moving on from negative behaviors and relationships, including feeling guilt or fear of not changing, (c) self-reevaluation or the cognitive process of reframing experiences to depict one's self as capable of overcoming a problem, (d) self-liberation or acting on the

belief they can change, (e) reinforcement of efforts made to change, (f) counterconditioning or the process of learning to replace problem behaviors with healthier ones, (g) and stimulus control or process of learning to avoid or control triggers of negative behaviors (Krebs et al., 2018, p. 1965-66).

According to TTM, these processes of change vary in importance depending on a person's readiness to change (Krebs et al., 2018). Change is not a discrete or static concept but involves a series of dynamic processes that unfold across a sequence of readiness to change stages. Motivation is important as it relates to a person's readiness to change and the apparatus that carries them through the various processes of change. As a result, different therapeutic interventions may be effective at different stages. For instance, consciousness raising and dramatic relief are important processes for change in the precontemplation stage but also in motivating a person to move into the contemplation stage (Krebs et al., 2018). Likewise, self-reevaluation is linked to progressing into the contemplation stage; reinforcement and counterconditioning are associated with moving to the action and later stages; stimulus control is important in the maintenance stage and eventually progressing to termination (Krebs et al., 2018).

In essence, TTM emphasizes the importance of tailoring psychotherapeutic therapeutic interventions according to the person's readiness to change (Krebs et al., 2018). Therapeutic change is facilitated by matching the therapeutic approach or process of change with the person's readiness to change. The above-mentioned processes of change pertaining to the pre-contemplation stage are the most pertinent to adolescents who experience coercion when entering RT and are discussed further in the RT admission process section.

Empirical Research

Norcross et al. (2011) and Krebs et al. (2018) meta-analyses showed that TTM's stages of change consistently predicted psychotherapeutic outcomes in substance and alcohol use, mood disorders, and eating disorders with moderate effect sizes. Specifically, patients entering treatment in the preparation or action stage experienced better outcomes in comparison to those in the pre-contemplation stage (Krebs et al., 2018; Norcross et al., 2011). While adolescents were included in only 12% of the analyzed studies, Krebs et al. (2018) found no statistically significant differences in effect sizes between adolescent and adult studies. While RT was not a modality included in the studies reviewed, no statistically significant differences were reported between other behavioral health modalities, including outpatient and inpatient treatment (Krebs et al., 2018).

While TTM has proven useful in predicting psychotherapeutic outcomes, no research has investigated the effectiveness of interventions tailored to its different stages of change (Krebs et al., 2018; Norcross & Wampold, 2019). Another key caveat of TTM is the lack of evidence validating the existence of discrete stages of change (Brug et al., 2005; Herzog, 2010). In a review of 87 studies on stages of change, Littrell and Girvin (2002) concluded that there is a lack of evidence that patients progress through a sequence of discrete stages of change. In essence, TTM has strong empirical support for predicting psychotherapeutic outcomes based on a patient's initial readiness to change but lacks sufficient support to match interventions according to its ostensive stages of change.

RT Admission Process

According to TTM, admission approaches should be customized based on an adolescent's stage of readiness to change (e.g., McHugh, 2007). An adolescent's motivation is important as it relates to and contributes to their readiness to change. Motivation is lowest in the precontemplation stage versus contemplation and action stages of readiness to change. In turn, adolescents in the precontemplation stage may be more vulnerable to experiencing coercive approaches than those in the contemplation or action stage. However, TTM does not favor the use of coercion or confrontational admission approaches to increase an adolescent's motivation at any stage of readiness to change (DiClemente, 2003; Gutierrez & Czerny, 2018). Rather, TTM researchers emphasize approaches that increase adolescents' awareness of the need for change, including "tough love" approaches that allow them to experience the natural consequences of their negative behaviors (DiClemente, 2003; Gutierrez & Czerny, 2018). Therefore, adolescents entering treatment in the precontemplation stage may benefit from procedures that increase their awareness of the need for change via the least restrictive approach. Intervention strategies that elicit voice, reduce negative pressures, and increase fairness are consistent with TTM.

Self Determination Theory

Self-Determination Theory (SDT) is an empirically established framework for understanding motivation and its influence on psychological and behavioral functioning (Ryan & Deci, 2017; Ryan et al., 2015). In contrast to TTM and other unidimensional

theories of motivation, SDT describes motivation as multidimensional, consisting of different types and sources of motivation (Deci & Ryan, 2008). A person's quality of motivation is not determined by the amount of motivation they have. Instead, the quality of motivation is determined by whether it is internally regulated (i.e., autonomous), externally regulated (i.e., controlled), or non-regulated (i.e., amotivation). SDT also places emphasis on social-contextual factors and their role on a person's quality of motivation and functioning to the extent they satisfy or thwart a person's psychological needs for autonomy, relatedness, and competence (Ryan & Deci, 2017). SDT argues that understanding how these psychological needs relate to different types of motivation offers a framework for predicting behavior across various social contexts or rather how different contexts may induce or undermine high-quality motivation (Ryan & Deci, 2017). When a person's psychological needs are satisfied, they exhibit autonomous motivation and optimal functioning (Deci & Ryan, 2000, 2008). When a person's needs are thwarted, they tend to exhibit controlled motivation or amotivation and experience attenuated or impaired functioning (Deci & Ryan, 2000, 2008; Ryan & Deci, 2017).

Types of Motivation

SDT uses an autonomy-control continuum to differentiate between different types of motivation (Ryan & Deci, 2017). According to SDT, the type of motivation a person experiences varies according to whether it is regulated by internal or external sources. A person experiences optimal functioning when their motivation is regulated by an internal source aligned with their intrinsic interests and values. At the same time, a person experiences suboptimal functioning when their motivation is regulated by an external

source that is in conflict with their intrinsic interests and values, irrespective of the amount of motivation. A person experiences impaired functioning when they lack motivation or it is non-regulated (Deci & Ryan, 2000, 2008; Ryan & Deci, 2017).

Autonomous Motivation

Autonomous motivation includes internal and external sources of motivation where a person identifies with the value of an action, or it is integrated into their sense of self (Deci & Ryan, 2008, p. 182). When people are autonomously motivated, their actions are self-endorsed, volitional, and internally regulated (Deci & Ryan, 2008). Autonomous motivation is associated with positive therapeutic change, which tends to be self-sustaining and long-term (Deci & Ryan, 2000, 2008; Ryan & Deci, 2017).

Controlled Motivation

Controlled motivation involves external sources of motivation, including controlling or coercive pressures, where a person's actions are externally regulated by contingencies of reward or punishment that are incongruent with their intrinsic values and sense of self (Deci & Ryan, 2000, 2008; Ryan & Deci, 2017). Controlled motivation can also involve "internally controlling" pressures where a person's actions are motivated by shame, guilt, or fear of disapproval from self or others (Ryan & Deci, 2000, 2017). Internally controlling pressures are regulated by introjection based on external sources. Controlled motivation is associated with controlled change which tends to be short-term and associated with relapse to previous maladaptive behavior once controlling pressures are removed (Deci & Ryan, 2000, 2008; Ryan & Deci, 2017).

Amotivation

Amotivation, or rather the lack of motivation, describes the extent to which “people are passive, ineffective, or without purpose with respect to any given set of potential actions” (Ryan & Deci, 2017, p. 16). Amotivation lacks an internal or external source of regulation, meaning a person's behavior is not influenced by their internal values or external sources of pressure (Ryan & Deci, 2000). SDT differentiates three types of amotivation, including a lack of motivation to act due to: (a) perceived helplessness or incompetence, (b) lack of interest or value associated with action, and (c) defiance or resistance against pressures to act (Ryan & Deci, 2017; Van Petegem et al., 2015). This last aspect of amotivation may be more appropriately referred to as motivated inaction or oppositional defiance against demands perceived as thwarting a person's need for autonomy (Ryan & Deci, 2017, p. 16). While the first two types of amotivation may be a preceding step to autonomous motivation, oppositional defiance, if not attenuated, can lead to increased resistance and maladaptive change (Urbanoski, 2010).

Psychological Needs

SDT posits the existence of innate psychological needs, including autonomy, competence, and relatedness, that comparable to physiological needs are universal and essential to optimal functioning (Deci & Ryan, 2000, 2008; Ryan & Deci, 2017). Whether or not these needs are met are reasoned to underlie the quality of a person's motivation (Deci & Ryan, 2000). *Autonomy* refers to a person's ability “to self-regulate one's experiences and actions” (Ryan & Deci, 2017, p. 10). A person experiences

autonomy when their “behaviors are self-endorsed and congruent with one’s authentic interests and values (Ryan & Deci, 2017, p. 10).” *Competence* refers to the basic need to feel competent or capable of effectively functioning and growing in their environment (Deci & Moller, 2005). This need to feel effective and accomplished is what drives people to improve in their knowledge and abilities. *Relatedness* refers to the need to feel connected to others and involves feeling cared for and accepted by others but also feeling significant to others and society (Deci & Ryan, 2000, 2014). According to SDT, when these needs are satisfied, people experience enhanced self-regulated, volitional functioning that induces immediate high-quality autonomous motivation and behavior, thereby strengthening their inner capacities to increase long-term resilience for optimal functioning (Deci & Ryan, 2000, 2008; Ryan & Deci, 2017). When these needs are not met or frustrated, people experience externally-regulated, pressured functioning that evokes immediate low-quality controlled motivation or amotivation, thereby diminishing functioning and increasing vulnerabilities that can lead to maladjustment and psychopathology (Deci & Ryan, 2000; Vansteenkiste & Ryan, 2013).

Social Context

Social-contextual factors contribute to a person's motivation and functioning to the extent they facilitate or undermine need satisfaction (Ryan & Deci, 2017). SDT describes social contexts according to whether they are: “(1) *autonomy supportive* (versus demanding and controlling); (2) *effectance supporting* (versus overly challenging, inconsistent, or otherwise discouraging); and (3) *relationally supportive* (versus impersonal or rejecting; Ryan & Deci, 2017, p. 12).” Autonomy supportive environments

promote volitional functioning and self-endorsed action. Effectance supportive environments promote competence development. Relationally supportive environments promote social connection that is nurturing and supportive with opportunities to contribute to the social environment (Ryan & Deci, 2017, p. 12). When a person's needs are supported in their social environment, they are more likely to have their needs met and, in turn, experience enhanced autonomous motivation and functioning. When a person's social environment does not support these basic needs, they are more likely to have these needs unmet and, in turn, experience diminished motivation and functioning (Deci & Ryan, 2000, 2008; Ryan & Deci, 2017).

Psychotherapeutic Interventions

The central task of psychotherapeutic interventions is “to support the client to autonomously explore, identify, initiate, and sustain a process of change (Ryan & Deci, 2008, p.186).” According to SDT, the role of therapeutic interventions extends beyond a client’s current distress and maladaptive functioning and includes optimal growth and well-being across their lifespan. Autonomy, which is posited to lead to optimal functioning, is considered the ultimate goal of therapeutic interventions versus specific behavioral changes (Ryan & Deci, 2017). Positive behavioral change is important and often coincides with autonomous functioning, but autonomy is the central component to integrating and maintaining positive change within and outside the therapeutic context (Ryan & Deci, 2008, 2017).

Ryan and Deci (2017) offer two hypotheses to achieving behavior change in psychotherapeutic settings:

Hypothesis 1: The relative autonomy of client motivation is an important predictor of treatment engagement and intervention outcomes, especially with regard to maintained changes.

Hypothesis 2: Across modalities of therapy, counseling, and behavior change, client engagement, outcomes, and wellness will be enhanced by practitioners' autonomy support. Autonomy support contributes to wellness by satisfying basic psychological needs, and also, more directly, by supporting clients' autonomous motivation for change and the integrated internalization of regulations that will allow the change to be maintained across time and circumstances. (p. 438)

In their first hypothesis, Ryan and Deci (2017) emphasize the importance of autonomous motivation in clients becoming autonomously engaged in the therapeutic process and achieving optimal change outcomes. In their second hypothesis, they highlight the importance of autonomy support in evoking autonomous motivation. They identify several forms of autonomy support as critical to facilitating autonomous motivation and engagement, including (a) taking on the client's perspective, which involves showing empathy, (b) promoting exploration, reflection, and initiative, (c) providing a rationale for restrictions while eliciting input or voice from the client, (d) providing an opportunity for deliberate choice, (e) acknowledging and accepting resistance, (f) minimizing pressures and control, and (g) and need-based limit setting. Need-based limit setting refers to integrating the previous steps when limit setting is required, including providing clear limits with a meaningful rationale, empathically acknowledging resistance, and providing the opportunity for choice (2017). In sum, autonomy support involves fostering client self-regulation throughout all aspects of a therapeutic intervention (2017).

SDT posits that support for client's autonomy lays the foundation for meeting the needs of competence and relatedness within a therapeutic context (Ryan & Deci, 2017). Competence support can occur when a therapeutic intervention: (a) is structured

according to the specific client's capabilities, such as helping clients to autonomously identify and focus on goals and changes that are neither too difficult nor too easy, (b) emphasizes an internal versus external focus of evaluation, (c) provides clear and effectance-based feedback, and (d) promotes mindful evaluation of consequences (Ryan & Deci, 2017, p. 439). Relatedness support involves being authentic, genuine, and transparent in interactions with a client, including showing genuine interest, unconditional positive regard, and acceptance towards a client irrespective of their goals aligning with those of the intervention (Ryan & Deci, 2017, p. 439).

Empirical Research

While the extant literature has not evaluated SDT's framework among adolescents entering RT, research in related behavioral health domains has shown promise, particularly in autonomous motivation being associated with enhanced client experiences and outcomes (e.g., Brauers et al., 2016). In one of the earliest empirical studies using SDT's framework in behavioral healthcare, Pelletier et al.'s (1997) study of 138 adult psychotherapy clients found that those who endorsed more autonomous motivational factors also endorsed more positive experiences of therapy, increased life satisfaction, and greater intent to continue with change post-treatment. Those who endorsed more factors associated with controlled motivation endorsed a less favorable therapy experience and less intention to continue with change post-treatment (1997).

Williams et al.'s (2006) randomized control trial investigated the effectiveness of an SDT-based intervention to reduce smoking in a sample of 1006 participants. Their findings showed the SDT-based intervention was associated with (a) increased

perceptions of autonomy support, (b) improved autonomous motivation and effectance, and (c) greater smoking cessation (2006). While this study was limited to smoking cessation, it provides evidence that SDT-based interventions are associated with improved autonomous motivation and positive behavioral change.

In another study, Wild et al. (2006) investigated perceived coercion from a self-determination theory (SDT) perspective in relation to social pressures, objective coercion, motivation, and interest in treatment in a sample of 300 adults entering an addiction outpatient treatment program in Canada. Of these 300 adults, 237 were classified as non-mandated or voluntary clients, 25 as legally mandated, and 34 as formally mandated by an employer or another health or social service agency. Their data showed that clients' autonomous motivation for treatment was more associated with treatment engagement than objective social and coercive pressures. Clients' reports of perceived coercion were inversely associated with autonomous motivation and positively correlated with social pressures and objective coercion at admission. The authors of this study interpreted their findings to support the reasoning that client perceptions are more predictive of treatment engagement versus social and coercive pressures (2006).

Klag et al. (2010) evaluated an SDT-based model of motivation, engagement, and general well-being in a sample of 350 adults from six substance use RT facilities in Australia. Notwithstanding several limitations, the results from their study provided support for their hypothesized model. By way of latent variable analysis, their research showed amotivation to be inversely associated with general well-being. Persons who were unmotivated at the onset of treatment were also more likely to report lower general well-being. External motivation was inversely associated with treatment engagement and

general well-being. However, they also reported a mediation effect with treatment engagement between external motivation and general well-being. Persons who endorsed higher external motivation tended to report less treatment engagement and less general well-being. However, when persons with high external motivation endorsed higher treatment engagement, they tended to endorse higher general well-being. From this finding, the authors reasoned that persons could overcome the negative effects of external motivation if they were autonomously motivated and became engaged in treatment. Finally, autonomous motivation was positively associated with both treatment engagement and general well-being.

More recently, Carter and Kelly (2015) investigated autonomous and controlled motivation in a sample of 97 eating disorder clients ages 17-57. Their findings demonstrated that baseline autonomous motivation compared to controlled motivation was associated with faster improvements in psychopathology. Based on their findings, they reasoned that enhancing autonomous motivation at the onset of treatment can improve outcomes in eating disorder treatment (2015).

Motivational Interviewing (MI) is perhaps the most rigorously studied approach for eliciting autonomous motivation particularly at the beginning of treatment among those resistant to therapeutic change (Miller & Rollnick, 2013). Dean et al.'s (2016) randomized control study of 96 adolescents demonstrated MI as an effective pre-treatment intervention for enhancing treatment engagement among adolescents entering outpatient treatment with a primary diagnosis of a mood disorder. They interpreted their findings to support MI being used as a brief pre-treatment intervention to enhance treatment motivation and engagement during and after admission (2016).

In essence, empirical evidence supports several aspects of SDT's framework within behavioral healthcare settings, especially in promoting autonomous motivation and earlier engagement in treatment. At the same time, this evidence is limited and has not been directly investigated within the RT admission process for adolescents. Therefore, there is a pressing need for additional theoretical and empirical investigations into the applicability of SDT's framework for adolescents entering RT (e.g., Cook & Artino, 2016).

RT Admission Process

SDT views motivation as a multidimensional construct emphasizing that different types of motivation, including autonomous, controlled, and amotivation, lead to very different immediate and long-term outcomes. According to SDT, social contextual factors play an influential role in which motivation type is evoked, with autonomous motivation being essential to achieving optimal immediate and long-term functioning and therapeutic change (Ryan & Deci, 2008, 2017). Controlled motivation leads to attenuated immediate and long-term functioning, including controlled change, which is often short-term and temporary (Ryan & Deci, 2008, 2017). Amotivation is associated with impaired immediate and long-term functioning, including oppositional defiance, no change, and potential maladaptive change that can lead to increases in psychopathology (Ryan & Deci, 2008, 2017).

SDT emphasizes the role of interpersonal processes in facilitating motivation for an adolescent in the admission process (Ryan & Deci, 2017). Interpersonal processes include the interactions between adolescents entering treatment and their family

members, program admission or intake staff, and allied treatment professionals, including third-party intervention staff, referring therapists, and other referral sources. To evoke autonomous motivation during admission, SDT recommends an autonomy-supportive approach that facilitates the following: (a) initiative, reflection, and deliberate choice, (b) providing meaningful rationale and communicating clear guidelines in establishing structure and limit setting, and (d) considering the adolescent's frame of reference and displaying unconditional positive regard and genuineness in interacting with them (Soenens & Beyers, 2012). These recommendations are consistent with perceived coercion literature that underscores admission approaches that seek to facilitate voice, reduce negative pressures, and maintain a fair process in promoting autonomous functioning. Incorporating an autonomy-supportive admission approach not only stands to foster autonomous motivation but lays a foundation to support all three basic psychological needs—autonomy, competency, and relatedness—during and after admission (e.g., Harder, 2018). Autonomous motivation and satisfaction of all three psychological needs are essential to an adolescent achieving fully integrated, volitional change that can be internalized and maintained long-term (Ryan & Deci, 2008, 2017).

In contrast, admission processes that rely on controlling or coercive pressures may evoke controlled motivation to change and comply with treatment. Coercive admission processes that elicit controlled motivation thwart an adolescent's need for autonomy, thereby preventing the additional needs of competence and relatedness from being satisfied. As adolescents enter RT under controlled motivation and thwarted psychological needs, they are deemed more likely to achieve short-term controlled change that leads to relapse to previous maladaptive behavior when external motivating

factors are removed post-treatment (Ryan & Deci, 2017). Coercive admission processes can also evoke amotivation, leading to an adolescent experiencing a sense of helplessness and increased defiance towards therapeutic change. Under these conditions, an adolescent may be expected to exhibit controlled compliance, inaction, or increased oppositional defiance towards the therapeutic milieu. All three of these potential responses can result in impaired functioning, failing to make meaningful change, and increased psychopathology (Ryan & Deci, 2017).

Psychological Reactance Theory

Psychological Reactance Theory (PRT) is based on two notions: (a) perceived freedom of behavior is central in day-to-day life; (b) when this freedom is lost or threatened, people become motivated to restore it (Rosenberg & Siegel, 2018, p. 281). This motivation to restore lost or threatened freedom is referred to as psychological reactance. According to PRT, psychological reactance occurs within a process of four time-ordered events: "(a) presence of freedom, (b) elimination or threat to freedom, (c) arousal of reactance, and (d) restoration of freedom (Rosenberg & Siegel, 2018, p. 281)." Presence of freedom is based on the concept of *free behaviors*—that is, behaviors a person is aware of and believes they are capable of performing now or in the future (Brehm, 1966; Rosenberg & Siegel, 2018). Elimination and threat to freedom are based on the notion that people experience cognitive and emotional aversion towards constraints imposed on their freedom and, in turn, become motivated to restore it (i.e., psychological reactance; Rosenberg & Siegel, 2018). Arousal of reactance refers to the amount of psychological reactance experienced based on two factors: (a) the subjective

importance of the restricted free behaviors and (b) the perceived strength of the threat (Brehm, 1966; Brehm & Brehm, 1981). Restoration of freedom refers to a behavioral aspect of psychological reactance, often referred to as the *boomerang effect*, where a person becomes more motivated to engage in behavior once it is restricted and then engages in it to reestablish their freedom (Brehm, 1966). As a person seeks to restore their freedom, they may develop resistance or hostility towards the source threatening their freedom (e.g., Rains, 2013). When a person is unsuccessful in their attempts to restore their freedom, they may experience a perceived loss of control or a state of helplessness (Rosenberg & Siegel, 2018).

Psychological reactance is similar in description to SDT's third aspect of amotivation, which involves a person becoming motivated to resist or oppositional defiant in response to a perceived external threat on their autonomy (Deci & Ryan, 2000, 2008; Ryan & Deci, 2008, 2017). PRT and SDT also maintain a similar position that social contextual factors contribute to a person's motivation to resist change, which is a significant barrier to therapeutic change (Provan, 2013; Rosenberg & Siegel, 2018; Ryan & Deci, 2008, 2017). SDT-based procedures for enhancing autonomous motivation and approaches that reduce perceived coercion may also reduce the experience of psychological reactance among persons entering behavioral health treatment (Van Petegem et al., 2015).

In sum, psychological reactance is a form of motivated resistance that can be evoked when a person believes their freedom is threatened by an external source (Rosenberg & Siegel, 2018). In this vein, psychological reactance does not represent a person's intrinsic resistance to change that originates within themselves, but rather a form

of resistance elicited within their environment (Beutler et al., 2011). When a person experiences psychological reactance, they can become overtly resistant and hostile towards the source of the threat as they seek to restore and protect their freedom (Brehm & Brehm, 1981; Lewing & Caraway, 2019). Therefore, psychological reactance is described as an interpersonal form of resistance that can carry important implications in behavioral healthcare settings, particularly those that rely on coercion (Provan, 2013; Ryan et al., 2011; Ryan & Deci, 2000, 2008).

Empirical Research

Empirical research pertaining to psychological reactance and the admission process in RT appears not to exist. In other research domains, psychological reactance shows an inverse relationship with motivation to change and therapeutic effectiveness (Shoham et al., 2004; Sittenthaler et al., 2015; Van Petegem et al., 2015). Psychological reactance has also been linked with several adverse emotions, including anger, hostility, fear, and resentment, higher perceived coercion, and reduced autonomous motivation (Deci & Ryan, 2000; McNiel et al., 2013; Newton-Howes & Mullen, 2011; Van Petegem et al., 2012; Van Petegem et al., 2015; Winick, 2008). Intervention research illustrates a positive relationship between clients prone to reactance and intervention styles. In particular, Beutler et al.'s (2011) study of more than 1000 psychotherapy clients found that reactant-prone clients responded better to non-directive approaches; whereas, those with decreased reactance proneness responded better to directive approaches. In sum, the existing PRT research, albeit limited, demonstrates that psychological reactance is associated with adverse emotions and perceptions, which pose a risk to increased

resistance and decreased autonomous motivation to change at RT admission. Additional research is essential to understanding (a) the relationship between admission practices and psychological reactance and (b) the influence of psychological reactance at admission on autonomous motivation and outcomes in RT.

RT Admission Process

Psychological reactance is particularly relevant to the RT admission process, especially in relation to the use of coercive tactics to restrict or control adolescents' behavior. Adolescence is a critical period of development where personal autonomy and a sense of self are fundamental, making adolescents increasingly prone to experiencing psychological reactance (Ryan et al., 2015; Van Petegem et al., 2015). According to PRT, RT admission practices that rely on coercive strategies can induce psychological reactance in adolescents (Van Petegem et al., 2015; Vansteenkiste et al., 2014). When adolescents experience psychological reactance during admission, they are more likely to perceive the process as threatening and experience feelings of anger and hostility towards family members, referring professionals, program staff, or others who may be perceived as the source threatening their freedom. This perception of threat and feelings of anger and hostility can, in turn, increase their motivation to resist treatment and exhibit oppositional defiance during and after admission in an attempt to safeguard or restore their freedom. As a result, adolescents who experience psychological reactance are considered at an increased risk for poor treatment outcomes, including failing to make positive change, increased psychopathology, and, in some instances, removal from treatment (Ryan & Deci, 2017; Van Petegem et al., 2015; Vansteenkiste et al., 2014). In

this vein, PRT is consistent with the larger body of coercion literature that favors admission approaches that facilitate choice and reduce the perception and use of coercive pressures (e.g., Van Petegem et al., 2015; Vansteenkiste et al., 2014).

PRT dovetails with SDT's third aspect of amotivation that involves a person becoming motivated to resist or oppositional defiant in response to a perceived external threat on their autonomy or personal freedom (Rosenberg & Siegel, 2018; Ryan & Deci, 2017). PRT is also comparable to SDT in its position that social contextual factors contribute to this form of resistance, which is seen as a significant barrier to therapeutic change in RT (Rosenberg & Siegel, 2018; Ryan & Deci, 2017). SDT-based procedures for enhancing autonomous motivation and approaches that reduce perceived coercion may also reduce the experience of psychological reactance among adolescents entering RT.

Theory Summary

The status quo for admitting involuntary adolescents into RT is to rely on the use of coercion, including exclusion from the decision-making process, therapeutic deceit, the threat of harsher consequences or force, or the use of force (Gutterswijk et al., 2020; Harder et al., 2012; Lynch et al., 2017; Russell, 2006, 2007). Problematically, the status quo lacks empirical and theoretical support. The extant literature, though limited, provides a basis for understanding the influence of coercion on adolescents during admission and calls for additional scientific inquiry into such practices (Cook & Artino, 2016; Harder, 2018; Harder et al., 2012; Meschke et al., 2012; Ryan et al., 2011).

According to SDT, the use of external pressures, such as coercion, to enter treatment can undermine the quality of a person's motivation towards positive change, which also applies to adolescents' motivation during RT admission (e.g., Ryan & Deci, 2008, 2017). SDT also emphasizes that autonomous motivation is central to optimal immediate and long-term functioning, including therapeutic change in RT (Ryan & Deci, 2008, 2017). According to PRT, the experience of psychological reactance can disrupt the therapeutic process by undermining a person's autonomous motivation and evoking oppositional defiance (Brehm & Brehm, 1981; Miller & Rollnick, 2013; Provan, 2013; Van Petegem et al., 2012). The use of coercive admission pressures is reasoned to evoke psychological reactance in adolescents entering RT, especially in situations where they perceive high levels of coercion.

Autonomy-supportive methods are reasoned to facilitate the perception of choice and autonomous motivation during the RT admission process. In contrast, coercive admission methods, which rely on controlling pressures to compel adolescents into treatment, tend to be associated with controlled motivation, amotivation, and psychological reactance (Brehm & Brehm, 1981; Miller & Rollnick, 2013; Provan, 2013; Van Petegem et al., 2015). In SDT, controlled motivation is associated with temporary change; amotivation is associated with attenuated change or increased opposition against change (Deci & Ryan, 2017; Van Petegem et al., 2015). In PRT, psychological reactance is associated with inaction and increased oppositional defiance towards the proposed change and the source of the pressure to change (Brehm & Brehm, 1981; Provan, 2013; Van Petegem et al., 2015). Research has shown that high-perceived coercion is associated with thwarted autonomous motivation and increased psychological reactance (e.g., Wild

et al., 2006; Ryan & Deci, 2008, 2017). Therefore, an adolescent who experiences or perceives high coercive pressures during RT admission is reasoned likely to exhibit controlled motivation, amotivation, or psychological reactance. As a result, such adolescents may be anticipated to experience impaired functioning and maladaptive therapeutic outcomes (Deci & Ryan, 2000, 2008, 2017)

Integrated Model of SDT and PRT for Coerced Admissions in RT

SDT and PRT are combined with the extant literature on coercive admissions to provide a conceptual foundation for this dissertation. Figure 2.1 delineates an integrated conceptual model for initial motivation and psychological reactance among involuntary or treatment refusal adolescents coerced into RT. This model is presented within the context of SDT and PRT to illustrate the influence of other factors on motivation prior to RT admission and different change trajectories associated with motivation quality and psychological reactance.

In line with SDT, a person's psychopathology, including mental health and substance use issues, and motivation to change exist prior to admission into RT. Unmet psychological needs are posited to contribute to the development of psychopathology and lower quality of motivation to change or amotivation prior to RT, both of which contribute to a person refusing treatment. Next, the use of coercion, including any external pressure from an authoritative source that restricts or compels a person's choice, may be used to admit a person who is refusing treatment involuntarily.

Consistent with SDT, the use of coercion to compel admission into RT can lead to increased controlled motivation or amotivation. Controlled motivation leads to controlled

cooperation or compliance in the short term and controlled change in the long term. Controlled change is often temporary and associated with an increased risk of relapse to previously maladaptive behavior and psychopathology after the coercive or controlling pressures are removed post-discharge from RT. Amotivation is associated with limited cooperation or poor engagement and oppositional defiance in the short term, leading to no change or maladaptive change, respectively. In line with PRT, the use of coercion during admission can also induce psychological reactance if a person perceives it as a threat to their autonomy. Psychological reactance is also associated with oppositional defiance in the short-term and long-term maladaptive change during and after RT.

The proposed *coercive admission model* in Figure 2.1 combines SDT and RT with the extant literature to emphasize the role of an adolescent's admission experience in their initial quality of motivation for change and psychological reactance, which can then influence short-term and long-term treatment outcomes (Brehm & Brehm, 1981; Deci & Ryan, 2008, 2017; Hiday et al., 1997; Monahan et al., 1995, 1999). An adolescent who initially refuses treatment and is admitted into RT via coercion may exhibit a high amount of controlled motivation or amotivation. They may also exhibit psychological reactance, which overlaps with an oppositional form of amotivation.

Controlled motivation and amotivation due to the lack of desire or perceived control to change can lead to attenuated treatment outcomes. In contrast, psychological reactance and oppositional amotivation can lead to maladaptive treatment outcomes and, in some cases, program removal. Therefore, improving the admission experience for involuntary or treatment refusal adolescents entering RT is reasoned to increase the quality of their motivation and reduce their experience of psychological reactance at

admission, which can also improve engagement and reduce opposition post-admission (Brehm & Brehm, 1981; Deci & Ryan, 2000, 2008, 2017; Provan, 2013; Van Petegem et al., 2015).

Dissertation Questions

This dissertation examines self-reported perceived coercion, negative pressures, voice, and angry emotion in relation to IYT among adolescents entering outdoor RT. Additionally, adolescents' severity of psychological distress, as measured by the Youth-Outcome Questionnaire Self-Report, and demographic variables, including gender and age, are investigated as covariates. Specifically, the following research questions are addressed using the MacArthur Admission Experience Survey, including its subscales for each of the self-reported variables, and program admission data:

1. Is the relationship between involuntary youth transport and adolescents' perceived coercion at admission indirectly influenced (mediated) by their experience of voice exclusion and negative pressures?
2. Is the relationship between involuntary youth transport and adolescents endorsing angry emotion at admission indirectly influenced (mediated) by their experience of voice exclusion, negative pressures, and perceived coercion?

Based on these research questions, the following two hypotheses are proposed:

Hypothesis 1: Involuntary youth transport will show a statistically significant indirect relationship with adolescents' perceived coercion at admission through their experience of voice exclusion and negative pressures in a parallel mediation model (see Figure 2.2).

Hypothesis 2: Involuntary youth transport will show a statistically significant relationship with adolescents endorsing angry emotion at admission through their experience of voice exclusion, negative pressures, and perceived coercion in a serial mediation model (see Figure 2.3).

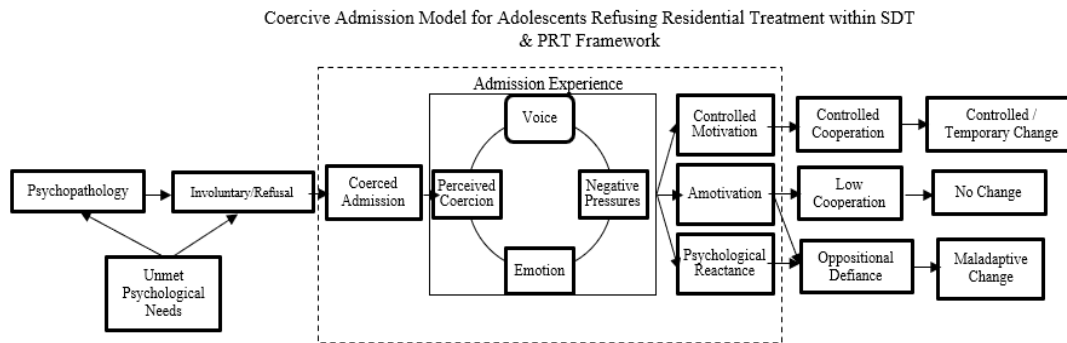


Figure 2.1. Integrated coercive admission model

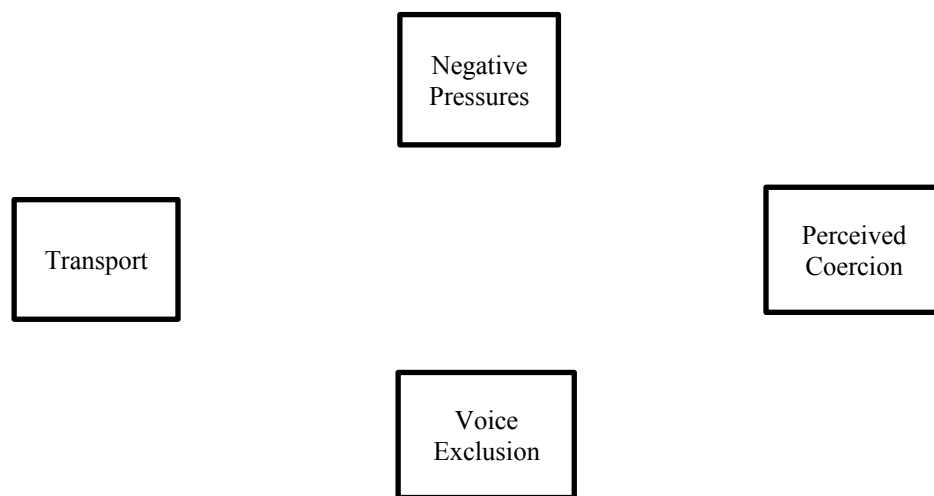


Figure 2.2. Hypothesis 1

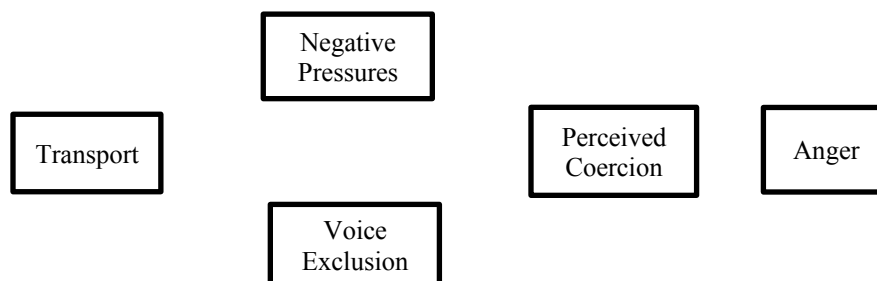


Figure 2.3. Hypothesis 2

CHAPTER 3

METHODOLOGY

This dissertation examined admission coercion among adolescents entering outdoor behavioral healthcare RT treatment. Admission coercion includes both perceived coercion and objective coercion. Involuntary youth transport (IYT) is the form of objective coercion investigated in this study. Adolescents' perceptions of voice, negative pressures, and the negative emotion of anger are also examined, as they are recognized contributors of perceived coercion. This dissertation examined the following two research questions and hypotheses via structural equation modelling (SEM) path analyses of secondary data.

Research Questions and Hypotheses

This dissertation investigated the following two research questions and hypotheses:

Research Question 1: Is the relationship between IYT and adolescents' perceived coercion at admission indirectly influenced (mediated) by their experience of voice exclusion and negative pressures?

Hypothesis 1: IYT will show a statistically significant indirect relationship with adolescents' perceived coercion at admission through their experience of voice exclusion and negative pressures in a parallel mediation model (see Figure 2.2).

Research Question 2: Is the relationship between IYT and adolescents endorsing angry emotion at admission indirectly influenced (mediated) by their experience of voice exclusion, negative pressures, and perceived coercion?

Hypothesis 2: IYT will show a statistically significant indirect relationship with adolescents endorsing angry emotion at admission through their experience of voice exclusion, negative pressures, and perceived coercion in a serial mediation model (see Figure 2.3).

Research Design

This dissertation utilized secondary data from a cross-sectional study with a convenience sample of 105 adolescents admitted into a Utah-based outdoor RT program between May 2013 and February 2014. Secondary data analysis is commonly used in social science research and is an effective and efficient method for investigating new areas of research with existing data (Vartanian, 2011). The length of time between the original collection of data and the present analyses is notable. However, these are the most recent data available prior to the current COVID-19 pandemic. The use of IYT with similar populations of youth in outdoor residential treatment also remains a persistent issue in current practice and research (Gass et al., 2021; Tucker et al., 2018). Cross-sectional designs are useful for evaluating individuals' subjective experiences at a specific time point in relation to a previous exposure of interest (Setia, 2016). They are also used to establish support for more comprehensive research designs in new areas of research (Setia, 2016). As this is the first study to investigate adolescents' subjective perceptions at admission in relation to IYT, a secondary analysis of cross-sectional data

was determined to be an effective and efficient method to address this dissertation's research questions and hypotheses.

Adolescents' perceived coercion, negative pressures, voice exclusion, and angry emotion were measured via self-report on the MacArthur Admissions Experience Survey (Gardner et al., 1993; Hoge et al., 2001). IYT status and demographic data, including race, gender, and age, were self-reported on an admission questionnaire. Participant data were collected at the time of admission, immediately after adolescents arrived at the program, in compliance with IRB approval and in conjunction with a larger longitudinal study by the National Association of Therapeutic Schools and Programs (NATSAP) Research and Evaluation Network.

Participants

Participants ($N = 105$, 64 males, 41 females, $M_{age} = 15.7$ years, age range: 13-17 years) were recruited at time of admission from a Utah-based wilderness therapy program between May 2013 and February 2014. Participants were predominantly white/Caucasian: 68 (43 males, 25 females) identified themselves as "white," 3 (2 males, 1 female) as "African American," 3 (males) as "Hispanic," 1 (female) as "Asian American," 1 (female) as "Native American," 1 (male) as other, and 28 (15 males, 13 females) as non-identified. Four participants were removed for failing to complete all surveys, resulting in a usable sample of 101 participants.

Program intake data indicate that 45% (47) of participants arrived via transport, and 55% (58) arrived via a method other than transport. Of those who were not transported, 37 (35%) arrived with a parent guardian or other family member, 17 (16%)

arrived alone as an unaccompanied adolescent, three (3%) only specified as “not transported,” and one (< 1%) arrived by staff from another program.

Participant data were collected at the time of admission, immediately after adolescents arrived at the program, and in compliance with the IRB approved protocol. Exclusion criteria were based on program admission criteria that excluded adolescents with a history of conduct disorder, including significant history of physical aggression and violence, and those with a recent suicide attempt or considered a high suicide risk. Participants were offered no incentives to complete surveys and participation was voluntary. All adolescent participants provided written assent prior to completing surveys. Parents provided written informed consent for their adolescent’s data to be used. Following assent, admission staff provided participants with the surveys used in this research and a larger study conducted by the NATSAP Research Network.

Measures

Residential Treatment Admission Experience Survey (RT-AES)

The RT-AES was adapted (with author permission) from the MacArthur Admission Experience Survey (AES) short-form. The AES is a 16-item true-false survey, consisting of the following scales: (a) Perceived Coercion Scale (PCS), (b) Negative Pressures Scale (NPS), (c) Voice Scale (VS), and (d) Affective Reactions Scale (ARS; Hiday et al., 1997). Participants in this study were surveyed via the adapted version (RT-AES) of the AES (with author permission) for adolescents entering residential treatment (Gardner et al., 1993). Specifically, text references to “hospital” were omitted or replaced with the term “program” to be relevant to the context of this sample. The AES has been

adapted and used across a wide range of populations and cultures (e.g., Fu et al., 2008; Golay et al., 2017, 2019; Mandarelli et al., 2019). All scale items have three response categories, “true,” “false,” and “I don’t know” (Hoge et al., 2001). The scoring of “I don’t know” item responses are a subject of extensive debate in research. Schafer and Graham’s (2002) recommendations for determining the value of “I don’t know” response were used in this dissertation. Their recommendations include evaluating the underlying value these responses before classifying them as missing data. In recognizing that participants responded to other scale items as “true” or “false,” these items were not treated as missing data. Consistent with previous scoring on these scales, “I don’t know” item responses were interpreted conservatively as ambivalence (Latimer et al., 2010).

Residential Treatment Perceived Coercion Scale (RT-PCS)

The RT-PCS consists of the PCS's five items measuring adolescents' perceived lack of freedom, choice, idea, control, and influence during RT admission (Hoge et al., 2001). Responses to each question were coded “true” = 0, “false” = 1, “I don’t know” = .5. Composite scores of the RT-PCS ranged from 0 to 5, with higher scores indicating more perceived coercion. PCS data have shown high internal reliability, with item-total correlations ranging from .60 to .73 and a Cronbach’s alpha of .86 (Hiday et al., 1997; Nicholson et al., 1996). PCS data also show good interrater reliability, with patient ratings strongly correlating with family ($r = .61$) and clinician ratings ($r = .63$; Hoge et al., 1998; Nicholson et al., 1996). PCS data have shown strong internal consistency in outpatient settings (Swartz et al., 2002) and across cultures (Fu et al., 2008; Golay et al., 2017; Mandarelli et al., 2019).

In developing the PCS, Gardner et al. (1993) conducted a correspondence analysis of its five items. Their analysis found support for a single latent variable, perceived coercion during admission, among item data with an eigenvalue of .66 and strong factor loadings across each of the five items, ranging between .77 and .83 (Gardner et al., 1993). In research, PCS data has offered support for discriminant validity by showing statistically significant higher mean scores among involuntary ($M = 3.27$) versus voluntary admissions ($M = .64$; $t = -9.08$, $p < .001$; Hoge et al., 1993). Hoge et al. (1998) reported similar statistically significant differences in PCS ratings between involuntary and voluntary admission status, which were consistent across patient, family, and clinician ratings. PCS data have provided evidence of convergent validity by showing strong correlations with data on the MacArthur Admission Experience Interview ($r = .79$; Gardner et al., 1993). Data on both of these scales also showed a bimodal distribution and similar pattern of factor loadings (Gardner et al., 1993). PCS data also show strong positive correlations with involuntary admission status ($r = .53$) and score data on the Coercion Ladder ($r = .56$) and Coercion Experience Scale ($r = .58$; Golay et al., 2017; Hiday et al., 1997). Cross-cultural research has yielded similar support for construct validity for the PCS (Golay et al., 2017; Mandarelli et al., 2019).

Residential Treatment Negative Pressures Scale (RT-NPS)

The RT-NPS consists of the six NPS items measuring adolescents' perceived interpersonal threat, intimidation, and force during admission. RT-NPS responses were coded “true” = 1, “false” = 0, “I don’t know” = .5. The first 5 items on this scale were reverse scored to align its direction with item 6 and interpretation with the RT-PCS. That

is, higher scores on the RT-NPS correspond with higher scores on the RT-PCS. Composite scores ranged from 0 to 6, with higher scores indicating more negative pressures. NPS data have demonstrated item-total correlations ranging from .54 to .70 with a Cronbach's alpha of .84, indicating high internal reliability (Hiday et al., 1997). NPS data have also demonstrated strong internal consistency in outpatient studies (Swartz et al., 2002) and across cultures (Fu et al., 2008; Golay et al., 2017; Mandarelli et al., 2019).

In comparison to the PCS, the NPS has received less investigation regarding its validity (e.g., Gardner et al., 1993). However, NPS data have shown strong associations with PCS data ($r = .61$) in research, offering support for concurrent validity (Hiday et al., 1997). NPS data have suggested discriminant validity by showing statistically significant differences in scores between involuntary and voluntary admissions ($t(149) = 6.74$; $p < .001$; $d = 1.18$), with higher scores among involuntary (vs. voluntary) admissions (Golay et al., 2017). NPS data have shown strong correlations with score data on the VS ($r = .60$) and Coercion Experience Scale ($r = .63$), suggesting convergent validity (Golay et al., 2017; Hiday et al., 1997). Cross-cultural research has yielded similar support for concurrent validity and construct validity for the NPS (Golay et al., 2017; Mandarelli et al., 2019).

Residential Treatment Voice Scale (RT-VS)

The RT-VS is made up of the three VS items measuring adolescents' perceived lack of voice or voice exclusion, validation, and inclusion in the decision-making process for RT (Hiday et al., 1997). RT-VS responses were coded “true” = 0, “false” = 1, “I don't

know” = .5. The third item is reverse scored to correspond with the first two items. Composite scores ranged from 0 to 3, with higher scores indicating less perceived voice or higher voice exclusion. Originally, the VS included a fourth item: "No one seemed to know whether I wanted to come into the hospital." However, this item was previously removed from the scale due to poor psychometric properties (Gardner et al., 1999, 2001; Hoge et al., 2001). Previous research of the original four-item scale reported a Cronbach's alpha of .76 and item-total correlations from .52 to .60 (Hiday et al., 1997). The VS has also demonstrated strong internal consistency in outpatient studies (Swartz et al., 2002) and across cultures (Fu et al., 2008; Golay et al., 2017; Mandarelli et al., 2019).

In comparison to the PCS, the VS has also received less research investigation into the validity as a measurement tool. However, VS data have demonstrated strong associations with PCS data ($r = .71$), which offers support for concurrent validity (Hiday et al., 1997). VS data have provided support for discriminant validity by showing statistically significant differences in scores between voluntary and involuntary admissions ($t(148) = -6.20; p < .001; d = -1.08$), with less voice among involuntary admissions (Golay et al., 2017). As noted in the previous section, VS data have shown strong correlations with NPS data ($r = .60$) and Coercion Experience Scale data ($r = .57$), suggesting convergent validity (Golay et al., 2017; Hiday et al., 1997). Cross-cultural research has also yielded similar support for concurrent validity and construct validity for the VS (Golay et al., 2017; Mandarelli et al., 2019).

Residential Treatment Affective Reactions Scale (RT-ARS)

The RT-ARS consisted of six items representing different affective reactions in response to admission, including angry, sad, pleased, relieved, confused, and frightened (Hoge et al., 2001). Responses were coded “true” = 1, “false” = 0, “I don’t know” = .5. In line with the objectives of this research and PRT, angry was the only affective state analyzed in this study. This item was reverse scored with 1 indicating the presence of angry emotion. While this scale has been used in the research (e.g., Callaghan et al., 2021; Gardner et al., 1999; Golay et al., 2017; McKenna et al., 2003), reliability and validity data have not been reported.

Youth-Outcome Questionnaire Self-Report 2.0 (Y-OQ-SR)

The Y-OQ-SR was used to represent adolescent participants’ overall severity of psychological distress at admission. The Y-OQ-SR is composed of 64-items which are summed across six separate subscales (intrapersonal distress, somatic, interpersonal relations, critical items, social problems, behavioral dysfunction) and is presumed to assess different behavioral domains in children and adolescents. The overall composite score of each of these Y-OQ-SR dimensions will be used to illustrate the overall status of adolescents’ psychological distress. The Y-OQ-SR (and the Y-OQ) is primarily used as an outcome measure to track change during and post-treatment (Burlingame et al., 2005). Total Scores ≥ 47 are considered clinically significant and indicate an adolescent is experiencing a high level of psychological distress (Burlingame et al., 2005). However, the Y-OQ-SR has also demonstrated value in using its total score as an overall measure of severity of psychological distress (Ridge et al., 2009).

Y-OQ-SR data have demonstrated high internal reliability with estimates of

internal consistency ranging from .71 to .91 and a coefficient alpha of .95 (Wells et al., 1996, 2003; Ridge et al., 2009). Y-OQ-SR data have also shown concurrent validity in demonstrating strong relationships with other commonly employed self-report measures of adolescent psychopathology: Behavior Assessment System for Children-2 – Self-Report of Personality (BASC-2 SRP-A) and Child Behavior Checklist Youth Self Report (CBCL-YSR; Cannon et al., 2010; Ridge, et al., 2009). Moderate support has been demonstrated for divergent validity for Y-OQ-SR data by comparing score data from its subscales with other standardized measures of different criteria (Ridge et al., 2009). The Y-OQ-SR and its predecessor, the Y-OQ (Burlingame et al., 1995), are prevalent in the outdoor RT literature (e.g., Tucker et al., 2018; Bettmann et al., 2013; Russell, 2003, 2007).

Program Questionnaire

Adolescent participants completed a program questionnaire indicating if they arrived into treatment via involuntary transport, accompanied by family members or others, or unaccompanied. Adolescents also self-reported on their race, gender, and age.

Statistical Approach

Structural Equation Modeling (SEM): Path Analysis

I utilized SEM path analysis for observed variables as outlined by Kline (2015) to examine each research hypothesis. Path analysis is an extension of multiple regression and sub-category of structural equation modeling that is useful for evaluating hypothesized direct and indirect (mediated) effects between observed variables (Kline,

2015). This approach involves model specification, model identification, data preparation, estimating model fit, examining parameter estimates, and reporting statistical findings (Kline, 2015). Model specification, identification, and fit are only reviewed in this section. They will be discussed more precisely in reference to each hypothesis in the subsequent data analysis section. Data preparation, parameter estimates, and statistical findings will be discussed in the data analysis section for each hypothesis. Of note, Hayes' (2014) regression-based approach for parallel and serial multiple mediator models is also a viable option for evaluating my hypotheses and would yield similar results. However, I selected Kline's (2015) SEM path analysis approach for observed variables for this dissertation based on its ability to produce model fit statistics and my familiarity with it.

Model Specification

Model specification is the first and perhaps most important step in SEM path analysis (Kline, 2015). Model specification involves the researcher(s) presenting a visual representation of their hypothesized conceptual model, including the expected relationships among variables of interest (Kline, 2015, p.119). This process is guided by the researcher's judgment which should rely on previous research and the researcher's expertise (Kline, 2015). Only observed variables are specified in the SEM path models in this dissertation. All observed variables are classified as exogenous or endogenous. Exogenous variables are assumed to be influenced or caused by factors outside of the model and are also referred to as predictor or independent variables (IV). Endogenous variables are assumed to be influenced or caused by at least one other variable within the

model. Endogenous variables can include outcome or dependent variables (DV) but also mediator variables (MedV; Kline, 2015).

Path models can include three different types of effect, including direct, indirect, and total effect. Path models that include indirect (or mediation) effects include all three of these effects. A direct effect refers to the effect an exogenous variable or IV has on an endogenous variable or DV independent from any indirect (mediation) effects (Kline, 2015). An indirect effect refers to the effect an exogenous variable or IV has on an endogenous variable or DV through its effect on a third endogenous or mediating variable (Kline, 2015). In other words, an exogenous variable or IV shows an effect on a third endogenous or mediating variable which leads to a change in the endogenous variable or DV. Total effect is defined as the sum of the direct and indirect (mediating) effects of an exogenous variable or IV on an endogenous variable or DV (Kline, 2015, p. 133-134). Total effect can also be described as the effect of an exogenous variable or IV on an endogenous variable or DV with no indirect (mediating) effect included in the analysis (Jaggers et al., 2021). Depending on the direction of the relationships or effects between the exogeneous and endogenous variables, a path model can be described as recursive or nonrecursive. Recursive path models are more basic and involve unidirectional relationships among the variables of interest in its model. These models also assume no correlation among the disturbances or residual variation in the endogenous variables (Kline, 2015). Nonrecursive models are more complex and involve feedback loops or bidirectional relationships among variables in its model (Kline, 2015). While this will be described more specifically in relation to this dissertation's hypotheses in a latter section, all three hypothesized models in this dissertation are recursive.

Model Identification

Model identification is the process of evaluating whether the specified model is statistically feasible. Model identification is determined by whether it is theoretically possible to generate unique estimates of every model parameter (Kline, 2015, p. 119). Model identification is determined by the model degrees of freedom, which must be equal to or greater than 0 to be identified. To be identified, a specified model must include as many observations as there are free parameters and free parameters cannot exceed the number of observations (Kline, 2015). The number of observations in a model can be calculated by the following formula, where v equals number of observed variables: $v(v + 1) / 2$ (Kline, 2015). Model degrees of freedom is then calculated by the following formula where p equals number of free parameters to be estimated: $df_M = p - q$ (Kline, 2015).

When a specified model fails to be identified, it is under-identified and theoretically incapable of estimating all free parameters in a model. As a result, the researcher must return to the specification phase before proceeding (Kline, 2015). When a model's degrees of freedom equal 0, or the number of observations equals the number of free parameters, it is considered just identified. When a model's degrees of freedom are greater than 0, or the number of observations exceeds the number of estimated free parameters, it is considered overidentified (Kline, 2015). Of note, all recursive path models are considered identified due to the natural characteristics of such models (Kline, 2015). While this will also be discussed specifically to each hypothesis in a latter section,

all hypothesized path models in this dissertation are considered identified on the basis of their recursive property.

Model Fit

Model fit in SEM path analysis refers to how well the hypothesized model structure fits the data. This is determined by evaluating how well the relationships in the hypothesized model fit the data's covariance structure (Barrett, 2007; Kline, 2015). While a wide variety of fit indices exist, model fit for all path analyses in this dissertation will be evaluated using the criteria recommended by Hu and Bentler (1999) and Kline (2015), including model chi-square, root mean square error of approximation (RMSEA), comparative fit index (CFI), and standardized root mean square residual (SRMR). The chi-square difference statistic will also be used as an additional measure of changes to fit between Hypotheses 1 and 2, where the first model is nested in the second (Kline, 2015).

The model chi-square is an absolute fit index that compares the discrepancy between the covariances predicted in the hypothesized model and those observed in the sample data. The objective is to demonstrate similarity between both the predicted and observed covariance matrices—that is, to accept or reject the null hypothesis. A low chi-square value with an insignificant p value ($p < .05$) is an indicator of goodness of fit. As a result, model chi-square is viewed as a “badness of fit” index (Hooper et al., 2008; Hu & Bentler, 1999; Kline, 2015).

RMSEA is also an absolute fit index and considered a “badness of fit” index, with a value of 0 indicating the best fit. RMSEA indicates approximate fit (versus exact fit in model chi-square) by measuring discrepancy of the covariance matrices in the

hypothesized model and sample data (Kline, 2015). RMSEA is sometimes considered an indicator of model fit with the population (Byrne, 1998). The general consensus in research is that RMSEA values less than .03 may indicate excellent fit and values greater than .07 may indicate poor fit (Hooper et al., 2008; Hu & Bentler, 1999; Steiger, 2007). RMSEA values are generally reported with 90% confidence intervals, with a lower limit close to 0 and upper limit less than .08 indicating good fit (Hooper et al., 2008).

SRMR is a measure of absolute fit. It is also considered a badness of fit index with lower scores being preferred. SRMR looks at differences in residuals from the hypothesized model's covariance structure and the sample data's covariance structure. SRMR values range from 0 to 1. A value of 0 indicates perfect fit. Values greater than .08 may indicate poor fit and those less than .05 may indicate good fit (Byrne, 1998; Hooper et al., 2008; Hu & Bentler, 1999).

CFI is a goodness of fit index that measures incremental fit. Incremental fit indices assume the null hypothesis includes all variables being uncorrelated (Hooper et al., 2008). As a result, higher CFI values in comparison to lower values are preferred and considered an indicator of better fit. CFI values range between 0 and 1 (Hooper et al., 2008). A CFI value of 1 means no change from approximate fit. CFI values greater than .90 are considered acceptable with values greater than .95 preferred (Hooper et al., 2008; Hu & Bentler, 1999).

Data Analysis

All data were first entered into and cleaned using IBM SPSS Statistics (version 28). Prior to analyses, variables were investigated for accuracy of data entry, missing

values, and fit between their distributions and assumptions. Patterns of missing values were examined using IBM SPSS Statistics during the data investigation stage. Full-information maximum likelihood estimation was used to address missing item data and minor violations in assumptions related to these data in the first path analysis, which includes a continuous outcome variable. Weighted least squares means and variance adjusted (WLSMV) estimation was used in the second path analysis due to a dichotomous outcome variable in the model. Standard nonparametric bootstrapping with 1000 draws was used to address minor violations of normality and improve power for both path analyses (Preacher & Hayes, 2004). Mplus statistical software provided bootstrapped standard errors and bias-corrected confidence intervals.

Descriptive statistics for all model variables were reported in the results. Standardized and unstandardized parameter estimates were reported, including the direct, indirect, and total effects specified in the subsequent sections for each hypothesis. All observed effects were evaluated according to an alpha level of .05 and 95% confidence intervals. Mplus statistical software (v. 8; Muthén & Muthén, 1998-2017) was used for all statistical analyses.

Research Question/Hypothesis 1

A priori analysis for calculating RMSEA power of .80 with alpha set at .05 recommended a minimum sample of 788 for testing the structural model for Hypothesis 1 (Preacher & Coffman, 2006). However, an important caveat of using RMSEA for power analysis is that it tends to favor models with larger degrees of freedom and can inaccurately indicate poor fit for models with low degrees of freedom (Kenny et al.,

2015). Considering the model degree of freedom for this structural model is 1, RMSEA was not considered a valid indicator of power for this hypothesis. Using criteria from Kline (2015), a minimum sample size of 90 was recommended for Hypothesis 1.

As illustrated in Figure 2.2, the specified path model is recursive and simultaneously evaluates the indirect (mediating) effects of voice exclusion and negative pressures on the relationship between involuntary youth transport and adolescents' perceived coercion at admission in a parallel mediation model. The direct effect between IYT and perceived coercion were also evaluated, along with the direct effects for the individual parameters of both indirect effects. Total indirect and overall effects were also examined. Finally, age, sex, and psychological distress were examined as covariates in the model. Due to a substantial amount of missing data on race and the vast majority of available data identifying as white/Caucasian, race was not examined as a covariate.

Evaluation of the initial specified path model according to the counting principle discussed in Kline (2015) indicated the initial model displayed in Figure 2.1 was overidentified. Model fit was evaluated using the criteria recommended by Hu and Bentler (1999) and Kline (2015) previously discussed. Residuals of individual parameters were also examined to assess local fit. Model fit, including respecification, is discussed in the results chapter. After establishing adequate model fit, statistical analyses were conducted via Mplus statistical software to evaluate Hypothesis 1, including all specified direct, indirect, and total effects.

Research Question/Hypothesis 2

A priori analysis for calculating RMSEA power of .80 with alpha set at .05

recommended a minimum sample of 300 for testing the structural model of Hypothesis 2 (Preacher & Coffman, 2006). As noted for Hypothesis 1, RMSEA can be an invalid indicator of power for structural models with small degrees of freedom (e.g., 4; Kenny et al., 2015). As model degree of freedom for this structural model is 4, RMSEA was not considered a valid approach to power analysis for this hypothesis. Using criteria from Kline (2015), a minimum sample size of 110 was recommended for Hypothesis 2. While this suggested a potential caveat for Hypothesis 2, the present sample was considered sufficient for analysis (Kline, 2015). In evaluating individual parameters with the power and alpha levels previously identified, a minimum sample of 74 was determined sufficient (Fritz & Mackinnon, 2007).

As illustrated in Figure 2.3, the specified path model is recursive and simultaneously evaluates the indirect (mediating) effects of voice exclusion, negative pressures, and perceived coercion on the relationship between IYT and adolescents' endorsing angry emotion at admission in a serial mediation model. Specifically, three indirect (mediation) effects were examined, including one single and two double indirect (mediation) effects. The single indirect effect included the relationship between IYT and angry emotion via perceived coercion. The first double indirect effect included the relationship between IYT and angry emotion through negative pressures and perceived coercion. The second double indirect effect included the relationship between IYT and angry emotion through voice exclusion and perceived coercion. The direct effects of all parameters in the model were also examined, along with the model's total indirect and overall effects. Consistent with the path model for Hypothesis 1, age, sex, and psychological distress were examined as covariates.

Evaluation of the initial specified path model according to the counting principle discussed in Kline (2015) indicated the initial model displayed in Figure 2.3 was overidentified. Model fit was evaluated using the criteria recommended by Hu and Bentler (1999) and Kline (2015) previously discussed. Residuals of individual parameters were also examined to assess local fit. Model fit, including respecification, is discussed in the results chapter. After establishing adequate model fit, statistical analyses were conducted via Mplus statistical software to evaluate Hypothesis 2, including all specified direct, indirect, and total effects.

Reflexivity

While I have no conflicts of interest at the time of this dissertation, my previous ownership in a youth transport company should be disclosed. As the result of several ethical concerns surrounding the practice of IYT, including a lack of research supporting its use, I returned to my academic studies in 2011 and eventually discontinued business operations. While I previously endorsed the use of involuntary transport for some adolescents, I experienced firsthand the immediate consequences when adolescents were involuntarily admitted into RT without regard for their involvement or dignity in the admission process or right to due process. These consequences often included increased negative verbal and physical responses towards staff and increased behavioral problems during and after admission. At the same time, I saw firsthand the benefits when adolescents' involvement and dignity were prioritized. While many of these adolescents exhibited initial resistance towards the idea of treatment, they were also often eager to voice their concerns. As their concerns were listened to by staff who treated them with

respect, they often became more open to the idea of entering treatment. These adolescents also tended to exhibit less verbal and physical resistance during and after admission, with many expressing gratitude for being treated with respect despite their reluctance to enter treatment. In my experience, these differences in approaches often existed due to a lack of research-based practices and inadequate legal safeguards for adolescents involuntarily admitted into RT. These were all factors in my decision to pursue this topic for my dissertation with the hope of providing more direction for improving the admission experience for involuntary adolescents entering RT.

To manage bias from my professional experience, I relied on well-established psychological theory, including self-determination theory and psychological reactance theory, and previous research on my constructs of interest to guide my research questions and hypotheses. I also utilized standardized questionnaires with strong psychometric properties to allow for more reliable interpretation with previous findings from the adult literature. Finally, all five members of my dissertation committee were instrumental in reviewing all aspects of my dissertation, including the reported findings and interpretations. Two of my committee members have published extensively on adolescents in residential treatment, along with contributing to recent research related to involuntary transport. One of my committee members has published extensively on adolescents within the juvenile court system. Two of my committee members have a strong background in quantitative analyses and the methods used to analyze data in this dissertation. Finally, my dissertation chair is a well-established researcher in the domain of motivational interviewing.

CHAPTER 4

RESULTS

The dissertation sought to examine adolescents' subjective experiences at admission related to the use of objective admission coercion in residential treatment (RT). Adolescents' subjective experiences included their reports of negative pressures, voice exclusion, perceived coercion, and angry emotion at admission. Involuntary youth transport (IYT) was the specific coercive admission method examined. As previously noted, two SEM path models were specified to investigate the following two hypotheses for Research Questions 1 and 2, respectively:

Hypothesis 1: IYT will show a statistically significant indirect relationship with adolescents' perceived coercion at admission through their experience of voice exclusion and negative pressures in a parallel mediation model (see Figure 2.2).

Hypothesis 2: IYT will show a statistically significant indirect relationship with adolescents endorsing angry emotion at admission through their experience of voice exclusion, negative pressures, and perceived coercion in a serial mediation model (see Figure 2.3).

Data Preparation

Data Collection

This dissertation utilized secondary data collected according to the procedures

described in the methodology section. Accuracy of data entry was examined via IBM SPSS Statistics. The original research sample included 105 adolescents entering an outdoor RT program in Utah. Four participants, specifically numbers 69, 75, 77, and 104, were removed due to failure to complete all survey data. This resulted in a usable sample size of 101 adolescent participants. Information indicating whether these four excluded participants declined or were not allowed to participate was not available. However, data were available regarding their age, gender, IYT status, and Y-OQ-SR scores. Participant 69 was a 16-year-old female who was not transported into treatment with no available Y-OQ-SR score. Participant 75 was a 17-year-old female who was not transported with a Y-OQ-SR of 66. Participant 77 was a 17-year-old male who was transported with a Y-OQ-SR of 61. Participant 104 was a 17-year-old female who was not transported. No additional data were available for these participants.

Data Coding

The exogenous/independent variable, IYT, was dummy coded (not transported = 0, transported = 1). As discussed in the Methodology section, all endogenous/dependent variables, including perceived coercion, negative pressures, voice exclusion, and angry emotion, were measured via subscales of the Residential Treatment Admission Experience Survey (RT-AES), including the Residential Treatment Perceived Coercion Scale (RT-PCS), Residential Treatment Negative Pressures Scale (RT-NPS), Residential Treatment Voice Scale (RT-VS), and the Residential Treatment Affect Reactions Scale (RT-ARS) item for angry emotion. These measures included three responses for each of their items: "true," "false," and "I don't know" (Hoge et al., 2001). "True" and "false"

responses were coded 0 and 1, respectively. Based on Schafer and Graham's (2002) recommendations for determining the value of "I don't know" responses and Latimer et al.'s (2010) previous coding of the AES, "I don't know" responses were interpreted as ambivalence and scored as .5. Due to angry emotion representing a single dichotomous item on the RT-ARS and requirements of weighted least squares means and variance adjusted (WLSMV) estimation for categorical variables, ambivalent responses ($N = 6$) for angry emotion were coded as missing data when analyzed in Mplus statistical software. Composite scores for each RT-AES subscale were calculated as described in the Methodology section. Higher subscale composite scores indicated increased perceived coercion, negative pressures, voice exclusion, and angry emotion. The demographic covariate sex was dummy coded (male = 0, female = 1). Participants' age in years represented the covariate age. The Youth-Outcome Questionnaire-Self-Report 2.0's (Y-OQ-SR) total score represented the covariate psychological distress.

Missing Data

Frequencies and patterns of missing data were examined via IBM SPSS Statistics for individual scale items and total scores across all measures. No missing data were identified on the exogenous/independent variable of IYT. Overall, there were 10 (9.9%) missing data across all endogenous/dependent variables for scale items and total scores on the RT-AES. However, this rate was lower for each subscale. Specifically, 2 (2%) data were missing on the RT-PCS and RT-NPS. One (1%) score was missing on the RT-VS and 5 (5%) on the RT-ARS item for angry emotion. No data were missing on more than one of these measures across participants. For the three covariate variables, 1 (1%)

participant's age was missing, no data were missing on gender, and 8 (7.9%) Y-OQ-SR score data were missing. However, 6 of the missing Y-OQ-SR scores were attributed to data collection error (i.e., survey was completed by participants but misplaced by program staff), resulting in 2 (2%) missing data attributed to participants.

Angry emotion on the RT-ARS was the only variable measured that met Kline's (2015) recommended criteria of missing data ($\geq 5\%$) for further statistical analysis to evaluate the mechanism of missingness, including missing completely at random (MCAR), missing at random (MAR), and missing not at random (MNAR). A missing data indicator variable was created for missing data on angry emotion to evaluate the mechanism of missingness (Rubin, 1987). Logistic regression analysis was then used to investigate the relationship of all continuous variables with the probability of missing data on angry emotion (Heymans & Eekhout, 2019; Ridout & Diggle, 1991). As displayed in Table 4.1, no statically significant associations were identified between the dependent variables and the probability of missing angry emotion data, suggesting that missing data on angry emotion were unrelated to the observed variables in the data.

Next, Levene's test of equality of variances and an independent samples t-test were used to further evaluate the missing data for angry emotion with each continuous variable (Heymans & Eekhout, 2019). As shown in Table 4.2, no statistically significant differences in variances or means between the missing indicator variable for angry emotion and the included continuous variables were found. IBM SPSS Statistics' crosstabulations procedure was utilized to evaluate missing data for angry emotion on all categorical variables in the model. As shown in Tables 4.3 and 4.4, no statistically significant differences were found for missing angry emotion data with IYT or sex. While

the Pearson chi-square test and Fisher's exact test results are shown, the latter is the more accurate measure of differences for two-by-two tables in small sample sizes (McDonald, 2014). Based on these results, no evidence was found indicating missing angry emotion data were not MCAR (Heymans & Eekhout, 2019; Kline, 2015).

Missing data on all variables were accounted for in both path analyses via two model-based estimation methods in Mplus statistical software. Full-information maximum likelihood estimation was used for missing data in the path analysis for Research Question/Hypothesis 1, which contained a continuous endogenous/dependent variable (i.e., perceived coercion; Kline, 2015; Lee & Shi, 2021; Peyre et al., 2011). WLSMV estimation was used in the path analysis addressing Research Question/Hypothesis 2, which included a dichotomous endogenous/dependent variable (i.e., angry emotion; Asparouhov et al., 2007; Muthén & Muthén, 1998-2017).

Outliers

Univariate outliers were evaluated for all variables in IBM SPSS Statistics via visual examination of boxplots and frequency histograms. Visual examination of box plots revealed two potential outliers between the 1.5 and 3 interquartile range for psychological distress data and eight for perceived coercion. No potential outliers were observed on other variables. The two outlier scores on psychological distress included Y-OQ-SR scores of 149 and -3. A visual review of the frequency histogram for psychological distress showed a normal data distribution that included these scores. Both scores were also less than three standard deviations from the mean. All eight outlier scores on perceived coercion included RT-PCS scores ranging from 0 to 1, consistent

with the negatively skewed distribution displayed in its frequency histogram. All potential outlier scores were less than three standard deviations from the mean. Individual cases were also examined on both these variables for outlier scores on other variables and to ensure valid data entry. This examination revealed no other outliers or issues regarding the accuracy of data entry.

Multivariate outliers were evaluated via the Mahalanobis distance for each case on all predictor variables, including covariates, in both models, with perceived coercion and angry emotion listed as the dependent variables. Mahalanobis distance was also examined for all predictor variables, excluding covariates, in both models. None of these analyses yielded a Mahalanobis distance that exceeded the critical value or was statistically significant at the alpha of $p < .001$. In sum, no univariate or multivariate outliers were identified in the data in both path analyses.

Multivariate Collinearity

Multivariate collinearity was first examined by calculating R^2 between each variable and other variables in both path models. $R^2 < .90$ for all of these comparisons. The largest R^2 between variables was .64 between perceived coercion and voice exclusion. The largest R^2 in comparing each variable with all of the others was .70, with voice exclusion entered as the criterion. The tolerance statistic was also calculated to illustrate the total proportion of unique standardized variance. As tolerance is calculated by $1 - R^2$ and the largest R^2 was .70, all tolerance values were reasoned to be less than .10. The variance inflation factor (VIF) was calculated by $1/(1 - R^2)$ and examined. The largest VIF statistic was 3.33, less than the point of concern ($VIF > 10$). As a result

of these three statistics, multivariate collinearity was not identified as a concern for variables in either path model.

Multivariate Normality

While a complete test for multivariate normality does not exist, aspects of multivariate normality were examined via measures of univariate normality (Kline, 2015). Univariate distributions were examined for all variables via frequency histograms and stem-and-leaf plots. Skew and kurtosis indices were also examined. Visual examination of frequency histograms revealed negative skewness and positive kurtosis for perceived coercion, positive skewness and negative kurtosis for negative pressures, negative skewness and kurtosis for voice exclusion, and minimal negative kurtosis for psychological distress. As illustrated in Table 4.5, no statistics for skewness or kurtosis reached extreme levels (i.e., > 3 and > 10 , respectively; Kline, 2015).

Linearity between continuous endogenous/dependent variables and homoscedasticity was examined via score scatterplots, normal probability plots of standardized residuals, residual histograms, and residual scatterplots. Score scatterplots showed positive linear bivariate relationships between all endogenous variables (perceived coercion, negative pressures, and voice exclusion). In visually evaluating standardized residuals for a bivariate regression with perceived coercion as the dependent variable and voice exclusion as the predictor, a few observed values did not fall along the diagonal line on the normal probability plot. The residual histogram showed an overall normal distribution but with positive kurtosis. Overall, residuals appeared evenly distributed across zero on the residual scatterplot, suggesting homoscedasticity between

perceived coercion and voice exclusion. In visually evaluating standardized residuals from a bivariate regression with perceived coercion as the dependent variable and negative pressures as the predictor, most observed values were close to the diagonal line on the normal probability plot, though several deviated slightly from it. The residual histogram showed an overall normal distribution but with slight negative skewness. Overall, the residual scatterplot showed that residuals were evenly distributed except a few residuals, suggesting overall homoscedasticity.

Finally, visual evaluation of standardized residuals from a bivariate regression with voice exclusion as the dependent variable and negative pressures as the predictor showed that values tended to fall along the diagonal line of the normal probability plot. A residual histogram showed overall normality with mild negative kurtosis. Except for a few values, residuals were evenly distributed across zero on the residual scatterplot, suggesting overall homoscedasticity between voice exclusion and negative pressures. Standard nonparametric bootstrapping with 1000 draws was used to address minor violations of normality for both path analyses in this dissertation (Preacher & Hayes, 2004). Mplus statistical software provided bootstrapped standard errors and 95% bias-corrected confidence intervals.

Demographic and Descriptive Statistics

Adolescent demographic statistics are displayed in Table 4.6. In addition to the previously noted demographics—age, sex, race, and initial psychological distress—data regarding adolescents' adoption, substance use, and criminal history were also included, albeit with a sizeable amount of missing data. Data for adoption history was only

available for 59 adolescents, substance use history for 50 adolescents, and criminal history for 40 adolescents.

As illustrated in Table 4.6, a significant portion (~ 45%) of the adolescents in this sample arrived via IYT. There were more male (versus) female adolescent participants. Adolescent participants ranged from 13 to 17-years-old, with the average being approximately 16-years-old. The median and mode for adolescent age were both 16-years-old. Based on the available data, most adolescents reported a history of substance use. Adolescent participants were from several racial backgrounds. However, the vast majority identified as white/Caucasian, with data only available for 73% of adolescents. Limited data also showed that approximately 20% of adolescents reported being adopted, and 23% reported a history of criminal charges. Of note, other adolescents reported previous involvement with the legal system but denied charges. Therefore, this statistic does not represent the full range of possible involvement with the legal system. Finally, adolescents' Y-OQ-SR total scores at admission were, on average, well above the cut-off score of 47, indicating clinical significance.

Descriptive statistics in Table 4.7 show adolescents on average endorsed high levels of perceived coercion, with the highest level of perceived coercion being the most frequently endorsed level. This is also consistent with the data in Table 4.5, which show significant negative skewness, with the vast majority of scores occurring on the high end of the scale. This table shows that, on average, adolescents endorsed a score of two (out of six) for negative pressures during admission but most frequently endorsed a score of zero. This is also consistent with Table 4.5, which showed positive skewness in the distribution for this variable. On average, adolescents in this sample endorsed a score of

two (out of three) for voice exclusion during admission, with the highest score being the most frequently reported. The majority of adolescents in this sample also endorsed angry emotion during admission.

As also illustrated in Table 4.7, differences between transported and non-transported adolescents were reported on all variables related to the RT-AES. Transported adolescents on average and more frequently endorsed higher perceived coercion, negative pressures, and voice exclusion during admission. Table 4.8 shows that mean differences between transported and non-transported were statistically significant. Table 4.7 also shows that transported adolescents more often endorsed angry emotion at admission. An odds ratio was calculated to further evaluate this difference, with the six ambivalent responses excluded. As shown in Table 4.8, adolescents entering outdoor RT were 4.8 times more likely to endorse angry emotion at admission than non-transported adolescents. In sum, transported adolescents endorsed a poorer subjective admission experience on all of the variables evaluated in this dissertation.

Finally, Table 4.9 displays a correlation matrix for all of the variables included in this dissertation. As anticipated, all exogenous/independent and endogenous/dependent variables were correlated at the level of statistical significance. Consistent with adult inpatient research, perceived coercion, negative pressures, voice, and angry emotion were all correlated at the level of statistical significance. IYT was also correlated with each of these variables at the level of statistical significance. Regarding covariates, age and Y-OQ-SR scores were positively correlated with angry emotion. Sex was positively correlated with perceived coercion and higher Y-OQ-SR scores.

Measurement Reliability

Reliability for adolescent participant score data on the RT-AES and its subscales were analyzed via IBM SPSS Statistics. DeVellis' (2017) recommendation for minimum reliability score, Cronbach's alpha $> .70$, was used as a reference point for the measures. Adolescent participant score data demonstrated strong reliability on the RT-AES total score, including all 20-items, with a Cronbach's alpha of .92. Adolescent participant score data also demonstrated excellent reliability on each of its four subscales. Adolescent score data on the RT-PCS showed strong reliability with a Cronbach's alpha of .87 and item-total correlations ranging from .62 to .80. Score data on the RT-NPS showed adequate reliability with a Cronbach's alpha of .77 with item-total correlations ranging from .42 to .60. Score data also showed adequate reliability on the RT-VS with a Cronbach's alpha .78 and item-total correlations ranging from .57 to .65. Reliability data were also collected for adolescent scores on the RT-ARS, although only the item for angry emotion was included in this dissertation. The data on the RT-ARS showed adequate reliability with a Cronbach's alpha of .73 and item-total correlations ranging from .35 to .63.

While previous reliability data for the AES and its subscales are not available for adolescents, the adolescent score data in this sample showed comparable reliability to those reported in adult samples and discussed in the Methodology section (Gardner et al., 1993; Hiday et al., 1997; Hoge et al., 1998). Consistent with previous research, Table 4.9 shows that the RT-PCS, RT-NPS, and RT-VS were strongly correlated in this adolescent sample. However, in contrast to adult literature, the RT-PCS did not show a bimodal

distribution. Data on this scale were negatively skewed, indicating high levels of perceived coercion among the vast majority of this sample.

Analysis of Research Questions/Hypotheses

SEM analyses for both research questions/hypotheses were completed using Mplus statistical software (v. 8; Muthén & Muthén, 1998-2017). Appendix B includes full input data for Mplus analyses. Full-information maximum likelihood estimation was used to address missing data for the SEM path analysis addressing Research Question/Hypothesis 1, which only includes continuous endogenous/dependent variables. WLSMV was utilized for the path analysis addressing Research Question/Hypothesis 2 due to the model containing a dichotomous endogenous/dependent variable. Standard nonparametric bootstrapping with 1000 draws was used in both SEM analyses to address minor violations in assumptions (Preacher & Hayes, 2004). As specified in the data analysis subsection of Chapter 3, Kline's (2015) stepwise SEM path analysis approach for observed variables was utilized for both path models, which includes model specification, model identification, model fit, examining statistics, and reporting findings.

Standardized parameter estimates and 95% bias-corrected bootstrap confidence intervals (*95%BCCIs*) are reported in figures referenced in the text for all measured direct, indirect, and total effects (MacKinnon et al., 2004; MacKinnon, 2008). Unstandardized estimates and corresponding *95%BCCIs* are discussed in the text of each section. While *p*-values are reported, *95%BCCIs*, which correct for bias in non-normality, were used for evaluating statistical significance. Standard errors are also reported for standardized and unstandardized results. Finally, the magnitude of the effect was

prioritized over tests of statistical significance for interpreting indirect (mediation) effects (Kline, 2015; Rucker et al., 2011). Effect sizes for all parameter estimates with continuous dependent variables were evaluated using Cohen's (1988) following criteria: small = 0.1, moderate = 0.3, and large = 0.5. Unstandardized parameter estimates related to the dichotomous endogenous/dependent variable angry emotion represent the rate of change in the z-score effect for angry emotion per one-unit change in the predictor variable. Effect sizes were converted to probabilities to improve interpretation. Probabilities were calculated for angry emotion at the value of each predictor variable provided in the output data according to the following formula: $P(y=1|x) = F(a + b'x)$, where y = value for the dichotomous dependent variable angry emotion, a = - probit threshold, b = probit regression slope, and x = value of predictor (Muthén & Muthén, 1998-2017). Incremental changes in probabilities were calculated, summed, and divided by the number of potential scores for each predictor to generate an average change in the probability for angry emotion on each predictor.

Research Question/Hypothesis 1

Model Specification, Identification, and Fit

Model specification was discussed in the data analysis subsection of Chapter 3. As illustrated in Figure 2.2, the initial hypothesized path model for Research Question 1 was recursive. This model specified a parallel mediation effect, with IYT showing an indirect relationship with adolescents' perceived coercion at admission through negative pressures and voice exclusion during admission. A direct effect between IYT and perceived coercion was also specified. While this hypothesized path model was

overidentified, it showed poor fit with the data on all four fit indices: $\chi^2(1) = 25$, $p < .05$, RMSEA = .49 (90%CI = .33-.66), CFI = .87, SRMR = .13.

Based on a review of modification indices provided in the model output and previous research (e.g., Hoge et al., 2001), this model was respecified to account for a correlation between negative pressures and voice exclusion. This parameter increased the minimum recommended sample size to 100 (vs. 90), consistent with the present sample size of 101 adolescent participants (Kline, 2015). The recommended sample size for individual parameter estimates based on the previously specified power and alpha levels remained the same.

With the additional parameter estimation, the respecified model was just-identified. As a result, fit indices are not discussed as just-identified models contain zero degrees of freedom and yield a perfect fit by default (Kline, 2015). However, the covariance matrix displayed in Table 4.10 was examined, with no concerns indicated. Local fit was evaluated by examining standardized residuals and residual correlations. All standardized residuals were statistically significant ($p < .05$) with no residual correlations equal or exceeding .10. As a result, the respecified model was reasoned to demonstrate a good fit with the data (Kline, 2015).

Model Results

Direct Effects

As illustrated in Figure 4.1, two of the three measured direct effects with perceived coercion were statistically significant. Negative pressures showed a positive statistically significant relationship with perceived coercion with a small effect size (b

$= .17, SE = .06, 95\%BCCI = .06-.28, p = .003$). For every one-unit increase in self-reported negative pressures, adolescents reported 17% of a unit (or 3% overall) increase in perceived coercion. Voice exclusion also showed a positive statistically significant relationship with perceived coercion but with a large effect ($b = .96, SE = .12, 95\%BCCI = .69-1.19, p < .001$). For every one unit increase in self-reported voice exclusion, adolescents reported approximately a 1 unit (or 20% overall) increase in perceived coercion. IYT showed a minimal negative relationship with perceived coercion that was not statistically significant ($b = -.11, SE = .21, 95\%BCCI = -.51-.32, p = .61$). Statistically significant direct effects were also found for negative pressures and voice exclusion on IYT. Specifically, IYT was positively associated with increased negative pressures with a moderate effect size ($b = 1.19, SE = .34, 95\%BCCI = .54-1.88, p < .001$) and increased voice exclusion with a large effect size ($b = 1.37, SE = .17, 95\%BCCI = 1.02-1.71, p < .001$). That is, transported adolescents reported 1.2 more units (or 20% more overall) of negative pressures in comparison to those who were not transported. Adolescents entering via IYT also reported 1.4 more units (or 47% more overall) of voice exclusion in comparison to their counterparts. Consistent with model respecification, negative pressures and voice exclusion were moderately correlated at the level of statistical significance ($b = .71, SE = .15, 95\%BCCI = .44-1.01, p < .001$).

Indirect Effects

Two indirect (mediation) effects were examined. As hypothesized, IYT showed a statistically significant relationship with perceived coercion through negative pressures with a small effect size ($b = .20, SE = .09, 95\%BCCI = .07-.43, p = .02$). That is,

transported (vs non-transported) adolescents showed 20% of a unit (or 4% overall) increase in perceived coercion through self-reported negative pressures. IYT also showed a statistically significant relationship with perceived coercion through voice exclusion but with a large effect size ($b = 1.32$, $SE = .25$, $95\%BCCI = .91-1.90$, $p < .001$). Specifically, transported (vs. non-transported) adolescents showed a 1.3 unit (or 26% overall) increase in perceived coercion through self-reported voice exclusion.

Total Effects

The total direct effect between IYT and perceived coercion equaled the direct effect between these two variables previously specified ($b = -.03$), which showed a minimally negative relationship that was not statistically significant. The total indirect effect through both indirect pathways noted in the previous subsection, was positive and statistically significant with a moderate effect size ($b = 1.52$, $SE = .27$, $95\%BCCI = 1.05-2.13$, $p < .001$). Negative pressures and voice exclusion accounted for approximately 1.5 units (or 30% overall) of increased perceived coercion endorsed among transported (vs. non-transported) adolescents. The total effect between IYT and perceived coercion was also positive and statistically significant with a moderate effect size ($b = 1.42$, $SE = .25$, $95\%BCCI = .91-1.92$, $p < .001$). Overall, transported adolescents endorsed approximately 1.4 units (or 28% overall) more of perceived coercion than non-transported adolescents. These results suggest that negative pressures and voice exclusion fully mediated the relationship between IYT and adolescents' perceived coercion at admission. The overall path model also accounted for a large portion of the variance in perceived coercion ($R^2 = .67$, $SE = .06$, $p < .001$).

Covariates

Age, sex, and psychological distress were entered into the model to account for their potential influence. These covariates failed to show a statistically significant relationship with perceived coercion, negative pressures, or voice exclusion. Specifically, age, sex, and psychological distress showed minimal effect sizes with perceived coercion ($b = .05, -.28, \& .002$, respectively) below the level of statistical significance. Age, sex, and psychological distress also showed small effect sizes with negative pressures (.20, -.31, & .01, respectively) below statistical significance. Finally, age, sex, and psychological distress showed a minimal or no effect with voice exclusion (.09, .19, & .00, respectively) below statistical significance. The model with covariates also accounted for a similar portion of the overall variance ($R^2 = .69$) for perceived coercion. As a result, these covariates were reasoned to not significantly influence the results of this model.

Summary

As hypothesized for Research Question 1, IYT showed a statistically significant indirect relationship with perceived coercion through two indirect pathways in a parallel mediation model: IYT through negative pressures and through voice exclusion. The magnitude of the effect was large through voice exclusion was large, but small through negative pressures. Therefore, voice exclusion showed a stronger effect on the relationship between IYT and perceived in comparison to negative pressures. Finally, the initial specified model showed a poor overall fit with the data. However, the respecified

model showed a good overall fit with the data and accounted for the majority of the variance in perceived coercion. Covariate variables were not significantly related to the results in this model.

Research Question/Hypothesis 2

Model Specification, Identification, and Fit

Model specification was discussed in the data analysis subsection of Chapter 3. As illustrated in Figure 2.3, the initial hypothesized path model for Research Question 2 specified a recursive serial mediation model. This model specified IYT to show a statistically significant indirect relationship with adolescents' endorsing angry emotion at admission through two double indirect (mediation) pathways: (1) through negative pressures and perceived coercion, and (2) through voice exclusion and perceived coercion. A single indirect (mediation) effect was specified through perceived coercion. A direct effect between perceived coercion and angry emotion was also specified. In light of Model 1's findings, Model 2 was respecified prior to analysis to omit the single indirect pathway through perceived coercion. An additional parameter was also added to account for the correlation between negative pressures and voice exclusion. All other parameter estimates remained unchanged. These changes in specification did not influence power or recommended sample size, as the number of estimated parameters remained the same.

This specified path model was overidentified, but showed poor fit with the data on three of the four fit indices: $X^2(4) = 15.16, p < .05$, RMSEA = .17 (90% CIs = .08-.26), and SRMR = .08. The model showed acceptable fit (.90) with the data on the fourth fit

index, CFI. An examination of local fit showed that the standardized residual variance was statistically significant for all endogenous/dependent variables. The standardized residual coefficient for perceived coercion was small (standardized residual coefficient = .13, $95\%BCCI = .01-.25$, $p = .04$) in comparison to other variables. The data also showed three standardized residual correlations (perceived coercion with angry emotion, negative pressures with angry emotion, and negative pressures with perceived coercion) exceeded .10, indicating a potential concern with local fit (Kline, 2015).

Output data provided no recommended modifications to improve fit. However, according to research on psychological reactance theory (PRT), angry emotion is directly linked to threats of verbal and physical force similar to negative pressures (e.g., Rains, 2013; Quick & Stephenson, 2007). As a result, this model was respecified to include a direct effect between negative pressures and angry emotion. A single indirect effect from IYT through negative pressures was also added. In total, one additional parameter was added to the respecified model, which increased the minimum recommended sample to 120 (from 110; Kline, 2015). While the sample size included 101 participants, it was considered an acceptable limitation (Kline, 2015). The recommended sample size based on a priori power and alpha levels for individual parameter estimates remained unchanged and was satisfied by the present sample size.

The final respecified model was overidentified and showed good fit with the data across all four fit indices: $X^2(3) = 1.88$, $p = .60$, $RMSEA = 0$ ($90\%CIs = 0-.14$), $CFI = 1$, and $SRMR = .02$. The correlation matrix with variances on the diagonal was also examined with no observable concerns (see Table 4.11). In examining local fit, all standardized residuals were statistically significant ($p < .05$) with no residual correlations

at or above .10. As a result, this model was accepted and reasoned to demonstrate a good fit with the data.

Model Results

Direct Effects

As illustrated in Figure 4.2, two statistically significant direct effects were observed with angry emotion. Perceived coercion showed a statistically significant positive relationship with increased probability of angry emotion ($b = .28$, $SE = .10$, $95\%BCCI = .08-.46$, $p = .007$). For a one-unit increase in self-reported perceived coercion, the z-score for the effect of angry emotion increased by .28. Table 4.12 shows a one-unit increase from the lowest score on the RT-PCS for perceived coercion had a probability of .10 for endorsing angry emotion, with a probability of .43 on the highest score. The average increase in overall probability was .07. Negative pressures showed a statistically significant positive relationship with increased probability for angry emotion ($b = .38$, $SE = .08$, $95\%BCCI = .23-.52$, $p < .001$). For every one-unit increase in self-reported negative pressures, the z-score for the effect of angry emotion increased by .38. As displayed in Table 4.12, the probability of endorsing angry emotion was .12 for the lowest RT-NPS for negative pressures and .76 for the highest. The average increase in overall probability was .12 per increase in score.

One of two positive direct effects with perceived coercion was statistically significant. Negative pressures showed a small positive relationship with perceived coercion but not at the level of statistical significance ($b = .13$, $SE = .07$, $95\%BCCI = -.03-.25$, $p = .06$). That is, for every one unit increase in self-reported negative pressures,

adolescents endorsed an increase in 13% of a unit (or 2.6% overall) in perceived coercion, though this was not statistically significant. Voice exclusion showed a statistically significant positive relationship with perceived coercion consistent with a large effect ($b = 1.00$, $SE = .11$, $95\%BCCI = .76-.1.20$, $p < .001$). Specifically, for every one unit increase in self-reported voice exclusion, adolescents endorsed a 1 unit (or 20% overall) increase in perceived coercion. IYT showed a statistically significant positive relationship with a moderate effect size on negative pressures ($b = 1.20$, $SE = .35$, $95\%BCCI = .51-.1.89$, $p \leq .001$) and a large effect size with voice exclusion ($b = 1.34$, $SE = .18$, $95\%BCCI = 1.00-.1.69$, $p < .001$). That is, transported adolescents endorsed 1.2 units (or 20% overall) more negative pressures and 1.34 units (or 45% overall) more voice exclusion versus non-transported adolescents. Finally, negative pressures and voice exclusion were strongly correlated at the level of statistical significance ($b = .75$, $SE = .15$, $95\%BCCI = .48-.1.05$, $p < .001$).

Indirect Effects

Five indirect (mediation) effects were examined, including two double indirect (mediation) effects and three single indirect (mediation) effects. As hypothesized, IYT showed a statistically significant indirect relationship with angry emotion through voice exclusion and perceived coercion ($b = .37$, $SE = .14$, $95\%BCCI = .15-.66$, $p = .009$). In particular, adolescents showed an increased probability of endorsing angry emotion by .37 on the z-score of its effect size when entering treatment via IYT through a double indirect/mediation effect through voice exclusion and perceived coercion. As illustrated in Table 4.12, transported adolescents showed an increased probability of .12 for

endorsing angry emotion compared to non-transported adolescents through voice exclusion and perceived coercion. IYT also showed a statistically significant relationship with angry emotion through negative pressures and perceived coercion ($b = .04$, $SE = .04$, $95\%BCCI = .003-.13$, $p = .24$). Adolescents increased their probability of endorsing angry emotion by .04 on the z-score of the effect when they entered treatment via IYT through a double indirect/mediation effect through negative pressures and perceived coercion. Table 4.12 shows that transported adolescents experienced an increased probability of .07 for endorsing angry emotion compared to their counterparts through negative pressures and perceived coercion. IYT also showed a statistically significant single indirect effect with angry emotion through negative pressures ($b = .45$, $SE = .20$, $95\%BCCI = .17-.93$, $p = .03$). Adolescents increased their probability of endorsing angry emotion by .45 on the z-score of the effect size when they entered treatment via transport in a single indirect/mediation effect through negative pressures. Table 4.12 shows that adolescents who were transported (vs. non-transported) displayed an increased probability of .14 for endorsing angry emotion through negative pressures.

Similar to Model 1, IYT showed a minimal but statistically significant indirect relationship with perceived coercion through negative pressures ($b = .15$, $SE = .09$, $95\%BCCI = .01-.39$, $p = .10$). Transported (vs. non-transported) adolescents showed a 15% of a unit (or 3% overall) increase in self-reported perceived coercion through negative pressures. IYT also showed a moderate sized and statistically significant indirect relationship with perceived coercion through voice exclusion ($b = 1.34$, $SE = .24$, $95\%BCCI = .91-1.86$, $p < .001$). Transported (vs. non-transported) adolescents exhibited an increase of 1.3 of a unit (or 26% overall) more perceived coercion.

Total Effects

This model evaluated two total effects, including angry emotion on IYT and perceived coercion on IYT. Total indirect effects were calculated by summing the total of all indirect effects. No direct effects were included in the model. Therefore, total effects are equivalent to total indirect effects in both estimates. The total (indirect) effect was statistically significant between IYT and angry emotion ($b = .86$, $SE = .22$, $95\%BCCI = .45-1.33$, $p < .001$). Based on the total indirect effects between IYT and angry emotion through negative pressures and perceived coercion, voice exclusion, and perceived coercion, and negative pressures, transported (vs. non-transported) adolescents' probability increased by .86 on the z-score effect for endorsing angry emotion. Table 4.12 shows the total indirect effect reflected an overall increase in the probability of .33 among transported (vs. transported) for endorsing angry emotion. The total probability for endorsing angry emotion was .82 among transported adolescents and .49 among non-transported adolescents. For the dichotomous endogenous variable of angry emotion, a pseudo- $R^2 = .79$ was reported.

IYT also showed a moderate and statistically significant total indirect effect with perceived coercion ($b = 1.49$, $SE = .24$, $95\%BCCI = 1.03-1.97$, $p < .001$). The overall effects of self-reported negative pressures and voice exclusion were associated with 1.5 units (or 30%) of more perceived coercion among transported versus non-transported adolescents. Similar to Model 1, the overall model accounted for a large portion of the variance in perceived coercion ($R^2 = .68$, $SE = .06$, $p < .001$).

Covariates

Finally, age, sex, and psychological distress were entered into the model as covariates to evaluate their influence in the model. Age showed a minimal but statistically significant relationship with angry emotion ($b = .27$, $SE = .15$, $95\%BCCI = .003-.54$). For every one-year increase in age, ranging from 13 to 17, adolescents' probability of endorsing angry emotion increased on average by .001. Increases in probabilities for each participant's age are listed in Table 4.13. Age did not show a statistically significant relationship with perceived coercion, negative pressures, or voice exclusion. Neither sex nor psychological distress showed a statistically significant relationship with any of the endogenous variables in the model. Figure 4.3 shows Model 2 with the influence of these three covariates. However, a visual illustration is only provided for age on angry emotion as all other covariate relationships were not statistically significant. Table 4.14 displays all unstandardized and standardized parameter estimates with the influence of these three covariates in the model. According to parameter estimates, probabilities for endorsing angry emotion were $< .001$ on the remaining direct and indirect effects. The double indirect/mediation effect of IYT through negative pressures and perceived coercion was not statistically significant in this model. Pseudo- $R^2 = .89$ for angry emotion in this model.

Parameter estimates remained consistent in magnitude and statistical significance for direct and indirect effects from IYT to perceived coercion except through negative pressures. This model accounted for a larger portion of the variance in perceived coercion compared to Model 1 without covariates ($R^2 = .73$, $SE = .07$, $p < .001$).

Summary

The respecified model for Research Question/Hypothesis 2 fit well with the data as evidenced by good fit statistics across all four global fit indices and no concerns indicated in local fit. As hypothesized for Research Question 2, IYT showed a statistically significant indirect relationship with angry emotion through two double indirect (mediation) pathways in a serial mediation model: IYT through negative pressures and perceived coercion and IYT through voice exclusion and perceived coercion. Therefore, the double indirect effect was stronger between IYT and angry emotion through voice exclusion and perceived coercion versus negative pressures and perceived coercion. A single indirect effect between IYT and angry emotion was also investigated through negative pressures. This indirect effect was statistically significant and larger than both double indirect/mediation effects. Consistent with Model 1, negative pressures and voice exclusion demonstrated statistically significant indirect (mediation) effects on the relationship between IYT and perceived coercion, with voice exclusion showing the stronger effect.

While age was the only covariate to demonstrate a statistically significant relationship with an endogenous variable (angry emotion) in this model, the inclusion of the three covariates showed a significant influence on the effects related to angry emotion in the model. The pseudo- R^2 for angry emotion and R^2 for perceived coercion both improved when covariates were added. The minimal but statistically significant indirect effect of IYT on angry emotion through negative pressures and perceived coercion became statistically insignificant. Finally, the minimal but statistically significant indirect effect of IYT on perceived coercion through negative pressures also became statistically

insignificant. However, the addition of the covariates reduced an already underpowered model, which can lead to nonsignificant and attenuated effect sizes in small samples (Kline, 2015). This reduction in power can be magnified for binary outcome variables. As a result, both models are referenced in the discussion chapter.

Table 4.1 Logistic regression analysis for missing data indicator for anger

<i>Variables</i>	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Exp(B)</i>
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Age	-0.752	0.626	1.441	1	0.230	0.471
RT-PCS	-0.030	0.560	0.003	1	0.958	0.971
RT-NPS	0.584	0.491	1.414	1	0.234	1.794
RT-VS	0.619	1.000	0.383	1	0.536	1.857
Y-OQ-SR	0.002	0.017	0.015	1	0.902	1.002

Table 4.2 Tests for differences in missing anger data

<i>Levene's Test for Equality of Variances</i>	<i>t-test for Equality of Means</i>
--	-------------------------------------

		<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>p</i> (2- sided)	<i>M</i> <i>Diff.</i>	<i>SE</i> <i>Diff.</i>	<i>95% CI of the Difference</i>	
									<i>Lower</i>	<i>Upper</i>
Age	Equal variances assumed	1.78	0.19	1.08	98.00	0.28	0.56	0.52	-0.47	1.58
	Equal variances not assumed			1.42	4.82	0.22	0.56	0.39	-0.46	1.58
RT- PCS	Equal variances assumed	0.18	0.67	-1.60	97.00	0.11	-1.13	0.70	-2.52	0.27
	Equal variances not assumed			-1.47	4.36	0.21	-1.13	0.77	-3.19	0.94
RT- NPS	Equal variances assumed	1.27	0.26	-1.29	97.00	0.20	-1.04	0.81	-2.65	0.56
	Equal variances not assumed			-1.38	4.51	0.23	-1.04	0.76	-3.06	0.97
RT- VS	Equal variances assumed	0.03	0.85	-1.28	98.00	0.20	-0.66	0.52	-1.69	0.37
	Equal variances not assumed			-1.20	4.38	0.29	-0.66	0.55	-2.14	0.82
Y- OQ- SR	Equal variances assumed	0.10	0.75	-0.62	91.00	0.54	-9.04	14.70	-38.25	20.16
	Equal variances not assumed			-0.62	4.48	0.56	-9.04	14.52	-47.70	29.61

Table 4.3 Chi-square tests for missing anger data and IYT

<i>Value</i>	<i>df</i>	<i>Asymptotic Significance</i>	<i>Exact Sig. (2-sided)</i>	<i>Exact Sig. (1-sided)</i>
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			(2-sided)		
Pearson Chi-Square	0.044	1	0.834		
Fisher's Exact Test				1.000	0.603
N of Valid Cases	101				

Table 4.4 Chi-square tests for missing data and sex

	<i>Value</i>	<i>df</i>	<i>Asymptotic Significance (2-sided)</i>	<i>Exact Sig. (2-sided)</i>	<i>Exact Sig. (1-sided)</i>
Pearson Chi-Square	3.449	1	0.063		
Fisher's Exact Test				0.154	0.075
N of Valid Cases	101				

Table 4.5 Skewness and kurtosis statistics

	<i>Skewness</i>	<i>Kurtosis</i>
RT-PCS	-1.32	0.48
Age	-0.39	-0.91
RT-NPS	0.23	-1.25
RT-VS	-0.48	-1.33
Y-OQ-SR	0.06	-0.22

Table 4.6 Adolescent characteristics at admission

<i>Characteristic</i>		<i>N (%)</i>
Gender (<i>n</i> = 105)	Female	41 (39.0)
	Male	64 (61.0)
Race (<i>n</i> = 77)	White	68 (88.3)
	African American	3 (3.9)
	Hispanic	3 (3.9)
	Asian American	1 (1.3)
	Native American	1 (1.3)
	Other	1 (1.3)
Transported (<i>n</i> = 105)	Yes	47 (44.8)
Adopted (<i>n</i> = 59)	Yes	11 (18.6)
Substance Use (<i>n</i> = 50)	Yes	36 (72.0)
Criminal History (<i>n</i> = 40)	Yes	9 (22.5)
Age (<i>n</i> = 104)	<i>M (SD)</i> = 15.7 (1.1)	
Y-OQ-SR (<i>n</i> = 95)	<i>M (SD)</i> = 67.9 (31.5)	

Table 4.7 RT-AES descriptive data for transported vs. non-transported adolescents

		<i>M</i>	<i>Median</i>	<i>Mode</i>	<i>SD</i>
RT-PCS (<i>n</i> = 99)	Not Transported (<i>n</i> = 55)	3.2	4.0	5.0	1.7
	Transported (<i>n</i> = 44)	4.6	5.0	5.0	0.9
	Total	3.9	4.5	5.0	1.5
RT-NPS (<i>n</i> = 99)	Not Transported (<i>n</i> = 55)	1.7	1.0	0.0	1.6
	Transported (<i>n</i> = 44)	2.8	3.0	3, 4, 5	1.8
	Total	2.2	2.0	0.0	1.8
RT-VS (<i>n</i> = 100)	Not Transported (<i>n</i> = 56)	1.3	1.0	0, 1	1.1
	Transported (<i>n</i> = 44)	2.7	3.0	3.0	0.7
	Total	1.9	2.0	3.0	1.1
		<i>N (%)</i>			
Angry (<i>n</i> = 90)	Not Transported	25 (27.8)			
	Transported	32 (35.5)			
	Total	57 (63.3)			

Note. RT-PCS = Perceived Coercion, RT-NPS = Negative Pressures, RT-VS = Voice Exclusion

Table 4.8 Statistical differences in transported vs. non-transported adolescents on RT-AES

<i>Independent samples test for transported versus non-transported adolescents</i>							
	<i>t</i>	<i>df</i>	<i>p</i>	<i>M Diff.</i>	<i>SE Diff.</i>	<i>95% CI of the Difference</i>	
						<i>Lower</i>	<i>Upper</i>
RT-PCS	-5.02	97.00	0.000	-1.40	0.28	-1.96	-0.85
RT-NPS	-3.38	97.00	0.001	-1.15	0.34	-1.82	-0.47
RT-VS	-7.41	98.00	0.000	-1.36	0.18	-1.73	-1.00

<i>Logistic regression for transport and anger</i>						
	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Exp(B)</i>
Transported	1.56	0.50	9.62	1.00	0.002	4.75
Constant	-0.04	0.28	0.02	1.00	0.89	0.96

<i>Odds ratio for anger</i>			
	<i>Value</i>	<i>95% CI</i>	
	<i>e</i>	<i>Lower</i>	<i>Upper</i>
Transported vs. Non- transported (<i>n</i> = 90)	4.75	1.78	12.73

Table 4.9 Correlations

	Age	Sex	IYT	RT-PCS	RT-NPS	RT-VS	Angry	Y-OQ-SR
Age ($n = 100$)	--							
Sex ($n = 101$)	-0.07	--						
IYT ($n = 101$)	0.06	0.17	--					
RT-PCS ($n = 99$)	0.11	.20*	.45**	--				
RT-NPS ($n = 99$)	0.11	0.02	.32**	.58**	--			
RT-VS ($n = 100$)	0.10	0.17	.60**	.80**	.54**	--		
Angry ($n = 90$)	.29**	0.18	.34**	.64**	.69**	.63**	--	
Y-OQ-SR ($n = 93$)	0.11	.24*	0.08	0.14	0.19	0.09	.37**	--

Note: Point-biserial correlation coefficients are provided when one variable is dichotomous. Phi coefficients are provided when both variables are dichotomous.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 4.10 Model 1 covariance

Variable	RT-PCS	RT-NPS	RT-VS	IYT
s				

RT-PCS	2.35			
RT-NPS	1.58	3.14		
RT-VS	1.39	1.11	1.28	
IYT	0.35	0.29	0.34	0.25

Table 4.11 Model 2 correlation matrix
(with variances on the diagonal)

Variables	RT-PCS	RT-NPS	RT-VS	IYT
Angry				
RT-PCS	0.63	1.87		
RT-NPS	0.78	0.51	2.77	
RT-VS	0.62	0.74	0.47	0.82

Table 4.12 Probabilities for Model 2

Anger on	Composite Score (x)	Probability <i>P(x)</i>
RT-PCS	1	0.10
	2	0.16
	3	0.24
	4	0.33
	5	0.43
	Avg. Change	0.09
RT-NPS	1	0.12
	2	0.21
	3	0.33
	4	0.48
	5	0.63
	6	0.76
	Avg. Change	0.13
RT-PCS, RT-VS, & IYT	Transported = 1	0.12
RT-PCS, RT-NPS, & IYT	Transported = 1	0.07

RT-NPS, & IYT	Transported = 1	0.14
Total (Indirect)	Transported = 1	0.33

Table 4.13 Probabilities for
anger in Model 2 with age

<i>Age</i>	<i>Probability P(x)</i>
13	0.001
14	0.002
15	0.005
16	0.01
17	0.02
Avg. Change	0.008

Table 4.14 Model 2 results with covariates

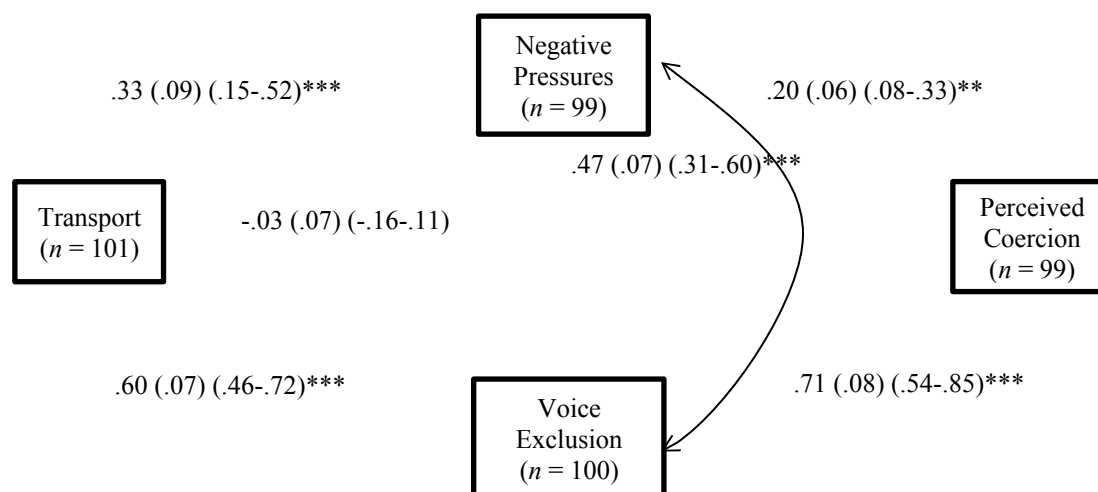
		Unstandardized					Standardized				
					95% BCCI					95% BCCI	
Direct effects		<i>b</i>	<i>SE</i>	<i>p</i>	Lower	Upper	<i>Std. Est.</i>	<i>SE</i>	<i>p</i>	Lower	Upper
Angry on	RT-PCS	0.34	0.21	0.11	0.08	0.57	0.40	0.18	0.02	0.15	0.63
	RT-NPS	0.38	0.20	0.06	0.16	0.57	0.50	0.19	0.01	0.25	0.75
	Y-OQ-SR	0.01	0.01	0.16	-0.001	0.02	0.18	0.10	0.08	-0.01	0.40
	Age	0.27	0.15	0.08	0.001	0.54	0.22	0.10	0.03	0.02	0.40
	Sex	0.27	0.32	0.40	-0.37	0.93	0.10	0.11	0.35	-0.12	0.33
RT-PCS on	RT-NPS	0.04	0.09	0.66	-0.15	0.21	0.05	0.10	0.65	-0.15	0.22
	RT-VS	1.10	0.14	0.000	0.80	1.36	0.80	0.09	0.000	0.59	0.97
	Y-OQ-SR	0.003	0.003	0.30	-0.003	0.01	0.06	0.06	0.30	-0.05	0.18
	Age	0.05	0.09	0.56	-0.11	0.25	0.04	0.06	0.56	-0.08	0.17
	Sex	0.19	0.21	0.36	-0.22	0.61	0.06	0.07	0.37	-0.07	0.19
RT-NPS on	IYT	1.27	0.36	0.000	0.57	1.92	0.37	0.10	0.00	0.15	0.53
	Y-OQ-SR	0.01	0.01	0.03	0.000	0.02	0.23	0.11	0.04	-0.01	0.42
	Age	0.20	0.17	0.23	-0.16	0.50	0.13	0.11	0.24	-0.10	0.32
	Sex	-0.36	0.34	0.29	-1.02	0.28	-0.10	0.10	0.29	-0.29	0.08
RT-VS	IYT	1.25	0.21	0.000	0.78	1.61	0.54	0.09	0.000	0.35	0.68

on	Y-OQ-SR	0.000	0.003	0.96	-0.01	0.01	0.01	0.09	0.96	-0.17	0.17
	Age	0.10	0.10	0.30	-0.10	0.30	0.10	0.09	0.29	-0.09	0.28
	Sex	0.21	0.22	0.34	-0.23	0.64	0.09	0.10	0.34	-0.10	0.29
RT-VS with	RT-NPS	0.83	0.16	0.000	0.57	1.19	0.58	0.09	0.000	0.41	0.74

Indirect effects											
Angry	IYT-NPS	0.49	0.32	0.13	0.19	1.08	0.18	0.10	0.06	0.07	0.37
	IYT-NPS-PCS	0.02	0.16	0.91	-0.06	0.14	0.01	0.04	0.87	-0.02	0.05
	IYT-VS-PCS	0.46	0.25	0.06	0.11	0.84	0.17	0.07	0.01	0.06	0.32
	IYT-VS	0.05	0.13	0.68	-0.18	0.28	0.02	0.04	0.68	-0.06	0.09
RT-PCS	IYT-NPS	0.05	0.13	0.68	-0.18	0.28	0.02	0.04	0.68	-0.06	0.09
	IYT-VS	1.37	0.30	0.000	0.81	1.95	0.43	0.09	0.000	0.27	0.60

Total effects											
Angry		0.97	0.28	0.001	0.48	1.42	0.36	0.08	0.000	0.21	0.53
RT-PCS		1.42	0.27	0.001	0.88	1.96	0.45	0.08	0.000	0.29	0.58

Standardized coefficients and standard errors with 95%BCCIs



Through negative pressures: .07 (.03) (.02-.14)*

Through voice exclusion: .43 (.07) (.31-.59)***

Total indirect effect: .49 (.07) (.36-.65)***

Total direct effect: -.03 (.07) (-.16-.11)

Total effect: .46 (.07) (.31-.59)***

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Figure 4.1. Model 1

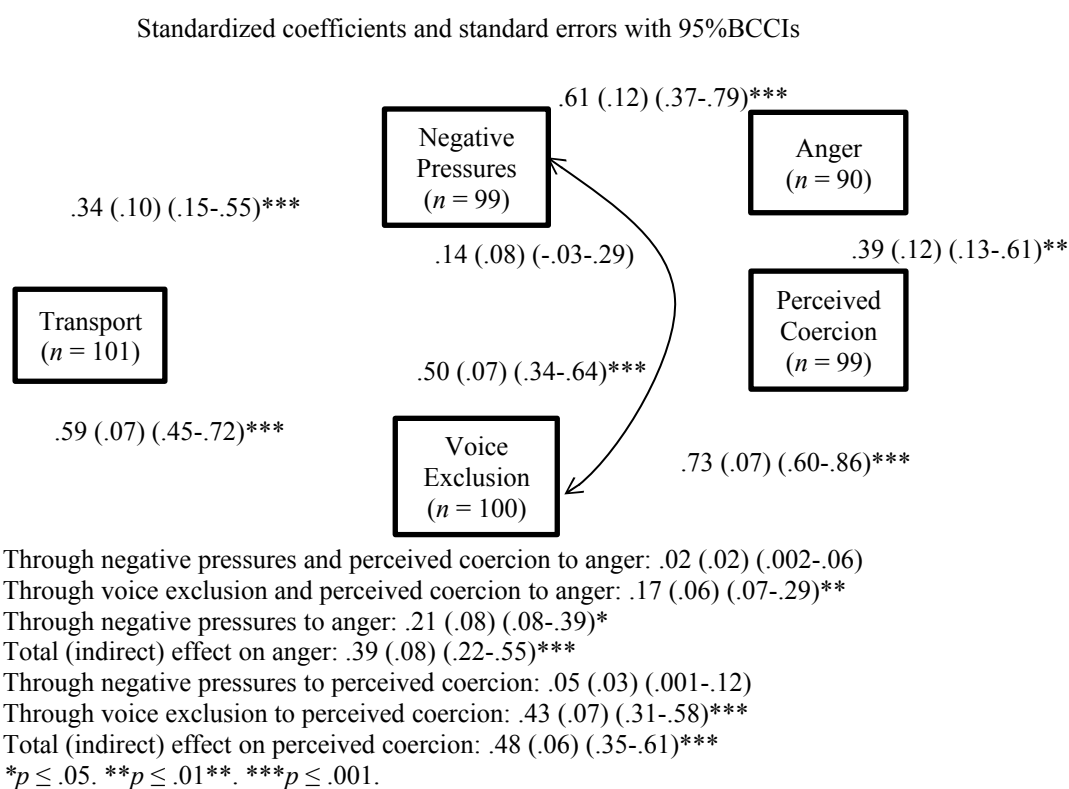
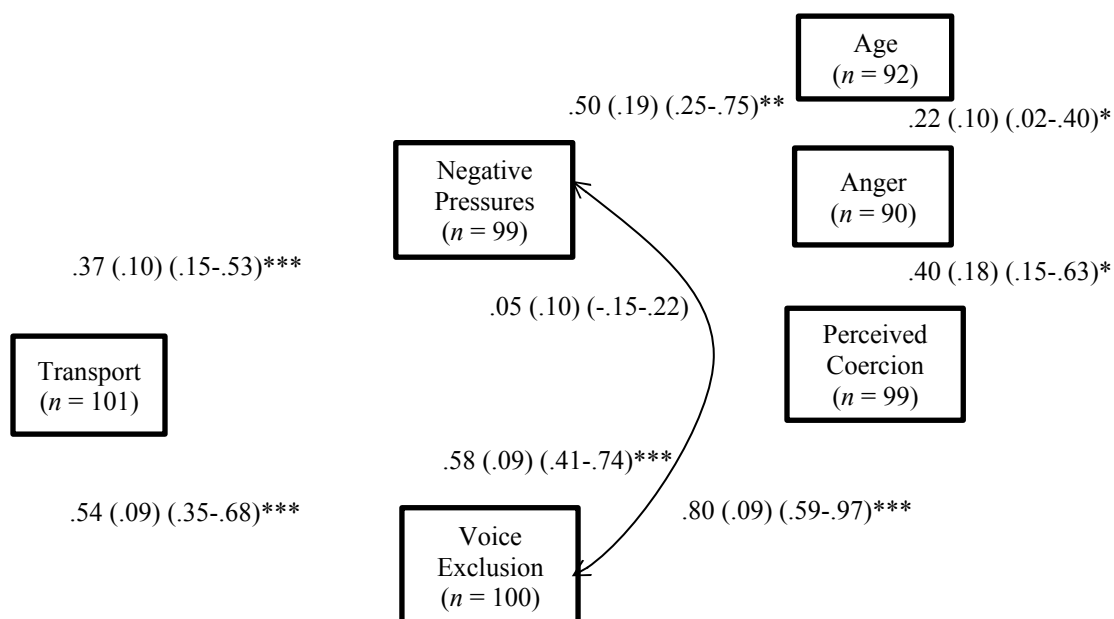


Figure 4.2. Model 2

Standardized coefficients and standard errors with 95%BCCIs



Through negative pressures and perceived coercion to anger: $.01 (.04) (-.02-.05)$

Through voice exclusion and perceived coercion to anger: $.17 (.07) (.06-.32)^{**}$

Through negative pressures to anger: $.18 (.10) (.07-.37)$

Total (indirect) effect on anger: $.36 (.08) (.21-.53)^{***}$

Through negative pressures to perceived coercion: $.02 (.04) (-.06-.09)$

Through voice exclusion to perceived coercion: $.43 (.09) (.27-.60)^{***}$

Total (indirect) effect on perceived coercion: $.45 (.08) (.29-.58)^{***}$

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Figure 4.3. Model 2 with covariates

CHAPTER 5

DISCUSSION

This research demonstrates that involuntary youth transport (IYT) is strongly associated with adolescents' experiencing increased negative pressures, voice exclusion, perceived coercion, and angry emotion at admission in behavioral health residential treatment (RT). This research suggests that transported adolescents' experience of negative pressures and voice exclusion can influence whether they endorse increased perceived coercion. Transported adolescents' experience of negative pressures, voice exclusion, and perceived coercion can also influence their probability of endorsing angry emotion at admission. Therefore, transported adolescents and perhaps other involuntarily admitted adolescents may benefit from IYT and admission procedures that avoid the use of negative pressures and facilitate the opportunity for adolescents to voice their opinions about the admission.

Specifically, this research examined IYT in relation to adolescents' perceived coercion, negative pressures, voice exclusion, and angry emotion at admission into an outdoor RT program. This dissertation combined existing research on admission coercion with self-determination theory (SDT) and psychological reactance theory (PRT) to provide a framework for investigating admission coercion, specifically IYT, in the context of adolescents entering RT (see Figure 2.1; Brehm & Brehm, 1981; Hoge et al., 2001; Monahan et al., 1999, 2001; Ryan & Deci, 2008, 2017). Drawing on previous

research (Hoge et al., 2001; Monahan et al., 1999, 2001), two research questions were examined:

1. Is the relationship between IYT and adolescents' perceived coercion at admission indirectly influenced (mediated) by their experience of voice exclusion and negative pressures?
2. Is the relationship between IYT and adolescents endorsing angry emotion at admission indirectly influenced (mediated) by their experience of voice exclusion, negative pressures, and perceived coercion?

Based on previous research (Hoge et al., 2001; Monahan et al., 1999, 2001), two hypothesized structural equation model (SEM) path analyses of observed variables were specified to answer each research question (see Figures 2.2 & 2.3). Specifically, it was hypothesized:

1. IYT will show a statistically significant indirect relationship with adolescents' perceived coercion at admission through their experience of voice exclusion and negative pressures in a parallel mediation model (see Figure 2.2).
2. IYT will show a statistically significant indirect relationship with adolescents endorsing angry emotion at admission through their experience of voice exclusion, negative pressures, and perceived coercion in a serial mediation model (see Figure 2.3).

Discussion of Findings

Descriptive Findings

Results suggest that IYT is a common admission method in adolescent RT, with approximately half (~45%) of adolescents in this study entering via IYT. These percentages are consistent but slightly less than those reported by Tucker et al. (2015, 2018), which included 50.9% and 64.5% respectively. On average, adolescents in this study endorsed high perceived coercion, with the highest score of perceived coercion being most common. Perceived coercion scores were negatively skewed, with 17.2% of adolescents endorsing minimal to no perceived coercion and 82.8% endorsing moderate to high perceived coercion (Newton-Howes & Stanley, 2012). This finding is in contrast to the adult research where perceived coercion scores tend to show a bimodal distribution (Hoge et al., 2001; McKenna et al., 2003). This difference highlights that adolescents entering RT may experience higher perceived coercion, on average, in comparison to adults. High perceived coercion among adolescents is consistent with Nytingnes et al.'s (2018) research that found high perceived coercion endorsed by voluntary and involuntary adolescents. Adolescents might also be expected to experience higher perceived coercion, as they are not afforded equal legal rights and protections as adults in the U.S. (Chen, 2021; U.S. Government Accountability Office, 2008). Adolescents are also at a stage of development where they may be more prone to perceiving pressures as restrictive and an imposition on their freedom (Ryan et al., 2015; Van Petegem et al., 2015).

On average, adolescents reported experiencing some form of negative pressure during admission, though the most common score was zero, indicating no negative pressures. Adolescents, on average, also endorsed some degree of voice exclusion during admission, with the highest score of voice exclusion being most common. The majority

(63%) of adolescents also endorsed angry emotion. Therefore, in addition to reporting high perceived coercion, adolescents tended to report experiencing some form of negative pressure, high voice exclusion, and angry emotion at admission. There is a dearth of adolescent research to compare with these findings. However, as previously noted, these findings may not be surprising given the lack of rights afforded to adolescents regarding involuntary treatment and developmental factors increasing their sensitivity to negative pressures and voice exclusion (Chen, 2021; Van Petegem et al., 2015).

Finally, consistent with previous research (Tucker et al., 2015, 2018), adolescents, on average, endorsed comparable clinically significant levels of total psychological distress on the Youth Outcome Questionnaire-Self Report 2.0 (Y-OQ-SR) at admission. Based on the generalizability of this sample, these data suggest adolescents entering RT, on average, experience high perceived coercion, some degree of negative pressures, high voice exclusion, angry emotion, and clinically significant psychological distress at admission.

Transported Adolescents

As expected, transported adolescents endorsed 28% higher perceived coercion compared to non-transported adolescents, with a moderate to high positive correlation between IYT and perceived coercion. Also, consistent with Tucker et al. (2015, 2018), transported adolescents' self-reported Y-OQ-SR scores for psychological distress were not statistically different from non-transported adolescents at admission.

These findings replicate Nytingnes et al.'s (2018) finding that involuntary admission was strongly associated with adolescents' increased perceived coercion when

entering inpatient psychiatric treatment. These findings are also consistent with the extant adult psychiatric literature where involuntary admission is associated with patient reports of increased perceived coercion (Newton-Howes & Stanley, 2012; O'Callaghan et al., 2021; O'Donoghue et al., 2014, 2015; Opsal et al., 2016; Wynn et al., 2018).

IYT and negative pressures were positively correlated, showing a small to moderate effect size. Transported adolescents endorsed 18% higher negative pressures than non-transported adolescents, who most often denied negative pressures during admission. This finding is consistent with several studies in the adult psychiatric literature where patients' reports of increased negative pressures were associated with involuntary admission (Hiday et al., 1997; Hoge et al., 1998; McKenna et al., 2003; O'Callaghan et al., 2021). IYT showed a strong and positive bivariate correlation with voice exclusion. Transported adolescents also, on average, endorsed 47% more voice exclusion in comparison to non-transported adolescents. This finding suggests that transported adolescents may often believe they do not have a voice or opinion in their admission, especially in comparison to non-transported adolescents. This finding is also consistent with the strong associations between involuntary admission and less perceived procedural justice and process fairness, including voice, in the adult psychiatric research (Hoge et al., 1998; McKenna et al., 2003; O'Callaghan et al., 2021).

IYT and adolescent reports of angry emotion at admission were positively correlated, with 82% of transported adolescents endorsing angry emotion compared to 49% of non-transported adolescents. In particular, transported adolescents were 4.75 times more likely to endorse angry emotion at admission than non-transported adolescents. While there is a gap in adolescent research addressing emotional experiences

related to coercive practices, this finding suggests that practices, such as IYT, may be associated with increased angry emotion at admission. This finding dovetails adult psychiatric research where coerced patients endorsed more negative subjective feelings, such as humiliation, regarding their admission experiences (Riley et al., 2014). There were no differences in IYT found based on adolescents' age or sex.

Correlations among Endogenous Variables

Results show strong statistically significant correlations among all endogenous/dependent variables measured on the residential treatment admission experience survey (RT-AES), ranging from .58 to .80. While there is no adolescent research to compare, these data are consistent with the adult research on the original MacArthur admission experience survey (AES) and its subscales for perceived coercion, negative pressures, voice exclusion, and negative emotion (Hiday et al., 1997; Hoge et al., 2001; Monahan et al., 1999; O'Donoghue et al., 2014). Lidz et al. (1995) and Hiday et al. (1997) reported correlations ranging from .56 to .72 on the AES for perceived coercion, negative pressures, and process exclusion (i.e., voice exclusion). O'Donoghue et al. (2014) reported statistically significant correlations averaging .43 between these three measures. There is a gap in the adolescent and adult literature regarding the association of angry emotion with perceived coercion, negative pressures, and voice exclusion. Notwithstanding, this study's finding that angry emotion is associated with each of these variables dovetails Newton-Howes and Mullen's (2011) systematic review. Newton-Howes and Mullen (2011) found negative feelings such as humiliation commonly experienced by those who reported high perceived coercion. This finding is also

consistent with a large body of literature on PRT, which links the emotion of anger directly to perceived threats on choice and freedom (Provan, 2013; Rosenberg & Siegel, 2018).

Research Question/Hypothesis 1

Summary of Findings

Model fit statistics for the first hypothesized model (see Figure 2.2) indicated a poor fit between the specified model and the data. The respecified model in Figure 4.1 added a parameter between negative pressures and voice exclusion to account for their correlation. This model was just identified with no concerns indicated in local fit.

As hypothesized, the results showed a statistically significant indirect relationship between IYT and perceived coercion via two indirect pathways in a parallel mediation model. IYT showed a statistically significant small effect on perceived coercion through negative pressures and a statistically significant large effect on perceived coercion through voice exclusion. Transported adolescents endorsed 4% more perceived coercion through negative pressures and 26% more through voice exclusion than non-transported adolescents. The combined indirect effect of negative pressures and voice exclusion was associated with a 30% increase in perceived coercion among transported (vs. non-transported) adolescents. Additionally, there was a minimal negative, but not statistically significant, direct effect between IYT and perceived coercion, which suggested a total mediation effect from negative pressures and voice exclusion on this relationship. The total effect between IYT and perceived coercion showed that transported adolescents endorsed 28% more perceived coercion than non-transported adolescents.

Adolescents' reports of negative pressures and voice exclusion showed statistically significant direct effects with perceived coercion. When accounting for the influence of voice exclusion and IYT, a one-unit increase in negative pressures was associated with a 3% overall increase in perceived coercion. When accounting for negative pressures and IYT, a one-unit increase in voice exclusion was associated with a 20% increase in perceived coercion. In sum, both negative pressures and voice exclusion showed statistically significant mediation and direct effects on adolescents' perceived coercion. However, voice exclusion showed a stronger indirect/mediation and direct effect on perceived coercion compared to negative pressures. Results show that this model accounted for the majority of the variance in perceived coercion.

Results also showed IYT was moderately associated with increased negative pressures, with transported (vs. non-transported) adolescents endorsing 20% more negative pressures during admission. IYT showed a strong association with voice exclusion, with transported (vs. non-transported) adolescents endorsing 47% higher voice exclusion during admission. As expected, negative pressures and voice exclusion were also strongly correlated.

The three covariates, age, sex, and psychological distress, were not significantly related with other variables in this. Model results also showed a similar variance in perceived coercion when the covariates were included in the model. As a result, the effects of age, sex, and psychological distress were considered insignificant on this model.

Findings Compared with Previous Research

There are two empirical IYT studies in the extant literature (Tucker et al., 2015; 2018). As measured by the Y-OQ-SR, transported adolescents showed no differences in psychosocial outcomes at discharge and after discharge compared to non-transported adolescents. In light of these findings, Tucker et al. (2018) emphasized the need for additional inquiry considering adolescents' perceptions of coercion to understand better the influence of IYT on adolescents. This dissertation addressed this need by investigating adolescents' perceived coercion, including negative pressures and voice exclusion, in relation to IYT at RT admission.

While Tucker et al.'s (2015, 2018) research did not identify an association between IYT and psychosocial outcomes at discharge and post-discharge, the present research found significant differences between IYT and adolescents' subjective experiences at admission. As previously noted, adolescents' self-reported experience of negative pressures and voice exclusion showed a full mediation effect on the relationship between IYT and perceived coercion. In the context of Tucker et al.'s (2015, 2018) research, the present findings suggest that IYT, alone, may not be associated with adverse subjective outcomes at admission, and perhaps psychosocial outcomes at discharge and post-discharge. However, the present findings suggest that IYT can be strongly associated with increased perceived coercion and perhaps attenuated psychosocial outcomes when adolescents believe they are threatened, intimidated, or forced into RT without the opportunity to voice their opinions. While more research is needed, the present findings illustrate that adolescents' perceptions of negative pressures, voice exclusion, and coercion are important to better understanding the immediate and long-term implications related to IYT, and perhaps other forms of involuntary admission, in

RT.

Perceived coercion, including negative pressures and voice exclusion, are omitted in the extant research on RT and the larger body of adolescent literature. This dissertation addressed this gap by extending several findings from the adult literature to adolescents entering RT. Similar to the adult literature, this dissertation found evidence that adolescents' perceived coercion at admission involves more than involuntary admission status (Hoge et al., 2001; Lidz et al., 1995; Monahan et al., 1999; Newton-Howes & Mullen, 2011). Adolescent reports of perceived coercion were strongly associated with their beliefs about whether they experienced negative pressures and voice in the admission process. Also, consistent with the adult literature, voice exclusion was the stronger predictor of perceived coercion than negative pressures (Hiday et al., 1997; Hoge et al., 2001; Lidz et al., 1995). With the inclusion of negative pressures and voice exclusion, this model predicted a majority of the variance in perceived coercion comparable to Lidz et al. (1995). Lidz et al.'s (1995) regression model with involuntary legal status, negative pressures, and procedural justice included as predictors accounted for approximately 65% of the variance in perceived coercion compared to 67% in this study. Based on the generalizability of these findings, this model provides potential points of intervention that may reduce transported adolescents' perceived coercion at admission. Reducing or eliminating the use of negative pressures and facilitating the opportunity for adolescents to voice their opinions may be essential to reducing their perceived coercion at RT admission, especially when involuntary admission is deemed necessary. This is also reasoned to improve adolescents' overall admission experience irrespective of involuntary or voluntary admission status.

Findings Compared with Theory

Neither SDT nor PRT are included in previous research regarding adolescents entering RT. As illustrated in Figure 2.1, SDT and PRT posit that coercion is associated with a negative subjective experience for the coerced person. Results supported this reasoning by showing IYT to be strongly associated with adolescent reports of negative pressures, voice exclusion, and perceived coercion. That is, adolescents endorsed a more negative subjective experience at RT admission when they were involuntarily transported.

While this research did not examine motivation at admission, SDT posits that adolescents' increased perceptions of coercion, negative pressures, and voice exclusion at admission are associated with decreased perceptions of autonomy (Ryan & Deci, 2017). Decreased perceptions of autonomy are, in turn, associated with thwarted autonomous motivation, leading to controlled motivation or amotivation, both of which can lead to suboptimal outcomes in change and psychosocial functioning (Deci & Ryan, 2000, 2008; Ryan & Deci, 2017).

Psychological reactance is also not examined in this model. However, PRT posits that adolescents' increased perceptions of coercion and negative pressures, especially threat and force, can lead to psychological reactance and consequent oppositional defiance and impaired functioning (Brehm & Brehm, 1981; Lewing & Caraway, 2019; Van Petegem et al., 2015). In sum, the results in this research were consistent with the extant literature and can be interpreted within the context of SDT and PRT.

Research Question/Hypothesis 2

Summary of Findings

Model 2

The respecified model in Figure 4.2 fit well with the data. Compared to the initial hypothesized model in Figure 2.2, the respecified model added a parameter for the correlation between negative pressures and voice exclusion and removed the direct effect parameter between IYT and perceived coercion based on Model 1's findings. Consistent with PRT, a parameter for a direct effect between negative pressures and angry emotion was added to improve fit. The final model was overidentified with a slight decrease in power from the initial model. Notwithstanding, this model showed adequate power for individual parameter estimates and was sufficient for analysis per Kline (2015).

As hypothesized, IYT showed a statistically significant indirect relationship with angry emotion through two double indirect (mediation) pathways in a serial mediation model. Specifically, IYT showed a statistically significant effect on angry emotion through negative pressures and perceived coercion and through voice exclusion and perceived coercion. Transported adolescents showed an increased probability of endorsing angry emotion by 7% through negative pressures and perceived coercion compared to non-transported adolescents. Transported adolescents showed an increased probability by 12% through voice exclusion and perceived coercion compared to non-transported adolescents. In the single indirect (mediation) effect through negative pressures, transported adolescents showed an increased probability of endorsing angry emotion by 14% compared to their counterparts. According to these findings, the double indirect (mediation) pathway through voice exclusion and perceived coercion was a more

substantial influence on angry emotion than the double indirect (mediation) pathway through negative pressures and perceived coercion. However, the single indirect (mediation) pathway through negative pressures showed the most substantial influence on angry emotion, suggesting negative pressures as the stronger influence on adolescents' angry emotion at admission. The total indirect effect for these three pathways showed transported adolescents experienced an overall increase in probability by 33% for endorsing angry emotion compared to non-transported adolescents. The total probability of endorsing angry emotion at admission was 82% for transported adolescents and 49% for non-transported adolescents.

Two statistically significant direct effects were found between adolescents' reports of perceived coercion and negative pressures on angry emotion at admission. Each score increase in adolescents' reports of perceived coercion was associated with a 7% average increase in probability for angry emotion. There was a 10% increase in probability in a one-score increase from the lowest score but a 43% increase improbability on the highest score. Adolescents' reports of negative pressures were associated with a 12% average increase in probability for endorsing angry emotion, with a 12% increase in probability for a one-score increase from the lowest score and a 76% increase in probability for the highest score. Taken together, adolescents' reports of negative pressures showed a stronger direct influence on their reports of angry emotion at admission than perceived coercion. Recognizing these effects of negative pressures on angry emotion suggests that perceived coercion with negative pressures is associated with a more adverse admission experience compared to perceived coercion without negative pressures. However, additional research is needed to evaluate this.

Model 2 also examined the statistically significant indirect and direct effects from Model 1. Consistent with Model 1, results showed statistically significant indirect effects between IYT and perceived coercion through negative pressures and voice exclusion. IYT was associated with a small 3% increase in adolescents' perceived coercion at admission through negative pressures and a moderate 26% increase through voice exclusion. The combined indirect effects showed that transported adolescents endorsed 30% higher perceived coercion at admission through negative pressures and voice exclusion compared to non-transported adolescents.

Consistent with Model 1, voice exclusion showed a large statistically significant direct relationship with perceived coercion at admission. For every one-score increase in self-reported voice exclusion, adolescents endorsed 20% more perceived coercion. In contrast to Model 1, negative pressures' small direct relationship with perceived coercion was not statistically significant. Additionally, IYT showed a statistically significant moderate association with negative pressures and a large association with voice exclusion. Transported adolescents reported 20% more negative pressures and 45% more voice exclusion than non-transported adolescents. Overall, Model 2 accounted for the majority of the variance in perceived coercion with a 2% increase from Model 1. In sum, these findings reiterated that adolescents' experiences of negative pressures and voice exclusion during admission appear to mediate the relationship between IYT and perceived coercion. However, adolescents' reports of negative pressures, voice exclusion, and perceived coercion also appear to mediate the relationship between IYT and angry emotion.

Model 2 with Covariates

Results show age as the only covariate with a statistically significant but minimal relationship on another variable in Model 2. Adolescent age was related to angry emotion at admission but was not significantly related to other model variables. Overall, adolescent age showed a 1% increase in probability of endorsing angry emotion for each one-year increase. Thirteen-year-old participants, the youngest adolescents, showed a probability of 0.1%, and 17-year-olds, the oldest adolescents, showed a probability of 2% for endorsing angry emotion at admission. Neither adolescents' sex nor psychological distress on the Y-OQ-SR showed a statistically significant relationship with variables in this model.

While these results suggest that covariates showed only a minimal effect on this model, the probabilities for all indirect and direct effects on angry emotion decreased to less than 0.1%. The double indirect (mediation) effect of IYT through negative pressures and perceived coercion was not statistically significant in the covariate model. Therefore, the increase in probability for angry emotion remained statistically significant but negligible in terms of effect size for all prior direct and indirect effects except for the path through negative pressures and perceived coercion. This path was no longer statistically significant.

While these findings may suggest the previous effects are insignificant when the covariates are considered, it is important to note that statistical power was significantly reduced for the binary outcome of angry emotion when additional parameters for covariates were entered into the model (2015). Problematically, underpowered analyses can attenuate the magnitude and statistical significance of results, especially in small

samples (Kline, 2015). This issue is even more pronounced for binary (vs. continuous) outcome variables.

In sum, Model 2 with covariates yielded statistically significant direct and indirect effects similar to Model 2 without covariates for angry emotion except for the double indirect effect through negative pressures and perceived coercion. However, the covariate model appeared to lack sufficient power to yield accurate effect sizes. This finding underscores the need for future research with a larger sample size and higher power to evaluate the influence of these covariates on angry emotion in this model. Model 2's results with covariates (vs. without covariates) remained consistent for all direct and indirect effects from IYT to perceived coercion except for the indirect (mediation) effect through negative pressures. This effect was not statistically significant. The covariate model accounted for a larger portion of the variance in perceived coercion compared to the model with no covariates. The fact that the covariate model yielded similar effect sizes to the no-covariate model for perceived coercion was not surprising as power is generally higher when evaluating continuous (vs. binary) outcomes.

Findings Compared with Previous Research

Results for Model 2 add to previous IYT research (Tucker et al., 2015, 2018) by extending Model 1's findings to include the influence of negative pressures, voice exclusion, and perceived on the relationship between IYT and angry emotion at admission. In particular, Model 2 results provide insight into how two interpersonal processes, negative pressures and voice exclusion, may contribute to transported adolescents' perceived coercion and angry emotion at admission (see Figure 5.1). In the

adult psychiatric literature, O'Callaghan et al. (2021) found involuntary admission status was related to increased adverse emotional reactions at admission, including anger. The present research extends this finding to transported adolescents entering RT. However, this research suggests that the relationship between involuntary admission, specifically IYT, and adverse emotion, specifically angry emotion, may be mediated by adolescents' experiences of negative pressures, voice exclusion, and perceived coercion during admission (see Figure 5.1). Consistent with Model 1's findings and the extant adult literature, voice exclusion was the stronger predictor of perceived coercion compared to negative pressures (Hiday et al., 1997; Hoge et al., 2001; Lidz et al., 1995). However, in Model 2, negative pressures was the stronger predictor of angry emotion. In sum, voice exclusion was more influential in perceived coercion, while negative pressures were more significant for angry emotion.

While Tucker et al. (2015, 2018) found no significant differences in psychosocial outcomes between transported and non-transported adolescents, these results underscore that a more comprehensive investigation of the immediate and long-term outcomes related to IYT may be needed. This research should include adolescents' experiences of negative pressures, voice exclusion, perceived coercion, and angry emotion at admission in addition to IYT. In line with SDT and PRT, transported adolescents who experience perceived coercion and angry emotion related to negative pressures and voice exclusion may show a poorer trajectory in treatment than those who do not. However, additional research is needed to evaluate this conclusion.

Findings Compared with Theory

As displayed in Figure 5.1, Model 2's findings add support for including angry emotion in the coercive admission model displayed in Figure 2.1. Model 2 suggests there is a strong relationship between IYT and adolescents' perceived coercion at admission through negative pressures and voice exclusion. However, Model 2 also suggests a relationship between IYT and adolescents' increased probability for endorsing angry emotion at admission through at least two double pathways and one single indirect pathway. Negative pressures' influence on angry emotion is consistent with SDT's emphasis that external controlling pressures, including interpersonal threat and force, are associated with impaired immediate functioning (Deci & Ryan, 2000, 2008; Ryan & Deci, 2017). While adolescents' defiance was not measured, SDT suggests that negative pressures can motivate adolescents to become oppositional defiant (Ryan & Deci, 2017; Van Petegem et al., 2015). This finding is also consistent with PRT. PRT directly links adolescents' perception of threat or loss of freedom to psychological reactance, including negative emotion, especially anger (Provan, 2013; Rosenberg & Siegel, 2018; Van Petegem et al., 2015). When adolescents endorse increased negative pressures, voice exclusion, perceived coercion, and angry emotion at admission, SDT and PRT predict thwarted motivation for treatment and increased motivation to resist against it (Rosenberg & Siegel, 2018; Ryan & Deci, 2017; Van Petegem et al., 2015). For example, such adolescents may refuse to engage in treatment and exhibit oppositional defiance towards IYT and program staff. According to SDT, such adolescents may also exhibit controlled motivation to comply with treatment (Ryan & Deci, 2017). Problematically, controlled motivation attenuates when external controlling pressures are removed,

resulting in temporary change and increased relapse to previous maladaptive behaviors (Ryan & Deci, 2017). In sum, Model 2's results provide additional support for an integrated coercive admission model in RT, consistent with SDT and PRT and the extant literature discussed in previous sections.

Limitations

Research Design

While this dissertation's research design was efficient and effective for its objectives, there are noteworthy limitations. First, cross-sectional designs involve one-time point of measurement with no established temporal precedence or controls. As a result, cross-sectional designs are incapable of yielding cause-effect conclusions. This applies to the interpretation of the two path analysis models in this dissertation. While path analysis can detect direct and indirect (mediation) relationships with cross-sectional data, a true causal or mediation relationship requires temporal precedence (Barbeau et al., 2019; Sertia, 2016). Notwithstanding, cross-sectional designs are useful for establishing support for more comprehensive research in new research domains (Setia, 2016). In particular to this research, they are also useful for evaluating a person's subjective experience at a specific time point (Setia, 2016). Further, the intent of this research, along with path analysis in general, was not to determine cause-effect relationships but to demonstrate the tenability of the hypothesized path models with the present sample (Barbeau et al., 2019; Pedhazur, 1997).

The use of self-report survey data is a concern for potential response bias (Rosenman et al., 2011). Notwithstanding, self-report measures are an effective and

practical approach for measuring unobservable subjective constructs, such as a person's perceptions and emotions. In particular to the variables in this research, Lidz et al. (1997) found that patient accounts of perceived coercion were a more accurate indicator of coercion experienced than the accounts of family members and clinicians. While multiple measurement sources would be preferable, self-reported data were considered the most valid.

Having an adequate sample size is important to ensure a study has adequate statistical power to accurately detect effects. Small sample sizes can lead to statistically insignificant findings and attenuated effect sizes that would otherwise be significant and larger in magnitude (Kline, 2015). While the sample size for Research Question/Hypothesis 1 is below the ideal 20:1 (participant-to-parameter) ratio, it is above the minimum of 10:1 (Kline, 2015). The sample size for Research Question/Hypothesis 2 is below the ideal and minimum ratios but was considered appropriate for analysis per Kline (2015). The sample size provided adequate power for individual parameter estimates in for both research questions and hypotheses. Models 1 and 2 were both underpowered when the three covariates, age, sex, and psychological distress, were added. While this did not influence results for perceived coercion in Model 1 and 2, Model 2's effects for angry emotion became difficult to interpret. This finding underscores the need for additional research to evaluate the covariate effects in Model 2 with larger sample sizes and adequate power. This can also highlight a limitations with weighted least squares means and variance adjusted (WLSMV) estimation versus other methods such as maximum likelihood robust (MLR) and Bayesian estimation which offer alternative approaches to improving statistical power for small samples with binary

outcome variables (Kline, 2015; Muthen & Muthen (1998-2017).

This research utilized secondary data analysis with a significant length of time between the original data collection and present analyses. As previously noted, secondary data analysis is considered an effective and efficient method for investigating new research domains with existing data (Vartanian, 2011). These were also the most recent data available before the ongoing COVID-19 pandemic. The use of IYT with similar adolescent populations remains a persistent issue in RT, with no documented changes in practices or policies since these data were initially collected (Gass et al., 2021; Tucker et al., 2018). Further, IYT has experienced a recent surge in public and legislative scrutiny at state and federal levels of government, creating an urgency for relevant research to inform immediate practice and policy concerns (Gass et al., 2021; Harper et al., 2021; Miller & Fuchs, 2021; Miller et al., 2022).

Generalizability

Generalizability is important when considering what populations and for whom research findings apply. This is an important limitation, especially when research uses a convenience sample. Although this research utilized a convenience sample, adolescent participants were from the specific population of interest: adolescents entering RT. Demographic data also showed adolescents in this study were similar to adolescents in other IYT and RT research in regards to their age, race, adoption history, substance use history, and psychological distress reported at admission (Bettmann et al., 2013; Russell et al., 2008; Tucker et al., 2015, 2018).

Notably, diagnostic data for adolescents' mental health and trauma histories were

not available and were, therefore, omitted from this study. While it is unclear if these histories would influence the interpretation of the present findings, coercive practices, especially negative pressures, may elicit more adverse emotional and behavioral responses and perhaps risk re-traumatization in adolescents with a significant history of trauma. In this vein, Gass et al. (2021) emphasize the importance of evaluating adolescents' mental health and trauma histories before considering IYT. Therefore, caution should be used in interpreting the present findings for adolescents with mental health or trauma histories known increase their susceptibility to a traumatic response.

Researcher Bias

My prior experience as a stakeholder in a youth transport service played an influential role in my decision to research IYT. This prior experience posed a risk of bias in the research questions and hypotheses I proposed and my interpretation of the results. To manage this bias, I relied on well-established psychological theory and previous research to guide my research questions, hypotheses, and interpretations. I also discussed the findings of my dissertation in the context of well-established theory and the extant research on admission coercion.

I utilized standardized questionnaires with strong psychometric properties in the admission coercion literature. I also did not play a direct role in collecting survey data from adolescent participants. Further, all five members of my dissertation committee were instrumental in using their scholarly and clinical expertise to review all aspects of my dissertation, including the reported findings and interpretations. In sum, I made significant efforts to reduce my bias in this research. Moreover, this research was

consistent with psychological theory and the extant research, adding validity to the interpretation of these results.

Implications

This research informs practice by demonstrating that IYT is strongly associated with adolescents' experiencing increased negative pressures, voice exclusion, perceived coercion, and angry emotion at RT admission. This research suggests that transported adolescents' experience of negative pressures and voice exclusion can influence whether they endorse increased perceived coercion. Transported adolescents' experience of negative pressures, voice exclusion, and perceived coercion may also influence their probability of endorsing angry emotion at admission compared to non-transported adolescents. Consistent with the adult behavioral health literature, this research suggests that whether or not transported adolescents experience increased perceived coercion and angry emotion at admission relates to their experience of negative pressures and believing they were able to voice their opinions about the admission (Monahan et al., 1999, 2001; Newton-Howes & Stanley, 2012). Therefore, transported adolescents and perhaps other involuntarily admitted adolescents may benefit from IYT and admission procedures that reduce or avoid negative pressures and increase the opportunity to voice their opinions about the admission.

One way to reduce negative pressures would be to rely more heavily on positive pressures, which employ reason, incentive, and encouragement to induce (vs. compel) cooperation (Hoge et al., 2001; O'Donoghue et al., 2014; Winick, 2008). For example, IYT staff could avoid using directives or statements referring to the threat or use of force

if the adolescent does not cooperate (e.g., Miller & Fuchs, 2021). Instead, staff could provide a clear rationale for admission and express genuine compassion when adolescents show hesitancy or become oppositional towards involuntary admission. Displaying genuine compassion could involve providing the opportunity for an adolescent to voice their concerns and validate them. It may also involve a concerted effort between IYT staff, program staff, referring practitioners, and family members in planning the transport intervention to ensure the procedures match with the adolescent's state of willingness and mental health history. This could involve utilizing Gass et al.'s (2021) state of willingness continuum that matches transport procedures to the adolescent's level of willingness and risk.

Consistent with SDT, increasing adolescents' opportunity to voice their opinions about admission can be facilitated throughout all aspects of the IYT and involuntary admission process irrespective of their willingness or resistance (Ryan & Deci, 2017). For example, after IYT staff provide an adolescent with a clear rationale for treatment and transport, staff could elicit verbal input from the adolescent in the form of a discussion. IYT staff could continue this dialogue as the transport progresses as adolescents' thoughts and emotions may fluctuate throughout the process. Motivational interviewing is an evidenced-based practice that incorporates values related to SDT for enhancing a person's quality of motivation, especially for those who may be internally resistant towards change (Miller & Rollnick, 2013). Perhaps principles related to motivational interviewing could be applied during admission and throughout treatment to increase adolescents' autonomous motivation for treatment and alleviate potential negative effects in motivation related to IYT or other involuntary admission processes.

IYT services purport to use positive pressures and voice facilitating techniques (Association of Mediation and Transport Services, 2022). However, adolescent reports in this research suggest otherwise—that is, IYT was highly associated with increased negative pressures and voice exclusion at admission, along with increased perceived coercion and angry emotion. In light of this, IYT services may need to reflect on the training of staff who carry out the transports and adolescents' perceptions of transport procedures. It is also possible that the coercive nature of IYT can induce adolescents' perception of negative pressures and the belief that they lack a voice in the process. Therefore, IYT services may need to be deliberate in their use of positive pressures and voice facilitating techniques. A seemingly cooperative adolescent who goes along with the transport may be experiencing significant internal distress. Consistent with SDT and PRT, along with neuroscience research, this ostensive cooperation or submissiveness may represent a learned helpless response to a situation where they perceive to have little to no control or influence on the outcome (Lewing & Caraway, 2019; Maier & Seligman, 2016; Provan, 2013; Ryan & Deci, 2017; Van Petegem et al., 2015). In this vein, IYT could induce a traumatic response in adolescents with histories of trauma, depression, and anxiety (Maier & Seligman, 2016).

An approach that is deliberate in its use of positive pressures and voice facilitating techniques, but also trauma-informed, may require IYT services to adapt the structure of their transport process on a case-by-case basis. Gass et al. (2021) emphasize that IYT and other involuntary admission approaches need to be flexible and tailored to the particular needs of the youth, including their history of trauma. For example, instead of waking up an adolescent abruptly in their room in the early morning (e.g., Miller & Fuchs, 2021),

less invasive approaches might be appropriate. While this may involve clinical and risk assessment prior to IYT, a less invasive approach might include family members waking the adolescent without IYT staff present and the initial meeting taking place in a common living area of the home. This could also involve collaborating with the adolescent's local social worker or therapist and perhaps scheduling the initial meeting during daytime hours in conjunction with a therapy session. Even in situations where it may seem required for IYT staff to greet the adolescent in their room initially, additional efforts can to reduce the coercive nature of the process. For instance, a discussion with the adolescent and their family could occur in a separate room immediately after the adolescent is up. IYT staff could allow additional time for the adolescent to process their emotions before leaving their home and allow access to their cell phone or other personal belongings of significance to the adolescent throughout the process.

Research shows that individuals tend to maintain their negative perceptions and emotions at admission throughout their time in treatment and after discharge even when they come to accept treatment (Newton-Howes & Mullen, 2011). Problematically, an adverse experience at admission may not only increase an adolescent's initial opposition but can thwart their quality of motivation to engage in RT (Lewing & Caraway, 2019; Provan, 2013; Ryan & Deci, 2017). They may also be more reluctant to seek treatment in the future autonomously, which can be problematic if they relapse or revert to previous maladaptive behaviors (Gardner et al., 1999; Kallert et al., 2011; Kaltiala-Heino et al., 1997; Lewing & Caraway, 2019; Link et al., 2008; Provan, 2013; Riley et al., 2014; Ryan & Deci, 2017). In sum, there are important implications associated with an adverse admission experience, including the subjective experiences discussed in this research that

warrant consideration in current practice and policy.

While IYT was a central focus of this research, it is noteworthy that transported and non-transported adolescents commonly reported high perceived coercion, high voice exclusion, and angry emotion. Some non-transported adolescents also reported negative pressures. While transported adolescents endorsed greater adverse subjective experiences in comparison to non-transported adolescents, these findings underscore that non-transported adolescents can also experience negative pressures, voice exclusion, perceived coercion, and angry emotion at admission. That is, non-transport admission procedures can, in some instances, elicit similar negative subjective experiences in adolescents at admission. Therefore, voluntary and involuntary admission processes may benefit from taking deliberate steps to avoid negative pressures and facilitate adolescents' voice during RT admission to improve adolescent clients' admission experiences. Consistent with the National Association of Social Workers (NASW, 2008) code of ethics and other professional organizations (American Psychiatric Association, 2011; American Psychological Association, 2010), this research emphasizes supporting adolescents' self-determination and well-being during RT admission irrespective of involuntary admission status.

Future Directions for Research

The findings in this study displayed in Figures 4.1-4.3 provide a basis for future research focused on improving adolescents' experiences and immediate functioning at RT admission particularly when an involuntary admission, such as IYT, occurs. As this is an emerging research domain, larger cohort studies are needed to evaluate the immediate,

short-term, and long-term effects of coercive admission practices. These studies should incorporate adolescents' subjective experiences of negative pressures, voice exclusion, perceived coercion, and adverse emotions in addition to the method of admission. As Lidz et al. (1997) pointed out, client self-reports may be the most accurate measures of subjective experience. However, a combination of self-report, parent report, clinician report, and objective data may provide a more accurate indicator of admission experience. In other words, obtaining data from multiple sources can help validate adolescents' self-reports. Further, cumulative effects regarding adolescents' experiences of coercion at admission and throughout treatment can occur (Iverson et al., 2007). Therefore, future research should account for adolescents' subjective and objective experiences of coercion at admission and throughout treatment to understand their outcome trajectories (e.g., Iverson et al., 2007).

A true experimental design that randomly assigns adolescents to an IYT or non-IYT condition may be challenging from a practical and ethical standpoint. However, a research design that establishes temporal precedence would allow for more robust inferences regarding causation and mediation effects related to involuntary admission method, such as IYT, and interpersonal processes, such as negative pressures and voice exclusion. Further, an experimental design that implements an intervention intended to facilitate adolescents' involvement (i.e., voice) and relies on positive pressure techniques in addition to admission as usual may be a viable way to evaluate the present findings in future research.

Finally, additional research may benefit from investigating adolescents' trauma histories and mental health diagnoses related to admission experiences and subsequent

effects during and after treatment. Such investigation is critical to understanding the implications of IYT and other coercive methods for adolescents with a history of trauma or other mental health diagnoses associated with it. For example, IYT procedures or other involuntary admission methods may be more likely to elicit traumatic responses in adolescents with a history of trauma or mood disorder. Such research is essential to ensuring adolescents with traumatic histories are protected from re-traumatization and preventing new trauma in other adolescents.

Conclusion

This dissertation combined existing research on admission coercion with SDT and PRT to provide a framework for investigating admission coercion, specifically IYT, in the context of adolescents entering RT (see Figure 2.1; Brehm & Brehm, 1981; Hoge et al., 2001; Monahan et al., 1999, 2001; Ryan & Deci, 2008, 2017). Based on the results, IYT is a common admission practice in RT and associated with at least four negative subjective outcomes at admission, including negative pressures, voice exclusion, perceived coercion, and angry emotion. Perhaps most significantly, this research found evidence for two path models demonstrating IYT's association with adolescents' perceived coercion and angry emotion at admission. In the first model, IYT was strongly related to adolescents' perceived coercion through two single indirect pathways: (a) negative pressures and (b) voice exclusion. The second model extended these findings and found IYT was also related with adolescents' increased probability of endorsing angry emotion at admission through two double indirect pathways and one single indirect pathway: (a) negative pressures through perceived coercion, (b) voice exclusion through

perceived coercion, and (c) negative pressures.

These findings are significant because they offer guidance for reducing coerced or involuntarily admitted adolescents' adverse experiences of perceived coercion and angry emotion at admission. Specifically, it is reasoned that reducing adolescents' experiences of negative pressures and voice exclusion during IYT or other coercive admission processes may alleviate their perceived coercion and angry emotion at admission. In other words, IYT may be associated with an adverse RT admission experience. However, admission practices that avoid negative pressures and promote adolescents' opportunity to voice their opinions may improve their admission experience irrespective of IYT.

This research offers a basis for additional investigation into adolescents' coercive admission experiences and how these relate to their immediate quality of motivation towards change and treatment trajectories. Such research should include adolescents' subjective experiences related to coercion during admission and throughout treatment, along with objective data of any imposed restrictions.

In the absence of stronger empirical evidence, this dissertation can inform practice and policy recommendations for IYT and other involuntary admission approaches in RT. This dissertation discussed ways for improving adolescents' subjective experiences during RT admission. These suggestions can be combined with Gass et al.'s (2021) recommendations for the ethical use of IYT in determining which admission procedures may be appropriate for adolescents entering RT on a case-by-case basis.

Finally, in the absence of well-established research, involuntary admission practices, including IYT, should also rely on established psychological theory, specifically SDT and PRT, and professional codes of ethics (e.g., American Psychiatric

Association, 2011; American Psychological Association, 2010; NASW, 2008). These theories and codes of ethics emphasize the responsibility of social workers and allied professionals to promote clients' self-determination. When adolescent clients pose a threat of imminent harm to themselves or others, it may be appropriate to restrict their self-determination temporarily (NASW, 2008). However, in such cases, the least restrictive intervention that promotes the inherent dignity and worth of the adolescent should be used (NASW, 2008, Ryan & Deci, 2017).

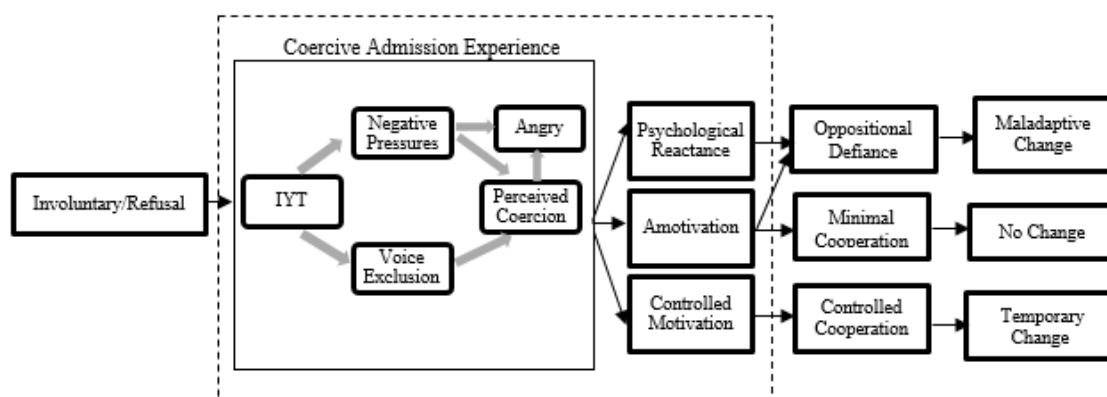


Figure 5.1. Integrated coercive admission model

APPENDIX A

MACARTHUR ADMISSION EXPERIENCE SURVEY

(SHORT-FORM)

Admission Experience Survey: Short Form

"I am now going to read you some statements about your coming into the program at this time. Please answer either "TRUE" or "FALSE" to each statement. Try to answer each question individually, no matter how similar it may sound to another."

	True	False	Don't Know
1. I felt free to do what I wanted about coming into the program.	☐	☐	☐
2. People tried to force me to come into the program.	☐	☐	☐
3. I had enough of a chance to say whether I wanted to come into the program.	☐	☐	☐
4. I chose to come into the program.	☐	☐	☐
5. I got to say what I wanted about coming into the program.	☐	☐	☐
6. Someone threatened me to get me to come into the program.	☐	☐	☐
7. It was my idea to come into the program.	☐	☐	☐
8. Someone physically tried to make me come into the program.	☐	☐	☐
9. No one seemed to want to know whether I wanted to come into the program.	☐	☐	☐
10. I was threatened with commitment to a more secure program.	☐	☐	☐
11. They said they would make me come into the program.	☐	☐	☐
12. No one tried to force me to come into the program.	☐	☐	☐
13. My opinion about coming into the program didn't matter.	☐	☐	☐
14. I had a lot of control over whether I went into the program.	☐	☐	☐
15. I had more influence than anyone else on whether I came into the program.	☐	☐	☐

Subscales of the MacArthur Admission Experience Survey (AES) -- Short Form 1

Item 9 of the AES-Short Form was eventually dropped from these scales.

I. Perceived Coercion Scale

The scale is thus 0-5, with each "True" = 0, and each "False" = 1. See Gardner et al (1993), p.316.

1. I felt free to do what I wanted about coming into the program.
4. I chose to come into the program.
7. It was my idea to come into the program.
14. I had a lot of control over whether I went into the program.
15. I had more influence than anyone else on whether I came into the program.

II. Negative Pressures Scale

2. People tried to force me to come into the program.
6. Someone threatened me to get me to come into the program.
8. Someone physically tried to make me come into the program.
10. I was threatened with commitment.
11. They said they would make me come into the program.
12. No one tried to force me to come into the program.[reverse scored]

III. Voice Scale

The "voice" scale is an early version of what became the "procedural justice" scale (see Lidz et al, 1995).

3. I had enough of a chance to say whether I wanted to come into the program.
5. I got to say what I wanted about coming into the program.
13. My opinion about coming into the program didn't matter. [*reverse scored*]

IV. Affective Reactions to Program Placement

16. How did being admitted to the program make you feel? Did it make you feel:
 - a. Angry
 - b. Sad
 - c. Pleased
 - d. Relieved
 - e. Confused
 - f. Frightened

This instrument is adapted from

Gardner, W., Hoge, S., Bennett, N., Roth, L., Lidz, C., Monahan, J., and Mulvey, E. (1993). Two scales for measuring patients' performance perceptions of coercion during hospital admission. *Behavioral Sciences and the Law*, 20, 307-321.

APPENDIX B

MPLUS INPUT DATA

Mplus VERSION 8.1
MUTHEN & MUTHEN

INPUT INSTRUCTIONS

Title: Model 1

Data: File is
"C:\Users\clint\Dropbox (Personal)\PC\Desktop\Data\Prop_2_3_22.csv";

Variable:

NAMES ARE: Age Sex IYT RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5 RT_NPS1R
RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6 RT_VS1 RT_VS2 RT_VS3R YOQSR
AngryR;

MISSING ARE ALL(999);

USEVARIABLES ARE: IYT RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5 RT_NPS1R
RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6 RT_VS1 RT_VS2 RT_VS3R;

DEFINE:

RT_PCS = RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5;
RT_NPS = RT_NPS1R RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6;
RT_VS = RT_VS1 RT_VS2 RT_VS3R;

ANALYSIS:

BOOTSTRAP = 1000;

MODEL:

RT_PCS on RT_VS RT_NPS IYT;
RT_NPS on IYT;
RT_VS on IYT;
RT_VS WITH RT_NPS;

model indirect:

RT_PCS IND IYT;

OUTPUT: sampstat stdyx CINTERVAL(BCBOOTSTRAP) RESIDUAL;

Mplus VERSION 8.1
MUTHEN & MUTHEN

INPUT INSTRUCTIONS

Title: Model 1 w/covariates

Data: File is "C:\Users\clint\Dropbox(Personal)\PC\Desktop\Data\
Prop_2_3_22.csv";

Variable:

NAMES ARE: Age Sex IYT RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5 RT_NPS1R
RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6 RT_VS1 RT_VS2 RT_VS3R YOQSR
AngryR;

MISSING ARE ALL(999);

USEVARIABLES ARE: Age Sex IYT RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5
RT_NPS1R RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6 RT_VS1 RT_VS2
RT_VS3R YOQSR;

DEFINE:

RT_PCS = RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5;
RT_NPS = RT_NPS1R RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6;
RT_VS = RT_VS1 RT_VS2 RT_VS3R;

ANALYSIS:

BOOTSTRAP = 1000;

MODEL:

RT_PCS on RT_VS RT_NPS IYT;
RT_NPS on IYT;
RT_VS on IYT;
RT_VS WITH RT_NPS;
RT_PCS on YOQSR age sex;
RT_NPS on YOQSR age sex;
RT_VS on YOQSR age sex;

model indirect:

RT_PCS IND IYT;

OUTPUT: sampstat stdyx CINTERVAL(BCBOOTSTRAP) RESIDUAL;

Mplus VERSION 8.1
MUTHEN & MUTHEN

INPUT INSTRUCTIONS

Title: Model 2

Data: File is "C:\Users\clint\Dropbox(Personal)\PC\Desktop\Data\
Prop_2_3_22.csv";

Variable:

NAMES ARE: Age Sex IYT RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5 RT_NPS1R
RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6 RT_VS1 RT_VS2 RT_VS3R YOQSR
AngryR;

MISSING ARE ALL(999);

USEVARIABLES ARE: IYT RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5 RT_NPS1R
RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6 RT_VS1 RT_VS2 RT_VS3R
AngryR;

CATEGORICAL ARE AngryR;

DEFINE:

RT_PCS = RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5;
RT_NPS = RT_NPS1R RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6;
RT_VS = RT_VS1 RT_VS2 RT_VS3R;

ANALYSIS: ESTIMATOR = wlsmv;

BOOTSTRAP = 1000;

MODEL:

AngryR on RT_PCS RT_NPS;
RT_PCS on RT_VS RT_NPS;
RT_NPS on IYT;
RT_VS on IYT;
RT_VS WITH RT_NPS;

model indirect:

AngryR IND IYT;
RT_PCS IND IYT;

OUTPUT: sampstat stdyx CINTERVAL(BCBOOTSTRAP) RESIDUAL;

Mplus VERSION 8.1
MUTHEN & MUTHEN

INPUT INSTRUCTIONS

Title: Model 2 w/covariates

Data: File is "C:\Users\clint\Dropbox(Personal)\PC\Desktop\Data\
Prop_2_3_22.csv";

Variable:

NAMES ARE: Age Sex IYT RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5 RT_NPS1R
RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6 RT_VS1 RT_VS2 RT_VS3R YOQSR
AngryR;

MISSING ARE ALL(999);

USEVARIABLES ARE: Age Sex IYT RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5
RT_NPS1R RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6 RT_VS1 RT_VS2
RT_VS3R YOQSR AngryR;

CATEGORICAL ARE AngryR;

DEFINE:

RT_PCS = RT_PC1 RT_PC2 RT_PC3 RT_PC4 RT_PC5;
RT_NPS = RT_NPS1R RT_NPS2R RT_NPS3R RT_NPS4R RT_NPS5R RT_NPS6;
RT_VS = RT_VS1 RT_VS2 RT_VS3R;

ANALYSIS: ESTIMATOR = wlsmv;

BOOTSTRAP = 1000;

MODEL:

AngryR on RT_PCS RT_NPS;
RT_PCS on RT_VS RT_NPS;
RT_NPS on IYT;
RT_VS on IYT;
RT_VS WITH RT_NPS;
AngryR on YOQSR age sex;
RT_PCS on YOQSR age sex;
RT_NPS on YOQSR age sex;
RT_VS on YOQSR age sex;

model indirect:

AngryR IND IYT;
RT_PCS IND IYT;

OUTPUT: sampstat stdyx CINTERVAL(BCBOOTSTRAP) RESIDUAL;

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