GENDER ROLLS: THE ASSOCIATION OF TABLETOP ROLEPLAYING GAMES AND GENDER DYSPHORIA IN TRANSGENDER AND GENDER NON-CONFORMING ADULTS

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Abstract

Research has shown that transgender and gender non-conforming (TGNC) adults often experience Gender Dysphoria at clinically impairing (American Psychiatric Association, 2013) and subclinical levels (Galupo et al., 2020). However, there is presently little research on interventions that target and mitigate Gender Dysphoria, especially when it presents at subclinical levels. Recently, tabletop role-playing games (TTRPGs) have been repurposed to be more inclusive of queer identities. This study explored the gender affirmation that may be intrinsic to TTRPGs by investigating the associations between TTRPG gameplay and Gender Dysphoria, transgender resilience, and cognitive and psychological functions (e.g., immersion, cognitive flexibility, and emotion regulation). A sample of 225 transgender and gender non-conforming adults were included in the study and participants were fairly homogenous, with most identifying as White, well-educated, and as young adults (25-34). Contrary to predictions, exposure to TTRPG gameplay was not significantly associated with increased transgender resilience nor with the investigated cognitive and psychological functions. Additionally, Gender Dysphoria did not decrease with exposure to TTRPG gameplay. However, identity pride was negatively correlated with the amount of TTRPG gameplay, suggesting that transgender individuals who experienced more pride in their gender identity spent less time playing TTRPGs. These findings suggest that significant TTRPG game play may be used to avoid gender-related distress, but not reduce it. Future directions are discussed.

Keywords: transgender, gender dysphoria, tabletop roleplay, immersion, emotion regulation, cognitive flexibility

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Dedication

In loving memory of my grandparents, Elizabeth and James Blackson. When I was five years old, you told me I could grow up to become a doctor. Twenty-seven years later, I finally did it. Thank you for always believing in me.

The Association of Tabletop Roleplaying Games and Gender Dysphoria in Transgender and Non-binary Adults

Transgender and gender non-conforming (TGNC) individuals are at an increased risk for the development of psychopathology, as well as experiencing violence (Henry et al., 2021; Testa et al., 2012), suicidality (Wolford-Clevenger et al., 2017), houselessness (Shelton, 2015), poverty (Carpenter et al., 2020), and inadequate access to medical services (Kattari et al., 2015; Redcay et al., 2021). Additionally, cross-sectional estimates indicate that individuals who have not received gender-affirming medical care experience disproportionate rates of mood disorders. This includes depression rates of 28-68% and anxiety rates of 17-68%, which are significantly larger than the respective general US point prevalence rates of 7% and 2.9% (American Psychiatric Association, 2022; Tebbe & Budge, 2022). Meyer's Minority Stress Model (1995) suggests that these increased rates are due to the vulnerability of Lesbian, Gay, Bisexual, Transgender, Queer, and other gender and sexuality minority (LGBTQ+) individuals to experience chronic stress due to the constant stigmatization of living in a cisnormative[1] and heterosexual society (Meyer, 1995; Shipherd et al., 2019). Therefore, to reduce the vulnerabilities specific to TGNC individuals, interventions that target and enhance transgender resiliency are urgently needed to mitigate the distress related to gender incongruence (Call et al., 2021; Coulter et al., 2019; Hendricks & Testa, 2012).

TGNC individuals also disproportionately experience Gender Dysphoria (GD) which is defined as distress related to the incongruence between gender identity and sex assigned at birth (American Psychiatric Association, 2022). While cisnormative society correlates being biologically female to being a woman and being biologically male to being a man, TGNC

[1] Cisnormativity is the assumption that it is normal to be cisgender (Schilt & Westbrook, 2009).

individuals do not experience this congruence and are consistently invalidated by societal norms (Byne et al., 2018). Examples include the presumed usage of pronouns that relate to a person's sex assigned at birth rather than gender identity, as well as the assumption that a person's legal name is their preferred alias. However, due to the genderization of names, the use of legal identities may increase gender incongruence stress for a person of TGNC identity. This is complicated by the significant legal barriers that prevent TGNC individuals from easily changing their names (Hill et al., 2018). Furthermore, if a TGNC individual requests to use chosen pronouns or a different name than their legal name, this request may "out" them as transgender[2], possibly exposing them to discrimination or victimization (Hill et al., 2018). Therefore, until a TGNC person's gender expression matches their gender identity, they must weigh the risks of affirming their gender identity publicly against experiencing consistent gender-based invalidation, which ultimately may increase the severity of Gender Dysphoria (Tebbe & Budge, 2022).

Provided that Gender Dysphoria is a resulting condition from the incongruence of gender identity to biological sex and based on identity rather than disorder, it was proposed to be removed from the most recent edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) (American Psychiatric Association, 2022). This was due to concern that the diagnosis of GD pathologizes a healthy variant of gender identity (Zucker, 2017; Zucker et al., 2013). However, GD was ultimately retained due to the emphasis on distress related to the experience of gender incongruence and so necessary gender-affirming medical and psychotherapeutic services would be accessible by insurance to TGNC individuals (Beek et al., 2016; Zucker, 2017).

[2] Transgender is an inclusive term that encompasses both binary transgender, non-binary transgender, and gender non-conforming identities.

While there have been no large-scale studies currently completed on the prevalence of Gender Dysphoria to date, it is estimated that GD impacts approximately <0.1% of the population (American Psychiatric Association, 2022). However, these rates are likely underreported given that TGNC individuals are often reluctant to seek a formal diagnosis of Gender Dysphoria unless it is a prerequisite for attaining gender-affirming surgeries or Hormone Replacement Therapy (HRT) (American Psychiatric Association, 2022; Byne et al., 2018; Coleman et al., 2022; Kennis et al., 2022; Tebbe & Budge, 2022). These statistics are further confounded by the reality that non-binary transgender individuals rarely seek out gender-affirming medical interventions and that gender-affirming medical treatments are not universally desired by every transgender person (Coleman et al., 2022; Kennis et al., 2022). Due to the complicated relationship between GD diagnosis, TGNC identity, and the impact of minority stress, there is a deficit in the empirical literature regarding effective intervention strategies for TGNC individuals experiencing both clinical Gender Dysphoria and gender incongruence.

Meyer's 1995 Minority Stress Model (Hendricks & Testa, 2012) posits that there are two specific pathways for the development of gender minority distress: distal and proximal stress factors (Hendricks & Testa, 2012; Meyer, 1995; Testa et al., 2015) Distal stressors are quantified as the external experiences of gender invalidation, rejection, discrimination, and violence that TGNC individuals experience due to their non-cisgender identity (Lindley & Galupo, 2020). Proximal stressors are defined as internalized experiences of distress such as fear of rejection, internalized transphobia, and experiences of identity concealment (Testa et al., 2015). Given the impact of both external and internal stress factors, the model theorizes that transgender resilience assists in combatting these aversive experiences and reduces gender-related distress (Valentine & Shipherd, 2018). As a part of the Transgender Minority Stress Model of Resilience, Testa (2015)

identified that interpersonal connection to the TGNC community and pride in one's TGNC gender identity increase intrapersonal resilience (Testa et al., 2015). Additionally, in a study by Bockting et. al, these factors of resilience were further expanded to include peer and family support as it was found to negatively impact and moderate both gender stigma and psychological distress (Bockting et al., 2013). Therefore, increasing interpersonal and intrapersonal transgender resilience must be the targets of gender-affirming therapeutic interventions.

However, transgender resilience factors are not often included in intervention recommendations for Gender Dysphoria. Moreover, at this time there are no evidence-based psychotherapeutic treatments reported to reduce Gender Dysphoria specifically (Moomaw, 2022). The World Professional Association for Transgender Health (WPATH) has routinely published Standards of Care (SOC) for healthcare professionals working with TGNC individuals with recommendations for mental health professionals included. However, these suggestions primarily instruct clinicians on how to connect TGNC individuals with gender-affirming medical interventions, rather than directly guide clinicians on how to provide gender-affirming mental health care (Coleman et al., 2022). While novel trans-affirming frameworks for counseling interventions have arisen to assist clinicians with psychotherapy specifically with the TGNC community, these are broad recommendations and do not specifically target Gender Dysphoria (Chang et al., 2018).

Gender-affirming medical interventions, such as chest reconstruction surgery, genital reconstruction surgery, and hormone replacement therapy have all been demonstrated to reduce GD significantly (Valentine & Shipherd, 2018; Weissler et al., 2018). Nevertheless, access to these interventions may remain inaccessible or undesirable to transgender community members who seek non-medical alternatives for Gender Dysphoria reduction. Therefore, interventions that

specifically target and increase TGNC individuals' level of transgender resilience need to be explored further within the mental health field.

While research regarding the therapeutic impact of Tabletop Roleplaying Games (TTRPG) on mental health disorders has only recently become a topic of interest in the clinical community, present research indicates that TTRPGs elicit positive therapeutic and mental health outcomes (Abbott et al., 2022; Daniau, 2016; Henrich & Worthington, 2021; Rosselet & Stauffer, 2013). Specifically, there is evidence that TTRPG players are more creative (Chung, 2013) and empathetic (Rivers et al., 2016) than non-gamers and that TTRPGs provide a safe environment for players to explore their identities and develop community (Wilson, 2007). Furthermore, TTRPGs have been demonstrated to clinically reduce social anxiety disorder (Varrette et al., 2023) and increase experiences of social connectedness (Abbott et al., 2022; Katō, 2019).

Additionally, TTRPGs reportedly increase healthy levels of immersion (Bowman & Lieberoth, 2018). While clinical disassociation has been linked to maladaptive coping to facilitate avoidance, immersion functions to a lesser degree to allow a person to experience different situations through imaginative scenarios (Lankoski & Järvelä, 2012). In doing so, a player may be able to practice problem-solving, confrontation, and social skills, as well as experience positive emotions (Lankoski & Järvelä, 2012). Furthermore, through game immersion TGNC individuals could experience gender affirmation and congruence in cases where the player assumes the role of a character who mirrors their own gender identity. This is particularly salient for gender congruence psychotherapy as TGNC individuals exist in a cisnormative society where their gender expression may never be recognized by social norms. However, through the immersive elements of TTRPGs, TGNC individuals can experience gender

congruence. Given that the experiences of immersion affect the mind as readily as experiences in reality, the immersive factor of TTRPGs could provide the only opportunity for TGNC individuals to have their gender actualized authentically (Schroeder & Matheson, 2006; Sulfaro et al., 2024).

Emotion regulation has been demonstrated as a mediating factor for resilience (Karreman & Vingerhoets, 2012). Strong emotion regulation has been linked to increased positive affectivity and intentional goal achievement, while reduced emotion regulation has been correlated to increased psychopathology and negative affectivity (Spaapen et al., 2014). Therefore, interventions that can increase emotion regulation would be valuable for individuals who experience Gender Dysphoria. TTRPGs offer players opportunities to experience a variety of emotions, provided the abundance of imaginative scenarios and interactions with each other. In a 2024 study by Winardy et al., the research team identified three types of emotion-based experiences gamers encounter while playing TTRPGs, including community-related emotions, character-related emotions, and mechanic-related emotions (Winardy et al., 2024). Given the abundance of emotion-based experiences available to players, TTRPGs offer the opportunity to practice emotion regulation during challenging, imaginative scenarios, while being supported by their gaming community. Furthermore, if a scenario were to pertain to gender identity conflicts, such as managing experiences of transphobia, TTRPGs may offer a safe space to practice managing the emotional experiences of transphobia and Gender Dysphoria in a contained and supportive environment. Therefore, it is possible TTRPGs offer the unique opportunity to develop TGNC-specific emotion regulation strategies.

Furthermore, the structure and culture of TTRPG gameplay corresponds to the resilience factors that are indicated in Testa's TGNC adaption of Meyer's Minority Stress model, the

Transgender Minority Stress Model of Resilience (Hendricks & Testa, 2012; Testa et al., 2015). Testa indicates that TGNC individuals who experience community connectedness, peer support, and identity integration experienced higher rates of self-esteem and lower levels of mental health symptomatology (Hendricks & Testa, 2012; Valentine & Shipherd, 2018). Since TTRPGs are played by a group of players and facilitated by a game master[3], the game itself forms a community for collaboration. Furthermore, given the problem-solving nature of the game, peer support is an intrinsic element of play. The game also allows the players to develop a character, which if related to the player's gender identity, could provide affirmative experiences of gender congruence and identity integration.

The structure of TTRPGs could also reduce the risk factors associated with TGNC distal and proximal stressors that are associated with increased gender-related distress. The community that is formed between the players and the game master is intended to be respectful and collaborative. Provided that the game master is gender-affirming, their supervision of the game should reduce the likelihood of gender-related rejection and discrimination during play. Furthermore, players assume the roles of characters whose gender identities may not match their gender expression. Because of this, the gaming group must actively practice gender affirmation throughout the play to properly gender characters. This removes the need for gender concealment, as the player's gender is not associated with TGNC identity, but rather the game itself. Given that the culture of TTRPGs appears to both promote the resilience factors that are indicated to support TGNC identity and diminish the presence of distal and proximal stressors, research must be conducted to empirically assess the promotion of these resilience factors in TGNC tabletop gamers.

[3] Game Master (GM) is the player who organizes and structures the game. They may also be known as a Dungeon master (DM), Administrator, or Storyteller, among other titles.

Current Study

At present, no empirical research has been conducted to evaluate the psychological effect of tabletop roleplaying games on TGNC individuals. This novel study was the first to evaluate the connection between transgender resilience and TTRPGs and investigate the efficacy of utilizing TTRPGs as a therapeutic intervention with the transgender community to reduce Gender Dysphoria (Testa et al., 2015). Given the burgeoning research on the therapeutic impact of TTRPGs as a means of reducing mental health symptomatology, large gaps in the literature remain as researchers continue to uncover the clinical relevance of TTRPG gameplay (Daniau, 2016).

This cross-sectional study deviated from the prevalence of utilizing qualitative methodology to access the possible therapeutic gains of TTRPGs (Abbott et al., 2022; Daniau, 2016) with generalized, community-based gameplay. It compared TTRPG TGNC gamers and non-recent gamers (no experience, no experience within 12 months) on variables pertinent to mental health (e.g., gender dysphoria severity) and operationalized the aspects of transgender resilience to assess for comparative differences (e.g., community connectedness, identity pride) (Bockting et al., 2013; Hendricks & Testa, 2012; Valentine & Shipherd, 2018). Taking into account the structure and culture of TTRPG gameplay, it was hypothesized that TGNC tabletop gamers would show significantly different levels of transgender resilience and gender incongruence in comparison to TGNC non-recent gamers. Furthermore, if transgender resilience was elevated and gender incongruence was reduced in TTRPG gamers when compared with non-recent gamers, it would demonstrate the possible efficacy of utilizing TTRPGs as an accessible therapeutic intervention for the transgender community to reduce Gender Dysphoria.

Given previous research on the associations between tabletop roleplaying games and certain psychological and cognitive functions in the general population, this study hypothesized that when compared with TGNC non-recent gamers, transgender individuals who have recently participated in tabletop roleplaying would also present with increased levels of (1) immersion, (2) cognitive flexibility, and (3) emotion regulation. Historically, research that investigated the psychological and cognitive benefits of TTRPG play was determined through intervention studies (Rivers et al., 2016). However, it is undetermined if passive play, or play without the intention of specific intervention would produce similar findings. If the presented psychological and cognitive processes continue to be significantly higher when compared with TGNC non-recent gamers, it would provide initial evidence that TTRPG gameplay produces clinical implications even in unstructured environments.

Additionally, to understand the differences between exposure (e.g., experience within 12 months, non-recent gamers) and dose-response it was hypothesized that within TGNC individuals who play TTRPGs, time spent playing TTRPGs would show a significant association with Gender Dysphoria and transgender resilience (e.g., community connectedness, identity pride). While the available literature on resilience and tabletop roleplaying games as a therapeutic intervention leads us to believe that TTRPGs may serve as a valuable resource for TGNC individuals who experience Gender Dysphoria, this study will be the first to attempt to discover these specific associations.

Method

Participants

The questionnaire was initiated by 325 participants. After ineligible participants were removed from data analysis, the final sample consisted of 225 Transgender (n = 90; 40%) and

Non-binary (*n* = 135; 60%) individuals who had voluntarily participated in the research protocol. The sample presented with diverse sexual orientations with no individual identity representing more than 29% of the total sample. The majority of the sample was highly educated, having obtained an associate degree or higher (*n* = 147; 65%). Participants ranged in age from 18 to 57 (M = 30, SD = 7.14) and represented 14 countries, though the sample was highly representative of the United States of America (*n* = 173; 77%). The sample was racially and ethnically limited with 84% identifying as White/Caucasian (*n* = 190) and 16% identifying from diverse racial and ethnic backgrounds (n = 35).

To evaluate the first hypothesis, the sample was divided into TGNC individuals who had played tabletop roleplaying games within the previous year and TGNC individuals who had no recent exposure to TTRPG gameplay (e.g., no experience, experience more than 12 months previous). This division of the sample allowed for the comparison of TTRPG exposure between these two unique groups. To evaluate the dose-response hypothesis, non-recent gamers were removed from the sample. Additional demographic characteristics of the sample, including individual characteristics of TGNC gamers and non-recent gamers, are displayed in Table 1.

Recruitment

To recruit a difficult-to-reach, marginalized population, participants were recruited through three distinct methods. The research protocol was advertised to potential participants through social networking websites such as Instagram and Facebook. All contacted pages were inclusive of TGNC individuals and were communities devoted to the interconnection of TGNC identity and tabletop roleplaying games. Additionally, LGBTQ+ organizations within the northeastern United States region were contacted and requested that the research protocol be shared with their members. Flyers detailing recruitment information were also distributed within

cafes, comic book, and board game stores within the northeastern United States region to capture participants who were not connected to online or in-person communities.

The recruitment flyer disclosed the purpose of the study (i.e. to understand the association between tabletop gameplay and TGNC identity), inclusion criteria (i.e. at least 18 years old, TGNC identity status), IRB protocol number, and the principal investigator's contact information. The research flyer presented a QR code that would connect participants directly to the research consent form and questionnaire. This consideration was crucial for the target participant demographic given that "stealth" TGNC individuals, or members of the TGNC community who are currently passing as cisgender for safety or personal considerations, would be able to participate in the research protocol without publicly exposing their TGNC identity (Tebbe & Budge, 2016). Participants most frequently accessed the survey via an anonymous weblink which was distributed to both social networking websites and LGBTQ+ organizations (86 %) and the remainder of the participants utilized the QR code (14%). Participants were recruited until over 230 participants met the inclusion criteria. This number was determined based on a power analysis that determined 210 participants would be necessary to power a one-way, multivariate analysis of covariance (MANCOVA) with two groups and that 152 participants would be necessary to properly power a two-tailed correlation analysis.

Procedure

This study received approval by the Institutional Review Board (IRB) at the host university. Participants completed an online battery generated and distributed through Qualtrics XM, an online survey tool. The battery explored the association between TGNC gender identity and tabletop roleplaying games through the lens of the Transgender Minority Stress Model of

Resilience (Testa et al., 2015). Additional aspects of resilience and cognitive and psychological functioning were assessed, including cognitive flexibility, emotion regulation, and immersion.

Prior to the start of the questionnaire, all participants completed an informed consent and any participants who did not consent to the research protocol had their survey terminated. A demographics questionnaire assessed the participants' gender identity, sexual orientation, racial and ethnic identity, age, relative geographic location (state/territory, country), and education. A six-question, self-report assessment was provided to those who reported having experience playing TTRPGs within the previous 12 months. Participants then completed a computerized battery consisting of the Gender and Life Satisfaction Scale (GCLS; Jones et al., 2018), the Community Connectedness (CC) and the Identity Pride (IP) subscales of the Gender Minority Stress and Resilience Measure (GMSR; Testa et al., 2015), the Emotional Regulation Questionnaire (ERQ; Gross & John, 2003), the Cognitive Flexibility Inventory (CFI; Dennis & Vander Wal, 2010), and the Immersive Tendencies Questionnaire short-form (ITQ-10; Rózsa et al., 2022).

All participants completed the tasks in the same order. The protocol concluded with debriefing materials which included local and national resources for gender minority and psychological distress in the United States, a statement of gratitude for participation, and an opportunity to consent to receiving information regarding future studies. Participants were also offered the opportunity to opt into a raffle for one of ten, $10 Amazon gift cards or to donate their $10 to an LGBTQ+ non-profit of their choice. Compensation was deemed appropriate given the marginalized experiences being shared by the target demographic population for research purposes.

Measures

Five self-report measures and one 6-item assessment developed to specifically assess TTRPG experience were used in the data collection. Excluding the TTRPG experience assessment, all measures were standardized with sound psychometric properties.

Tabletop Roleplaying Experience

A 6-item, self-report assessment of TTRPG experience was provided to assess participants' frequency of gameplay and amount of exposure to TTRPGs within 12 months. This assessment was constructed by the principal investigator as no standardized measure had been created to assess TTRPG use in clinical settings. To assess the dose-response of TTRPG gameplay, data was collected in two ways. Participants were asked to report approximately how many hours they had played TTRPGs in an average month, and answers were provided in intervals of three hours (e.g., 1-3, 4-6, 7-9, 10-12, 13-15, or 16+). Participants were then asked to report how many months they had played TTRPGs in the previous 12 months. By taking the average of the interval monthly hours and multiplying it by the number of months played, a projected yearly total was created (*Monthly Hours X Months*). Additionally, participants were asked to numerically self-report how many total hours they believed they had played TTRPGs within the previous 12 months (*Reported Total Hours*). This produced two variables that equivalated exposure to TTRPGs within 12 months.

Gender Dysphoria and Gender Congruence

Gender incongruence as a means to operationalize Gender Dysphoria was measured using the Gender and Life Satisfaction Scale (GCLS; Jones et al., 2018). The GCLS is a 38-item self-report measure that has been validated for transgender and non-binary individuals over 17 years old (Jones et al., 2018, 2019). Items are measured on a five-point Likert-type scale anchored by 1 = *always* and 5 = *never*. Item examples included, "I have felt comfortable with

how others have perceived my gender" and "I have been unable to have a fulfilling life because of the distress relating to my genitalia." Higher global scores are associated with more positive gender-related mental health outcomes (Jones et al., 2018). The scale has demonstrated excellent internal consistency (0.95) and construct validity (Jones et al., 2018). In the current study, Cronbach's alpha coefficient for the global scale was 0.91.

Gender Dysphoria was measured using the Gender Congruence (GC) cluster of the GCLS (Jones et al., 2018). This cluster contains 17 self-report items, five of which require reverse scoring. Lower scores are associated with more severe gender incongruence, which was operationalized for this study to measure Gender Dysphoria severity (Jones et al., 2018). Additionally, the GC cluster yielded a mean score of 2.83 (SD = 0.84) among 451 TGNC individuals and 4.48 (SD = 0.37) among 338 cisgender individuals from the UK. This sample included adults aged 17-77, with a balanced distribution across gender identities. The GC cluster demonstrates strong reliability with a Cronbach's alpha coefficient of 0.83 (Jones et al., 2019). In the current study, Cronbach's alpha coefficient was 0.84 for the GC cluster.

Transgender Resilience

Transgender resilience was measured using the Community Connectedness (CC) and the Identity Pride (IP) subscales of the Gender Minority Stress and Resilience Measure (GMSR; Testa et al., 2015). The GMSR is a 58-item self-report measure that assesses three TGNC proximal minority stress factors, four TGNC distal minority stress factors, and two TGNC resilience factors. Transgender resilience (CC and IP scales) were the only subscales that were measured in this study, and a higher score on each subscale indicates a greater amount of transgender resilience (Chavanduka et al., 2021). Items are measured on a five-point Likert-type scale anchored by 1 = *strongly disagree* and 5 = *strongly agree,* and a higher score indicates a more significant

presence of transgender resilience. The CC subscale consists of 5 items, two of which require reverse scoring. Item examples for the CC subscale include, “I feel connected to other people who share my gender identity.” The IP subscale consists of 8 items, and an item example includes, “I'd rather have people know everything and accept me with my gender identity and gender history.”

The IP subscale yielded a mean total score of 16.5 (SD = 8.3) among 844 TGNC individuals from North America. However, no mean total score was reported for the CC subscale from this sample. The sample included adults aged 18 and older with a mean age of 34 (SD = 13.28), with a balanced distribution across genders. The GMSR has demonstrated strong convergent, discriminant, and criterion validity, as well as strong internal consistency for both the transgender resilience subscales. The Cronbach’s alpha coefficient was 0.90 for the Community Connectedness subscale and 0.90 for the Identity Pride subscale (Testa et al., 2015; L. C. Wilson et al., 2024). This measure was included as it directly correlates to the Transgender Minority Stress Model of Resilience which is the basis for this study’s assessment of TGNC resilience (Hendricks & Testa, 2012). In the current study, Cronbach’s alpha coefficient was 0.84 for the Community Connectedness subscale and 0.82 for the Identity Pride subscale.

Emotion Regulation

The Emotional Regulation Questionnaire (ERQ) was used to measure participant’s use of emotion regulation strategies (Gross & John, 2003). The ERQ is a 10-item self-report measure that assesses how respondents regulate their emotions utilizing two subscales, the Cognitive Reappraisal subscale and the Expressive Suppression subscale (Gross & John, 2003). Cognitive reappraisal is a form of emotion regulation that is positively associated with general well-being (García et al., 2023). This form of emotion regulation augments how a person interprets an

emotionally charged situation to reduce its psychological impact (Lazarus & Alfert, 1964). Conversely, expressive suppression is an emotion regulation strategy associated with depressive symptomology and is defined as a form of response modulation that inhibits the normal expression of emotions (García et al., 2023; Gross & John, 2003)

Items on the ERQ are measured on a seven-point Likert-type scale anchored by 1 = *strongly disagree* and 7 = *strongly agree*. Higher scores equate to greater use of that particular emotion regulation strategy, and lower scores represent less frequent use. The Cognitive Reappraisal subscale consists of six items and includes statements such as, "When I want to feel less negative emotion, I change the way I'm thinking about the situation." Additionally, the Expressive Suppression subscale consists of four items and includes statements such as, "I keep my emotions to myself." The Cognitive Reappraisal subscale yielded a mean score of 4.60 (SD = 0.94) for men and 4.61 (SD = 1.02) for women. The Expressive Suppression subscale also yielded a mean score of 3.64 (SD = 1.11) for men and 3.14 (SD = 1.18) for women. These samples were composed of undergraduate college students (mean age = 20) from four separate samples that ranged from 116 to 791 participants. The ERQ has demonstrated strong construct validity, and a high internal consistency (0.77 - 0.82). Additionally, it has demonstrated strong reliability for both the Cognitive Reappraisal subscale (Cronbach's alpha = 0. 79) and the Expressive Suppression subscale (Cronbach's alpha = 0.73) (Gross & John, 2003). In the current study, the Cronbach's alpha coefficient was 0.81 for the Cognitive Reappraisal subscale and 0.81 for the Expressive Suppression subscale.

Cognitive Flexibility

The Cognitive Flexibility Inventory (CFI) was used to measure participant's cognitive flexibility (Dennis & Vander Wal, 2010). Cognitive flexibility refers to an individual's

adaptability towards unanticipated events and could facilitate creative problem-solving and successful conflict-resolution skills (Martin & Anderson, 1998; Rosenkrantz et al., 2020). The CFI is a 20-item self-report measure used to assess the adaptability of participants' cognitive flexibility (Dennis & Vander Wal, 2010). Items on the CFI are measured on a seven-point Likert-type scale anchored by 1 = *strongly disagree* and 7 = *strongly agree*, and five items require reverse scoring. Higher scores equate to more adaptive functioning and positive coping in response to difficult situations, and lower scores represent more rigid thinking styles (Dennis & Vander Wal, 2010). Item examples included, "I like to look at difficult situations from many different angles," and "I find it troublesome that there are so many different ways to deal with difficult situations."

The CFI yielded global mean scores of 102.98 (SD = 13.91) and 105.38 (SD = 13.84) from two samples. These samples were composed of US undergraduate college students (mean age = 20, SD = 1.5) from two samples that were composed of 196 and 152 participants respectively. The CFI has demonstrated excellent internal consistency and reliability (Cronbach's alpha = .90 - .91) and in the current study, Cronbach's alpha coefficient was 0.88 (Dennis & Vander Wal, 2010).

Immersion

The Immersive Tendencies Questionnaire short-form (ITQ-10) was used to measure and compare participants' adaptive and maladaptive abilities to immerse in TTRPGs (Rózsa et al., 2022). Multiple measures have been designed to assess the association of player immersion in both video and board games (Farkas et al., 2020; Jennett et al., 2008). However, given that TTRPGs facilitate an immersive experience that is not entirely reflective of either of these environments and a specific TTRPG immersion measure has yet to be created, the Immersive

Tendencies Questionnaire short-form (ITQ-10) was chosen to assess the capacity or tendency for individuals to become immersed in TTRPGs (Curran, 2013; Rózsa et al., 2022; Witmer & Singer, 1998). The ITQ-10 is a 10-item self-report measure that assesses two subscales, Involvement which consists of 6 items, and Attention Focus which consists of 4 items (Rózsa et al., 2022). The involvement subscale relates to maladaptive behavioral functioning and a higher degree of negative affectivity and disinhibition. Conversely, the Attention Focus subscale relates to adaptive behavioral functioning, higher mental control, and more significant well-being (Rózsa et al., 2022). The scales inform if the participant engages in primarily adaptive or maladaptive immersion or a mix of both forms of immersion.

Items are measured on a seven-point Likert-type scale primarily anchored by 1 = *never* and 7 = *often.* However, the Likert scale wording can change per item with '1' including terms "*never, not alert, not fit, or not very good"* and '7' including terms "*often, fully alert, extremely fit, or very good*." Higher scores equate to more frequent use of the specific immersive tendency. Item examples for the Involvement subscale include, "Do you ever become so involved in a TV program or book that people have problems getting your attention?" and item examples for the Attention Focus subscale include, "How well do you concentrate on enjoyable activities?"

The ITQ-10 exhibits a high external validity and is reliable in assessing the difference between maladaptive (Involvement subscale; Cronbach's alpha = 0.89) and adaptive (Attention Focus subscale; Cronbach's alpha = 0.71) immersive traits in a predominantly female sample of 781 adult Hungarian graduate students (mean age = 28; SD = 11.03) (Rózsa et al., 2022). However, no mean scores were provided from this study. In the current study, the Cronbach's alpha coefficient was 0.79 for the Involvement subscale and 0.49 for the Attention Focus subscale. According to Pallant (2013), scales with less than 10 items can produce low Cronbach

alpha totals and > 0.5 is acceptable for these low-item scales (Pallant, 2020; Schrepp, 2020). Provided the Cronbach's alpha of the Attention Focus subscale was close to this range, it was retained for data analysis.

Data Analysis

All analyses were conducted in SPSS version 29.0. Descriptive statistics were conducted to describe demographics and sample characteristics (Table 1). Of the initial 325 responses, 82 were removed for completing less than 80% of the protocol and 1 response was removed for not meeting the inclusion criteria of having a TGNC gender identity. Additionally, 5 responses were removed for unreliable questionnaire responses (failed instructed response item). The removal of these cases yielded an initial sample of 237 participants.

To determine which variable would be more appropriate to measure TTRPG experience, tests of normalcy were conducted on both TTRPG exposure variables, *Monthly Hours X Months,* and *Reported Total Hours*. Both Kolmogorov-Smirnov and Shapiro-Wilk tests indicated a significant departure from normality. However, the *Reported Total Hours* data was closer to a normal distribution than the *Monthly Hours X Months* variable, likely due to the constraints of the monthly hour intervals. Therefore, *Reported Total Hours* was used for the remainder of the data analysis to measure dose-response within the TTRPG TGNC gamer group. When participants neglected to answer the self-report of total hours question (e.g., "I have no idea what to put here, I play too much"), the *Monthly Hours X Months* variable was inserted as it was determined that the distribution patterns of both the variables were similar. Additionally, a review of participant TTRPG exposure hours revealed several outliers at the upper hour limit. A 2020 Oxford study, determined that 1 hour of gameplay a day correlated with greater psychological well-being (Johannes et al., 2020). Provided the study sought to investigate

healthy TTRPG gameplay rather than gaming addiction, outliers were removed. Therefore, the *Reported Total Hours* variable was winsorized for totals over 365 hours, resulting in the removal of 12 upper limit responses. This produced a final sample of 225 TGNC participants.

To assess for bias, a Pearson's Chi-square was conducted with the categorical demographic variables of the total sample (e.g., experience within 12 months, non-recent gamers). All demographic variables except sexual orientation were non-significant (sexual orientation; $p = 0.009$). All analyses were conducted with and without sexual orientation as a covariate and no significant differences between results were observed.

To examine the effect of the predictor variable (TTRPG gameplay experience), an omnibus test was conducted to examine if there were significant differences in outcome variables of interest in the hypotheses, across two groups (e.g., Gameplay with 12 months, Non-recent gameplay). The analysis was performed using a one-way, multivariate analysis of covariance (MANCOVA) and examined the associations between TTRPG gameplay experience and eight variables of interest (e.g., Gender Dysphoria, community connectedness, identity pride, immersion (involvement and attention focus), cognitive flexibility, and emotion regulation (cognitive reappraisal and expressive suppression). Each *F* value and its associated p-value were examined to determine the magnitude and statistical significance of the associations.

To examine the bivariate associations between the predictor variable (TTRPG exposure hours) and outcome variables of interest in the hypotheses, a correlation matrix was constructed (Table 3). This examined the associations between the two investigated forms of transgender resilience (e.g., community connectedness, identity pride), and Gender Dysphoria which was operationalized by the GC cluster of the GCLS. Each correlation coefficient and its associated p-value were examined to determine the magnitude and statistical significance of the associations.

Results

Screening for missing data revealed that data was missing from approximately <2% of responses. However, given that all participants with missing data completed >90% of each measure, imputation was deemed necessary to allow for the calculation of variable scores. Mean scores of items with missing data were then input to maintain item means. An inspection of skew, kurtosis, and scatterplots of the variables suggested there was no violation of assumptions of normality and linearity, with the exception of the TTRPG Experience variable. Means, ranges and standard deviations for study variables are represented in Table 2.

Associations Between TTRPG Experience and Gender Dysphoria, Transgender Resilience, Emotion Regulation, Cognitive Flexibility, and Immersion

The principal hypothesis proposed that TGNC participants who had played TTRPGs within the past 12 months would exhibit enhanced transgender resilience, immersion, cognitive flexibility, emotion regulation, and reduced Gender Dysphoria when compared with non-recent gamers. Provided the eight variables being analyzed within two groups, the critical alpha was set to .006. *F* tests were then conducted between the two TTRPG exposure groups. However, the results of the omnibus analysis revealed that there was no significant effect of TTRPG experience with $F(8, 215) = 1.407^{b}$, $p = .20$, $\eta^2 = .050$, and without $F(8, 216) = 1.339$, $p = .23$, $\eta^2 = .047$, sexual orientation as a covariate, for all outcome variables. Therefore, the first hypothesis was not supported. Additionally, because the sexual orientation covariate did not produce a significant effect on the analysis, no further analyses were conducted with sexual orientation as a covariate.

Associations Between TTRPG Exposure, Gender Dysphoria, and Transgender Resilience

It was also hypothesized that within TGNC individuals who play TTRPGs, time spent playing TTRPGs would show a significant association with transgender resilience and Gender Dysphoria. Pearson correlations were conducted between TTRPG *Reported Total Hours*, Gender Dysphoria as measured by the GCLS GC cluster, and transgender resilience (community connectedness, identity pride). It should be noted that lower scores on the GC subscale are considered a weakness, indicating more significant Gender Dysphoria.

Identity pride had a significant negative correlation with TTRPG reported total hours ($r = -0.158$, $p < 0.05$). However, Gender Dysphoria severity and community connectedness were not significantly related to the time TGNC individuals engaged in TTRPG gameplay in the previous 12 months. Therefore, the hypothesis that time spent by TGNC individuals engaged in TTRPG gameplay would have an association with transgender resilience was partially supported. Bivariate correlation test results between the total amount of TTRPG gameplay in 12 months and the variables of interest are displayed in Table 3.

Discussion

This study sought to address existing gaps in the literature by exploring the relationship between tabletop roleplaying gameplay and individuals of transgender identity. Specifically, this study aimed to determine the extent to which TTRPG gameplay was associated with Gender Dysphoria, transgender resilience, and psychological and cognitive processes of immersion, cognitive flexibility, and emotion regulation amongst those who identify as TGNC.

Based on the structure and culture of tabletop roleplaying games, it was hypothesized that TTRPG exposure would decrease Gender Dysphoria and increase transgender resilience due to the intrinsic community elements of gameplay and the ability for players to select their characters' gender identities (Daniau, 2016; Testa et al., 2015). Results did not support this

hypothesis as the associations between Gender Dysphoria and both forms of transgender resilience were weak and nonsignificant when associated with TTRPG exposure. This finding suggests that passive involvement in TTRPG gameplay is not enough to have a significant effect on transgender mental health. While exploring the use of TTRPGs as a therapeutic intervention for mental health disorders is relatively new, many studies have found TTRPGs to significantly reduce disorder severity. However, these studies often evaluate novel interventions and are facilitated by clinicians rather than the general population. To illustrate, Daniau (2016) developed a style of tabletop roleplaying they termed the Transformative role-playing game (TF-RPG). This form of TTRPG incorporates elements of student-centered learning and the transformative learning approach (Daniau, 2016; Paprock, 1992; Rogers, 1969). The TF-RPG approach specifies that prerequisite conditions for success include (1) small group size, (2) long duration of play, (3) use of props, (4) no disturbances, and (5) assured confidentiality (Daniau, 2016). Provided that this study assessed for the effect of generalized, community-based gameplay, these conditions are unlikely to be universally incorporated into gameplay not facilitated by a clinician, with treatment goals designated for a specific purpose. Therefore, it is unlikely that community-based involvement in TTRPGs will achieve clinical implications for transgender individuals. However, these success factors warrant further investigation in a contained environment where conditions, such as TA-RPG's prerequisites to success can be evaluated conjunctively with measures of transgender resilience and Gender Dysphoria.

It was also hypothesized that TTRPG exposure would increase the psychological and cognitive processes of cognitive flexibility, emotion regulation, and immersion. This hypothesis was also unsupported, which was inconsistent with previous research that indicated that TTRPG gamers reported more significant elevations in perspective-taking, empathy, and problem-solving

skills than non-gamers. These traits appeared to align with the assessed psychological and cognitive processes of this study (Rivers et al., 2016; Yuliawati et al., 2024). However, these unexpected results may challenge existing theoretical assumptions that TTRPG gameplay increases cognitive abilities. Additionally, this suggests that the relationship between TTRPG play and cognitive flexibility, emotion regulation, and immersion may need to be redefined for future studies. For clinicians, these results may imply that previous research may not hold true for all populations, given the specific gender-based inclusion criteria for this study. Therefore, researchers must continue to explore alternative theories for the previous significant associations between TTRPG gameplay and psychological and cognitive processes between players and non-players.

In the second hypothesis, an unexpected trend was observed when evaluating the association of dose-response of TTRPGs with Gender Dysphoria and transgender resilience. Consistent with the first analysis, Gender Dysphoria and community connectedness were not significantly related to the amount of TTRPG gameplay. However, identity pride showed a significant negative correlation when associated with time spent playing TTRPGs. Specifically, it was observed that participants with more identity pride spent less time playing TTRPGs. This was unanticipated as during recruitment many TGNC participants indicated that TTRPG gameplay had helped them with their gender identity self-acceptance process. However, consistent with this finding, a study by DeRenard and Kline (1990) found that TTRPG players who are more committed to the game or play more intensely reported more significant feelings of alienation (DeRenard & Kline, 1990). Transgender individuals may be biased towards TTRPGs as the game may serve as a pleasurable activity in the presence of transgender stress, and they may mistake enjoyment for gender-related stress reduction. Furthermore, TTRPG

gameplay may serve as a way to escape marginalized experiences, by substituting a harmful reality for the safety of fictional worlds. However, this may ultimately increase experiences of alienation as reported by DeRenard and Kline, and function as a means of avoidance from seeking gender-affirming care.

Limitations & Future Directions

This study had several limitations, the first of which was the prevalence of self-report measures throughout the protocol. Due to the recruitment of a specific subset of transgender participants, TGNC individuals with tabletop gaming experience, self-report measures were chosen to be the most accessible in an online, survey format. However, multiple psychological and cognitive functions were assessed throughout the protocol, specifically cognitive flexibility, emotion regulation, and immersion. Due to social desirability bias, it is possible that participants reported in a manner that they felt benefitted the study, rather than an accurate interpretation of their functioning. Notably, the participants in the study were volunteers, many of who expressed excitement to participate in novel research regarding the efficacy of TTRPG interventions for the transgender community. To reduce the possibility of bias, future research should consider alternative measures for assessing psychological and cognitive functioning, for example incorporating neuropsychological assessments such as the Stroop Interference Task (SIT; Stroop, 1935) or the Wisconsin Card Sort (Heaton et al., 1993) for measuring cognitive flexibility.

A second limitation of this study concerns the application of the 6-item, self-report assessment of TTRPG experience. This self-report measure was constructed by the principal investigator due to the lack of an equivalent standardized measure. The independent variable for the second hypothesis, reported total hours of TTRPG gameplay in 12 months, was used from the constructed measure for data analysis. However, tests of normality indicated that the data

from both TTPG Experience outcome variables did not conform to a normal distribution. This was possibly due to the use of an unvalidated self-report measure which was constructed for this study due to a lack of standardized measure. Alternatively, it is possible participants could have inaccurately reported TTRPG experience due to the retrospective recall of total gameplay over the previous 12 months. Studies have found that the longer the recall period, the less accurate a participant's self-report becomes. This then introduces a degree of possible measurement error that reduces the chances of detecting a treatment effect (Stull et al., 2009). To reduce the possibility of recall error, future research should employ a method to help participants accurately track and record their gaming experiences to reduce this possible form of error. Additionally, given the rapid increase in TTRPG research within the last decade, the creation of a reliable, standardized measure to assess TTRPG gaming experiences is urgently recommended (Daniau, 2016).

This study was also limited by the generalizability of its participants. Participants were primarily White (*n* = 190; 84%), well-educated with an Associate's degree or higher (*n* = 147; 65%), consisted of young adults (25 – 34; n = 131; 58%), and were US residents (*n* = 173; 77%). This is possibly representative of the target demographic for tabletop roleplaying games as such games are social and imaginative and require extensive problem-solving skills. Therefore, it is possible that individuals who have completed a higher degree of education would find this form of gameplay more accessible. Additionally, there is a significant cost associated with TTRPG gameplay. For example, as a player, many expensive, foundational items must be purchased to play these forms of games. These include dice sets, player rulebooks, character tokens, or figurines, and occasionally access to online platforms associated with rules or gameplay. Though socioeconomic status was not specifically assessed in this study's target demographics, this

likely factored into the prevalence of White and well-educated participants, as they may have had more available time and access to expendable financial capital to engage in consistent gameplay. Future research should include a more diverse participant sample and specifically include Black, Indigenous, and People of Color (BIPOC) participants with a more diverse age representation to produce more generalizable results.

The present study indicates that exposure to TTRPG gameplay is not associated with Gender Dysphoria, transgender resilience, or cognitive and psychological functioning. While previous research suggests that specific, TTRPG interventions have successfully mitigated various forms of psychological distress, simply playing the game does not result in significant change. Therefore, future research should identify the specific conditions that must be present for change to occur. It is recommended that future studies utilize current and validated research instruments, that assess participants at multiple time points to reduce participant bias and data error. Additionally, an observational approach should be incorporated for future TTRPG intervention studies to determine the specific conditions necessary to achieve significant clinical changes. To accomplish this, randomized controlled trials with varying conditions are recommended.

This study was inspired by the deficit in current literature regarding effective intervention strategies for TGNC individuals experiencing both clinical Gender Dysphoria and non-clinical gender incongruence. Despite qualitative research that positions TTRPGs as a beneficial avenue to reduce gender incongruence distress, the results from this study indicate that playing tabletop roleplaying games is simply not enough to significantly reduce Gender Dysphoria or increase transgender resilience (Sottile, 2024). Therefore, extensive gaps remain in available treatment options that do not require expensive and invasive surgeries to reduce Gender Dysphoria.

Researchers must continue to investigate novel interventions that specifically target and increase transgender resilience and reduce Gender Dysphoria to provide critical treatment to this at-risk population.

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Table 1

Sociodemographic Characteristics of Participants

Baseline characteristic	TTRPG experience within 12 months		No TTRPG experience within 12 months		Full Sample	
	n	%	***n***	%	***n***	%
Age						
	M=30	*SD*=7.10	*M*=28	*SD*=7.13	*M*=30	*SD*=7.14
Primary Gender Identity						
Transgender	68	39	22	42	90	40
Non-binary	105	61	30	58	135	60
Primary Sexuality						
Asexual	20	12	3	6	23	10
Bisexual	47	27	5	10	52	23
Gay	9	5	3	6	12	5
Lesbian	22	13	2	4	24	11
Pansexual	24	14	9	17	33	15
Queer	40	23	25	48	65	29
Questioning	3	2	2	4	5	2
Unlisted	8	5	3	6	11	5
Race						
African, African American, or Black	3	2	5	10	8	4
Asian or Asian American	5	3	1	2	6	3
Biracial or Multiracial	8	5	3	6	11	5
Caucasian or White	149	86	41	79	190	84
Hispanic or Latin(o/a/x/e)	3	2	1	2	4	2
Middle Eastern of North African	1	1	1	2	2	1
Unlisted	4	2	0	0	4	2
Highest level of education completed						
Some high school or less	3	2	0	0	3	1
High school diploma or GED	12	7	7	14	19	8
Some college, but no degree	42	24	12	23	54	24
Associates or technical degree	17	10	3	6	20	9
Bachelor's degree	61	35	12	23	73	32
Graduate or professional degree	37	21	17	33	54	24
Prefer not to say	1	1	1	2	2	1
Country						
Canada	15	9	2	4	17	8
United Kingdom of Great Britain	15	9	2	4	17	8
United States of America	128	74	45	87	173	77
Asian Countries	1	1	1	2	2	1
European Countries	11	7	2	4	13	6
Oceanian Countries	3	2	0	0	3	1

Note. $N = 225$. Participants were grouped by continent if the participant percentage was < 15%.

Table 2

Descriptive Statistics of All Scale Variables

Variable	*N*	Minimum	Maximum	*M*	*SD*
Tabletop roleplaying in 12 months					
Duration in Hours	173	2.00	364.00	110.14	93.94
GCLS					
Gender Congruence	225	21.00	78.00	45.60	11.10
GMSR					
Identity Pride	225	00.00	32.00	19.86	5.99
Community Connectedness	225	00.00	20.00	12.96	4.38
ERQ					
Cognitive Reappraisal	225	6.00	42.00	26.10	6.53
Expressive Suppression	225	4.00	28.00	15.36	5.85
CFI					
Cognitive Flexibility	225	57.00	135.00	98.81	15.68
ITQ-10					
Involvement	225	8.00	42.00	29.24	7.09
Attention Focus	225	6.00	24.00	16.57	3.56

Note. *N*, *M*, and *SD* are used to represent count, mean, and standard deviation, respectively. Sum scores for all scales were provided for consistency across measures. GCLS = Gender Congruence and Life Satisfaction Scale; GMSR = Gender Minority Stress and Resilience Measure (Testa et al., 2015); ERQ = Emotion Regulation Questionnaire (Gross & John, 2003); CFI = Cognitive Flexibility Scale (Dennis & Vander Wal, 2010); ITQ-10 = Immersive Tendencies Questionnaire, Short Form (Rózsa et al., 2022).

Table 3

Bivariate Correlation Between Variables

Variables	1	2	3
1. TTRPG Play in 12 Months; Reported Total Hours	--		
2. Identity Pride	-0.158* 0.04	--	
3. Community Connectedness	-0.020 0.80	0.318** < .001	--
4. Gender Dysphoria	-0.105 0.17	-0.049 0.52	-0.009 0.91

Note. N = 173. For the source of each variable, see measures defined in Table 2.

*$p < 0.05$ (2-tailed)

** $p < 0.01$ (2-tailed)