Universidade do Minho
Escola de Psicologia

Maria Martins Gomes Fernandes Costa

Understanding the Development of Transphobia: The role of need for closure and attachment

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Trabalho efetuado sob a orientação do
Professor Doutor José Ferreira-Alves

junho de 2025

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STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

University of Minho, 16th of July 2025



(Maria Martins Gomes Fernandes Costa)

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Abstract

Given the impact of prejudice against trans and gender-diverse individuals, understanding how to minimize and prevent transphobia is crucial. To improve their efficacy, these interventions can benefit from the knowledge of what draws individuals to transphobic attitudes. Therefore, this study explores the role that individual traits and developmental experiences have in this adherence. Namely, it analyzed how attachment affects the relationship between need for closure and transphobia. Additionally, two scales that evaluate the levels of the latter two variables were validated for the Portuguese population. With a sample of 209 higher education students, these measures were adapted successfully and the association between the study variables was explored. Results indicate that attachment dimensions mediate the association between need for closure and transphobia. However, this mediation differs among attachment dimensions. Therefore, the results suggest that future research should focus on how attachment experiences relate to transphobia, and how interventions that aim to reduce or prevent transphobia can integrate both the need for closure and attachment patterns of individuals in their efforts.

Keywords: Need for closure, transphobia, attachment, adult development

Compreender o Desenvolvimento da Transfobia: O papel da necessidade de certeza cognitiva e da vinculação

Resumo

Dado o impacto do preconceito contra indivíduos trans e de género diverso, é crucial compreender como minimizar e prevenir a transfobia. Para melhorar a sua eficácia, estas intervenções podem beneficiar da compreensão do que leva a atitudes transfóbicas. Assim, este estudo explora o papel de características individuais e experiências de desenvolvimento nesta adesão. Nomeadamente, analisou-se se a vinculação afeta a relação entre a necessidade de certeza cognitiva e a transfobia. Foram também validadas para a população portuguesa duas escalas de medição destas duas últimas variáveis. Com uma amostra de 209 estudantes do ensino superior, validou-se estas medidas e explorou-se a associação entre as variáveis em estudo. Os resultados indicaram que as dimensões de vinculação medeiam a associação entre a necessidade de certeza cognitiva e a transfobia. No entanto, esta mediação difere entre dimensões da vinculação. Assim, os resultados sugerem que a investigação futura deve focar-se na forma como as experiências de vinculação se relacionam com a transfobia e como as intervenções que a visam reduzir ou prevenir podem integrar a necessidade de certeza cognitiva e os padrões de vinculação dos indivíduos.

Palavras-chave: Necessidade de certeza cognitiva, transfobia, vinculação, desenvolvimento do adulto

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List of Abbreviations

ANOVA Analysis of Variance

CFA Confirmatory Factorial Analysis

ECNCC *Escala Curta de Necessidade de Certeza Cognitiva*

EGT-R *Escala de Genderismo e Transfobia – Versão Revista*

EVA *Escala de Vinculação do Adulto*

GTS Genderism and Transphobia Scale

GTS-R Genderism and Transphobia Scale – Revised

NFC Need for Closure

TGD Trans and Gender Diverse

Introduction

Worldwide, different groups of individuals are subjected to discriminatory practices. Whether this prejudice is based on factors such as ethnicity, religion or gender identity, among others, its impact can be felt in different areas of the life of anyone belonging to one or more minority groups. For example, the exacerbated stress minorities are subjected to impacts their health negatively (Frost & Meyer, 2023), as established by the Minority Stress Model (Meyer, 2003).

The term minority stress can be traced back to Brooks (1981), whose book focused on the psychological, social and economic stressors that affect lesbian women. However, the author does not define minority stress as exclusive to this group. Based on this concept, Meyer (2003) created the Minority Stress Model, which was first applied to sexual minorities. Eventually, researchers adapted this model to other minority groups (Frost & Meyer, 2023). One such case is the adaptation done by Hendricks and Testa (2012) to the trans and gender diverse (TGD) population, which presents the unique stressors that affect these individuals, given the high levels of discrimination they are subjected to.

The Discrimination of TGD individuals

According to the American Psychological Association (2015), TGD individuals are those whose gender identity, expression or behavior does not correspond to what is typically associated with the sex assigned to them at birth. Although research has shown that sex is not binary (Morgenroth & Ryan, 2021), individuals are usually categorized as female or male, often based on the external characteristics of their genitalia. Then, it is expected that they will fit into one of two gender categories – woman or man, respectively. This leads to generalizations and assumptions about one's body and gender identity, which ends up excluding those who do not fit perfectly into this categorization, such as TGD individuals.

Thus, we can consider transphobia as being a set of discriminatory attitudes against those who do not adopt or present themselves with a gender identity that fits perfectly in a binary gender category congruent with their sex, defined by the society they live in. These attitudes result from socially constructed beliefs of what gender "is" or "should be." Therefore, transphobia is characterized by an attitude of objection, non-understanding and rejection, which comes from "certainties" obtained through contact with others who reinforce these transphobic visions. It should be noted, however, that defining transphobia at an individual level, as cognitive perspectives tend to do, can imply that this type of prejudice comes from a set of beliefs that some specific individuals simply happen to have (Aguirre-Sánchez-Beato, 2020). Therefore, discursive approaches, which consider transphobia as a consequence of a set of social

norms that are performed or reproduced (Aguirre-Sánchez-Beato, 2020), should also be considered for a broader understanding of this prejudice.

In fact, given the high levels of prejudice to which TGD people are subjected to, and the presence of transphobia in various areas of social life (Moleiro et al., 2023a), accessing transphobic beliefs is not particularly difficult. Consequently, since they serve as reinforcement for already existent transphobic views, this hinders the effectiveness of attempts to subvert them. Additionally, it worsens the vulnerability of TGD communities, which have, among others, a higher prevalence of anxious and depressive symptoms, and a higher risk of self-destructive behavior and suicide (Tebbe & Budge, 2022). However, this prejudice has consequences beyond the domain of mental health. TGD individuals are victims of physical and psychological harassment, as well as interpersonal violence. Additionally, transphobia has a social and institutionalized character. As such, it also affects areas such as physical health and professional life (Moleiro et al., 2023a).

Therefore, the implementation of protection measures for TGD people is essential. Despite the community's resilience in the face of the disproportionate discrimination of which it is victim (Moleiro et al., 2023b), it is also necessary to intervene with individuals with transphobic beliefs and attitudes. Thus, it is possible that a greater comprehension of what facilitates the adherence to these can inform ways to make interventions to minimize and prevent transphobia more effective. However, while this study focuses on a cognitive perspective of transphobia, it is important to remember that these views are held at a societal scale. Additionally, even inside a cognitive framework, it should be noted that there is no single reason that leads to adherence to transphobic beliefs or behaviors. Previous studies have established relationships between this type of prejudice and individual factors such as tolerance of ambiguity, self-esteem, moral dogmatism and tendency towards aggression (Aguirre-Sánchez-Beato, 2020).

Predictors of Transphobia: The Case of Need for Closure

Another factor associated with transphobia is Need for Closure (NFC) (Makwana et al., 2018). According to Kruglanski and Webster (1996), NFC constitutes a need to have concrete and secure knowledge about a given subject, derived from the inclination to obtain it as soon as possible and maintain it over time. NFC is a stable dimension of individual differences, as well as a state that is evoked situationally, with consequences at a cognitive and social level. Individuals with a high NFC tend to prefer order and predictability, while being more intolerant of ambiguity. Additionally, they tend to be more close-minded and have a greater need to be decisive.

These characteristics have led to NFC being compared to the prejudiced personality proposed by Allport in 1954 (Roets & Van Hiel, 2011a). According to Allport (1979), a prejudiced individual's way of thinking, that is, their cognitive style, influences the way they think about a specific group, leading to their prejudiced attitudes. In their article, Roets and Van Hiel (2011a) argue that this cognitive style aligns with the description for NFC, as both share many similarities, such as an inclination to acquire definite answers as fast as possible and to cling to them. Likewise, both descriptions include a preference for order and structure, an intolerance of ambiguity, narrow-mindedness and a need for decisiveness. Additionally, they highlight how NFC has effects in prejudice, for example, regarding ethnicity and gender.

Higher levels of NFC are also linked to transphobia, in part due to the perception and association of TGD people with ambiguity (Makwana et al., 2018). In fact, NFC is indirectly related, through adherence to right-wing ideological attitudes and traditional beliefs about gender roles, to transphobia (Makwana et al., 2018). Additionally, it is related to the belief in a gender binary, prejudice against non-binary people, and opposition to the official recognition and implementation of gender-neutral pronouns (Morgenroth et al., 2021).

A Relationship Between Attachment, Need for Closure and Transphobia?

Knowing that individuals are both influenced by their individual factors, such as personality traits, as well as their experiences during development, this study aimed to investigate if this interaction could influence the effect that NFC has in the adherence to transphobic attitudes. With that in mind, attachment was chosen as the developmental variable.

The development of attachment theory by Bowlby (1969) derived from the intention to explain the bonds formed between individuals, focusing first on the mother-child dyad. This formulation of attachment theory highlighted how the relationship between caregiver and child affected the child's development and their interaction with the world (Salcuni, 2015). Eventually, research done by Ainsworth and colleagues (1978) led to the distinction of different attachment styles: secure, anxious-resistant and anxious-avoidant.

As attachment theory began to expand beyond infancy, categorizations of attachment style were applied to adults. One of these, proposed by Hazan and Shaver (1987), is a model of secure, anxious/ambivalent or avoidant attachment style. However, there are debates over whether a dimensional or categorial approach to adult attachment is more adequate (Canavarro et al., 2006). Some measures, such as the Adult Attachment Scale (Collins & Read, 1990) use attachment dimension (anxiety,

dependence on others and comfort with closeness) scores to categorize individuals into attachment groups.

Attachment differences in adults have been studied in regard to other variables, such as NFC, which has been revealed to be associated with attachment (Mikulincer, 1997). People with an insecure attachment style tend to have higher levels of NFC, which affects their information processing, leading, for example, to a greater dependence on stereotypes and initial information that does not challenge pre-existing knowledge. Thus, they have, among others, a greater intolerance of ambiguity (Mikulincer, 1997).

Evidence also points to a relationship between attachment and various types of prejudice, with insecure individuals generally exhibiting higher levels of it (Carnelley & Boag, 2019). However, the mechanisms that lead to the adoption of prejudiced attitudes are different between avoidant and anxious individuals. The perception of something as a threat to the group to which these individuals belong (i.e., their ingroup) activates the attachment system. As Carnelley and Boag (2019) postulate, this leads to prejudice through distancing, in the case of avoidant people, and through fear, in the case of anxious people. Therefore, attachment security serves as a buffer against prejudice (Carnelley & Boag, 2019).

Although no studies were found that focused specifically on the relationship between attachment and transphobia, it is possible that, as this is a form of prejudice, a similar association might be found. Additionally, it might be possible that attachment influences the relationship between NFC and transphobia. As dispositional NFC is a stable trait that influences, for example, how secure and insecure individuals perceive and react to ambiguous situations, with ambiguity being seen as a threat to the attachment system for insecure individuals (Mikulincer, 1997), it might be possible that this may lead to more attachment anxiety and less comfort with being close or depending on others in those situations. Since those high in NFC, such as insecure individuals, tend to perceive TGD individuals as ambiguous, perhaps they would be seen as a threat to the attachment system, leading to higher transphobia in insecure individuals. Therefore, it might be possible that NFC can somewhat impact attachment dimensions throughout development, which will, in turn affect adherence to transphobic attitudes and beliefs. In that case, attachment would impact the effect of NFC on transphobia.

Objectives

After the previous literature revision, four objectives were established: (a) explore the relationship between NFC and transphobia; (b) analyze the impact of attachment, including its dimensions, on this association; (c) analyze the relationship between attachment and NFC; and (d) analyze the relationship

between attachment and transphobia. These goals were established in order to gain a deeper understanding of how individual traits and developmental experiences may influence adherence to transphobic beliefs and attitudes.

However, no scales measuring NFC were found to be validated for the Portuguese population. Additionally, although there are more recent measures of transphobia validated for this population, most focus on attitudes only towards trans women and men, which excludes a significant part of the TGD population. Therefore, two additional objectives were added: (e) validate the short form of the Need for Closure scale (Roets and Van Hiel, 2011b) and (f) validate the revised version of the Genderism and Transphobia scale (GTS-R; Tebbe et al., 2014).

Hypotheses

As such, the main focus of this study was on exploring if attachment mediated the relationship between NFC and transphobia, and the associations between these variables. Therefore, the following hypotheses were formulated:

H1: Atachment is associated with NFC, with insecurity linked to higher NFC levels.

H2: Attachment is associated with transphobia, with insecurity linked to higher transphobia.

H3: The relationship between NFC and transphobia is mediated by attachment.

Method

Participants

The sample consisted of 209 students of Portuguese higher education institutions. Age ranged from 18 to 58 years (M = 25.89; SD = 8.57), with over half of the participants being under 23 years old (52.2%; n = 109). The majority of the sample was comprised of women, who made up 68.4% (n = 143) of it. Additionally, 27.3% (n = 57) identified as men, 2.4% (n = 5) as non-binary and 1.9% (n = 4) preferred not to share their gender identity.

Participants also identified whether they considered themselves to be a TGD individual. Most did not (95.2%, n = 199), with 4.3% (n = 9) identifying as such and 1.0% (n = 2) preferring not to divulge such information. Unlike what was done in other studies (Tebbe et al., 2014; Makwana et al., 2018), TGD participants were not excluded, as the focus was not exclusively on the transphobic attitudes held by non-TGD individuals. After all, even TGD individuals can hold beliefs and behaviors considered transphobic, even if they stem from internalized transphobia (Hendricks & Testa, 2012). Therefore, TGD

participants were included in the analyses, with some exceptions (for example, due to the low number of non-binary participants, they were excluded from analyses involving gender differences).

Additionally, the majority of the sample identified as heterosexual (71.3%; n = 149). Overall, 27.3% (n = 57) belonged to a sexual minority. The majority was bisexual, representing 15.8% (n = 33) of the whole sample. The rest identified as gay or lesbian (6.7%; n = 14), asexual (1%; n = 2) or as "other" (3.8%; n = 8). Finally, 1.4% (n = 3) of the participants preferred not to divulge their sexual orientation.

Measures

In this study, participants answered three different measures. These aimed to assess attachment (both categorically and dimensionally) and NFC and transphobia levels.

Short Form of the Need for Closure Scale (Roets & Van Hiel, 2011b)

The short form of the Need for Closure Scale (Roets & Van Hiel, 2011b) was created to provide a reduced and practical version of the Need for Closure Scale (Webster & Kruglanski, 1994), which allows the measurement of an individual's degree of NFC. This scale is one-dimensional, with higher values indicating a higher level of NFC. The score is obtained by adding the values of each of the 15 items, presented on a six-point Likert scale (from 1 – Completely Disagree to 6 – Completely Agree) (Roets & Van Hiel, 2011b).

Additionally, this scale is divided into the five facets that compose the NFC construct. It is possible to obtain the participant's score in each one by adding the values of their three respective items. These facets are Order, Predictability, Ambiguity, Decisiveness, and Closed-Mindedness (Roets & Van Hiel, 2011b). According to Webster and Kruglanski (1994), an individual high in NFC prefers to have order and structure in their life, which corresponds to the facet of Order. At the same time, they express discomfort with ambiguity, as indicated by the Ambiguity facet. Additionally, there is an urgency in obtaining closure, related to Decisiveness, which leads to confident judgments and choices. Knowledge obtained must also be secure, which translates into a need for Predictability. This desire for secure knowledge ultimately leads to Closed-Mindedness, as there is an unwillingness to have this knowledge challenged.

This scale is considered a suitable instrument for measuring an individual's NFC level (Roets & Van Hiel, 2011b). Since this scale was not validated for the Portuguese population, its adaptation was one of the study's objectives. The validated measure was titled *Escala Curta de Necessidade de Certeza Cognitiva* (ECNCC).

Escala de Vinculação do Adulto (Canavarro, 1997)

To assess attachment, the Escala de Vinculação do Adulto (EVA), validated for the Portuguese population by Canavarro (1997), was used. It corresponds to the Portuguese version of the revised Adult Attachment Scale (Collins, 1996) and is considered suitable for assessing adult attachment in the Portuguese population (Canavarro et al., 2006). Attachment style (secure, avoidant or anxious) is obtained through a cluster analysis. Based on 18 items, using a five-point Likert scale (1 – Not at all characteristic of me to 5 – Extremely characteristic of me), the EVA quantifies which style is predominant, through the participant's average score in its three dimensions, each comprising six items. Additionally, items 2, 7, 8, 13, 16, 17 and 18 need to be reversed.

Since the EVA is an adaptation of the Adult Attachment Scale, its dimensions are also Anxiety, Close and Depend (Collins & Read, 1990; Canavarro et al., 2006). Anxiety corresponds to the degree of anxiety in relation to being abandoned or rejected. Close refers to the individual's degree of comfort with closeness and intimacy. Depend is defined by the degree of trust placed on others and their availability when the individual considers it necessary (Collins & Read, 1990; Canavarro et al., 2006). For clarity purposes, throughout this study, Anxiety is referred to as attachment anxiety, Close as comfort with closeness and Depend as dependence on others, except on tables and figures.

Gender and Transphobia Scale – Revised (Tebbe et al., 2014)

The need to measure transphobic attitudes and the level of this prejudice led to the creation of several scales, including the Genderism and Transphobia Scale (GTS; Hill & Willoughby, 2005). However, due to psychometric limitations of the GTS, Tebbe et al. (2014), created a revised version, the GTS-R.

The GTS-R consists of 22 items, 17 of which correspond to the Genderism/Transphobia subscale, and five related to the Gender-Bashing subscale. The first subscale reflects two related components: negative emotional or affective responses towards TGD people (transphobia), and issues of negative evaluation of non-conforming gender expressions, as well as the perception of incongruence between gender and sex (genderism). The Gender-Bashing scale assesses an individual's propensity to engage in violent behavior, such as harassment and physical attacks, against TGD people (Tebbe et al., 2014).

Items are presented on a seven-point Likert scale (1 – Strongly disagree to 7 – Strongly agree). The score is then obtained by adding or averaging the total values, noting that items 2 and 12 need to be reversed. Higher scores indicate higher levels of transphobia (Tebbe et al., 2014).

The GTS-R can be considered a reliable instrument for measuring transphobia (Tebbe et al., 2014). Although the GTS has already been used in Portugal, no studies were found that used the GTS-R. Therefore, validating the GTS-R for the Portuguese population was another objective of this study. This adaptation was titled *Escala de Genderismo e Transfobia – Versão Revista* (EGT-R).

Procedures

As it was decided that the sample would be comprised of higher education students, participants were mainly recruited through the use of emails sent via institutional email. Additionally, the study was shared through social media. This way, it was possible to share a link that would direct any potential participants to the study on the Qualtrics survey platform.

Once they consented to participate in the study, participants were asked to complete the sociodemographic questionnaire and, in a random order, the three selected measures (with the final translation of ECNCC and the EGT-R having received prior feedback from other researchers fluent in both Portuguese and English). Responses were collected between December 2024 and February 2025.

Data Analysis Strategies

All analyses were conducted using the statistical software IBM SPSS Statistics for Windows, version 28, with the exception of the confirmatory factor analyses (CFAs), which required the use of the IBM AMOS v. 26 software. Additionally, macro PROCESS v. 4.2 for SPSS (Hayes, 2013) was used for mediation analysis.

Following the CFAs for both the ECNCC and the EGT-R, a cluster analysis was done to identify and categorize attachment styles. Subsequent analyses included the analysis of the descriptive statistics for each scale, correlation analyses, mean comparison tests and mediation analysis.

Results

As the study required the validation of two measures, the results of the CFAs are reported first. This is followed by the results of subsequent analyses, ending with the proposed mediation model. Therefore, the results reported refer to both the measure adaptations and the relationships between NFC, attachment, transphobia and certain sample characteristics.

ECNCC Confirmatory Factorial Analysis

The original model of the short form of the Need for Closure Scale consisted of a single factor and 15 items, with the errors of each facet being correlated (Roets & Van Hiel, 2011b). However, the

final model, whose adequate fit indices can be found in Table 1, required the removal of items 7 and 14 of the original scale, as the analysis revealed they did not contribute to the scale.

Table 1

Fit Indices for the Model Tested for the ECNCC

	χ^2	df	$\chi^{2/df}$	CFI	RMSEA	SRMR
Model Tested	115.359**	60	1.923	0.933	0.067	0.0540

** $p < .01$

Additionally, some of the errors had to be correlated, as shown in Table 2. This resulted in a final model of one factor and 13 items, with adequate item saturation values, which can also be seen in the aforementioned table. Furthermore, reliability indicators were also adequate, as the obtained Cronbach's alpha had a value of .83, similar to the original's scale value of .87 (Roets & Van Hiel, 2011b).

Table 2

Results of the Confirmatory Factorial Analysis for the ECNCC

	Standardized Regression Weight	Critical Ratio	Correlated Errors
Item 1	0.626	8.609***	–
Item 2	0.498	6.797***	–
Item 3	0.404	5.471***	12 and 13
Item 4	0.538	7.357***	–
Item 5	0.435	5.066***	15
Item 6	0.632	8.691***	–
Item 8	0.392	5.307***	9
Item 9	0.454	6.178***	8
Item 10	0.577	7.918***	–
Item 11	0.492	6.708***	–
Item 12	0.375	5.077***	3 and 13
Item 13	0.392	5.314***	3 and 12

Item 15	0.786	–	5

***$p < .001$

EGT-R Confirmatory Factorial Analysis

In the case of the EGT-R, two models were tested. In the original model by Tebbe and colleagues (2014), there were two factors, with 17 and 5 items, which corresponded to the Genderism/Transphobia and Gender-Bashing subscales, respectively. This corresponds to Model 1. However, the fit indicators were not adequate, which was influenced by the low variance in the items of the Gender-Bashing subscale. Thus, a new model (Model 2) was created, with a single factor and only the items from the Genderism/Transphobia subscale. After correlating the errors of items 14 and 16, it was found that the fit indices were adequate for this model. The results of both models are shown in Table 3.

Table 3

Fit Indices for the Models Tested for the EGT-R

	χ^2	df	$\chi^{2/df}$	CFI	RMSEA	SRMR
Model 1	732.173**	208	3.520	0.852	0.110	0.0673
Model 2	303.173**	118	2.569	0.934	0.087	0.0415

**$p < .01$

Regarding the saturation values of the items (see Table 4), these were adequate. Likewise, the internal consistency indicators were also adequate, with Cronbach's alpha being 0.96. This result is similar to the Cronbach's alpha Tebbe and colleagues (2014) obtained for their Genderism/Transphobia subscale, which had a value of .95. The authors also obtained Cronbach's alphas of .94 for their full scale and .86 for the Gender-Bashing subscales.

Table 4

Results of the Confirmatory Factorial Analysis for the EGT-R

	Standardized Regression Weight	Critical Ratio
Item 1	0.706	–

Item 2 (R)	0.685	9.674***
Item 3	0.722	10.189***
Item 4	0.885	12.477***
Item 5	0.782	11.042***
Item 6	0.767	10.824***
Item 7	0.854	12.042***
Item 8	0.723	10.207***
Item 9	0.853	12.026***
Item 10	0.567	8.012***
Item 11	0.798	11.257***
Item 12 (R)	0.549	7.763***
Item 13	0.777	10.967***
Item 14	0.779	10.994***
Item 15	0.731	10.327***
Item 16	0.765	10.791***
Item 17	0.877	12.369***

Note. R indicates reverse items.

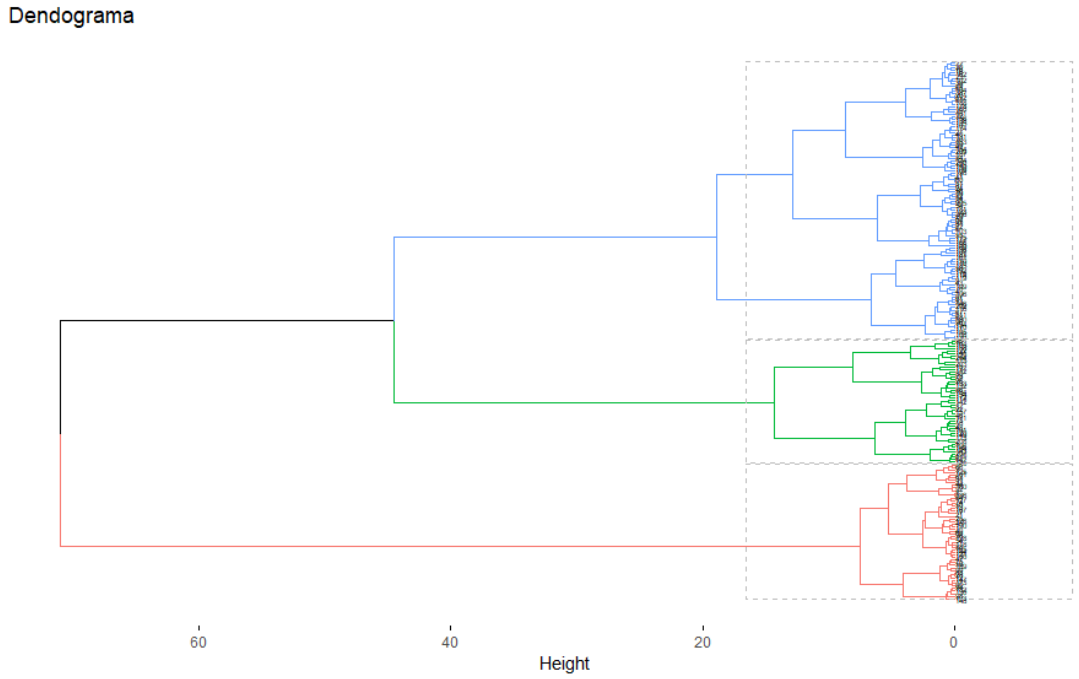
***$p < .001$.

Attachment Style Cluster Analysis

In order to group the participants according to their attachment style, a hierarchical cluster analysis was carried out, using the Ward method, as well as the Euclidean distance as a measure of dissimilarity. Taking into account the dendrogram obtained (see Figure 1), as well as the results obtained by Canavarro and colleagues (2006), the existence of 3 clusters was considered.

Figure 1

Dendrogram for the EVA Cluster Analysis



Additionally, a non-hierarchical K-means cluster analysis was used to group participants into these clusters and identify which ones should be retained. A final solution of 3 clusters was obtained, corresponding to the secure, avoidant and anxious attachment styles, as observed in Table 5.

Table 5

Means of the EVA's Dimensions for the Attachment Styles Obtained in Cluster Analysis

	Clusters/Attachment Styles			
EVA Dimensions	Anxious (n = 39)	Avoidant (n = 94)	Secure (n = 76)	F
Anxiety	4.2	3	1.8	370.469***
Close	2.9	3.3	3.8	56.267***
Depend	2.5	3.1	3.4	35.732***

***p < .001

As described by Canavarro and colleagues (2006), based on Hazan and Shaver's (1987) model, the secure group did not have a particular fear of being abandoned, felt comfortable with being close to others and was capable of depending on them. In comparison, the anxious group demonstrated a higher fear of abandonment and was neither comfortable with closeness nor able to depend on others. The same was present in the avoidant group, except for the fear of abandonment.

The results revealed that the majority of the sample, 44.9%, was avoidant. Secure attachment represented 34.6%, while 18.7% presented an anxious attachment style. Although the percentages are close to those obtained by Canavarro and colleagues (2006), secure participants were not the majority, as is the norm. Another factor of dissimilarity with Canavarro and colleagues' (2006) study is the Cronbach's alpha value obtained, which in this study was 0.47, while the authors obtained a value of .81. However, the values for the dimensions of attachment anxiety, comfort with closeness and dependence on others were adequate (0.89, 0.65 and 0.65, respectively) and similar to those obtained in the aforementioned study (.84, .67 and .54, respectively). Therefore, the reliability of the EVA for this study can be considered adequate.

Descriptive Statistics of NFC, Transphobia and Attachment

Following the CFA and the cluster analysis, a descriptive analysis was done. As shown in Table 6, the mean value of attachment anxiety in the sample is smaller when compared to comfort with closeness and dependence on others.

Table 6

Descriptive Statistics for NFC, Transphobia and Attachment Dimensions

	N	Min	Max	Mean	*SD*	Skewness	Kurtosis
NFC	209	23	72	52.49	9.52	-0.35	0.03
Transphobia	209	17	119	33.49	20.99	1.66	2.44
Attachment							
Anxiety	209	1	4.8	2.79	0.99	0.27	-0.65
Close	209	1.8	4.7	3.41	0.59	-0.09	-0.41
Depend	209	1.3	4.8	3.11	0.64	-0.21	-0.48

Associations between NFC, Attachment and Transphobia

To assess the relationship between NFC, attachment dimensions and transphobia, Pearson's correlation was used. Table 7 shows all attachment dimensions are significantly correlated with each other and with NFC. Attachment anxiety is negatively correlated with comfort with closeness and dependence on others, which are positively correlated with one another. In relation to NFC, only the correlation with attachment anxiety is positive, with the other dimensions of attachment being negatively correlated with NFC. Finally, only attachment anxiety was significantly correlated with transphobia, having a negative correlation.

Table 7

Pearson Correlations Between NFC, Transphobia and Attachment Dimensions

	1	2	3	4	5
1. NFC	–				
2. Transphobia	-.073	–			
3. Anxiety	.359**	-.276**	–		
4. Close	-.329**	.056	-.457**	–	
5. Depend	-.262**	.125	-.346**	.432**	–

** $p < .01$

To assess the existence of differences in the means between the different attachment styles in the NFC and transphobia measures, the One-Way ANOVA procedure was used. Participants with an anxious attachment style had higher levels of NFC (M = 55.95; SD = 10.81), which was followed by avoidant (M = 54.84; SD = 7.77) and secure individuals (M = 47.8; SD = 1.04). Meanwhile, those with a secure attachment style had higher levels of transphobia (M = 39.21; SD = 24.46), followed by avoidant (M = 31.56; SD = 18.75) and anxious individuals (M = 26.97; SD = 15.95).

The results revealed the existence of a significant difference between at least two attachment styles for NFC (F(2,206) = 16.878, $p < .001$) and for transphobia (F(2,206) = 5.304, $p < .05$). Therefore, the Tuckey HSD post hoc test was used to verify which groups presented these differences. Differences were significant for both NFC ($p < .001$) and transphobia ($p < .05$) between the secure and anxious attachment groups, and between the secure and avoidant attachment groups.

Considering these differences, subsequent analyses focused on attachment dimensions rather than styles. This was done to verify whether more subtle differences could be found among participants when analyzed along a continuum, rather than in categories.

Impact of Age, Gender and Sexual Orientation

Given the focus on development, it was considered relevant to verify whether age and gender would have any impact on the relationships between the variables under study. The sexual orientation of participants was also considered, as individuals belonging to sexual minorities (referred to as LGB+ individuals in this study) tend to report more favorable attitudes towards TGD people (Hatch et al., 2022).

The use of Pearson's correlation revealed that age was only significantly associated with attachment anxiety, negatively ($r(209) = -.073$, $p = .001$). However, mean comparison tests for gender and sexual orientation revealed other significant differences.

Table 8 shows the results obtained for the analysis by gender. In this case, only women and men were considered, as the number of non-binary participants was low. Those who preferred not to reveal their gender identity were also not considered. Thus, the total sample for this analysis was 200 participants, with significant differences between women and men in all variables, except for dependence on others. Notably, men scored higher on all variables except NFC and attachment anxiety.

Table 8

Mean Differences Between Genders in the Measured Variables

	Women ($n = 143$)		Men ($n = 57$)		$t(198)$
	Mean	*SD*	Mean	*SD*	
NFC	53.87	9.44	48.82	9.29	3.429***
Transphobia	28.34	16.79	48.21	24.22	-5.677***
Anxiety	2.89	0.95	2.54	1	2.300*
Close	3.34	0.59	3.59	0.51	-2.806*
Depend	3.08	0.62	3.18	0.67	-1.015

*$p < .05$. ***$p < .001$

For the analysis with sexual orientation, two groups were considered: heterosexual and LGB+ participants. Those who did not disclose their sexual orientation were excluded, leading to a total sample

of 206. The groups only differed significantly in transphobia levels and attachment anxiety (see Table 9). Heterosexual participants only had lower NFC and attachment anxiety.

Table 9

Mean Differences Between Heterosexual and LGB+ Participants in the Measured Variables

	Heterosexuals (n = 149)		LGB+ (n = 57)		t(204)
	Mean	*SD*	Mean	*SD*	
NFC	52.19	9.131	52.84	10.59	-0.44
Transphobia	38.52	22.45	20.33	5.84	9.112***
Anxiety	2.63	0.95	3.15	0.95	-3.523***
Close	3.46	0.56	3.31	0.67	1.651
Depend	3.15	0.62	3.01	0.67	1.440

***p < .001

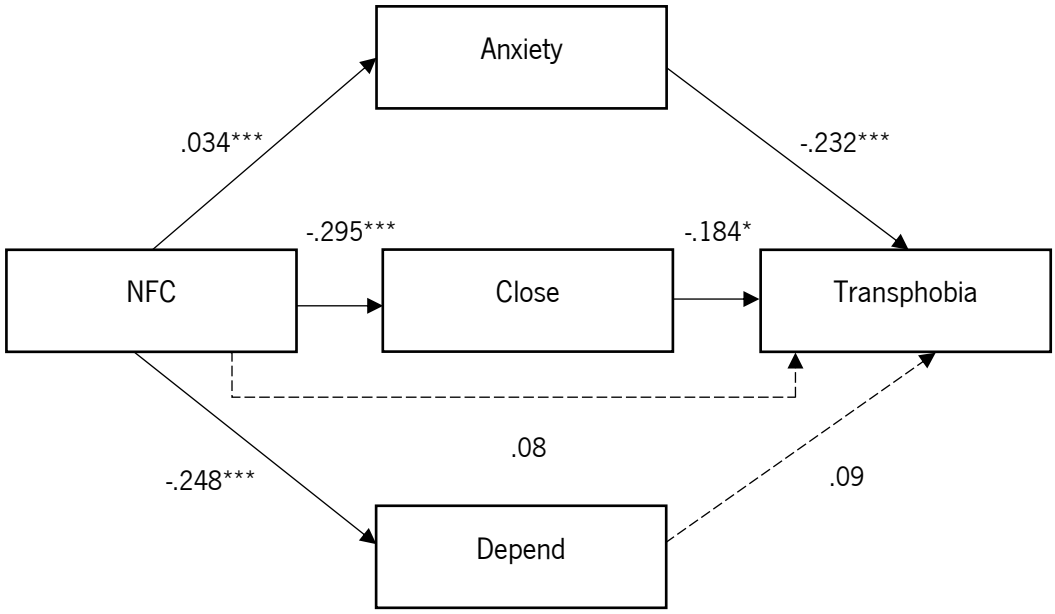
Mediation Analysis – Do Attachment Dimensions Mediate the Link Between NFC and Transphobia?

To verify whether attachment dimensions mediated the relationship between NFC and transphobia, a mediation analysis was conducted using ordinary least squares path analysis. In this case, the predictor was NFC, the mediators were the dimensions of attachment, and transphobia was the outcome. Additionally, gender and sexual orientation were controlled. Therefore, non-binary participants and those who did not disclose their gender identity or sexual orientation were excluded from this analysis, resulting in a final sample of 197 participants.

As shown in Figure 2 and Table 10, the results show support for the hypothesis that attachment mediates the relationship between NFC and Transphobia, namely through attachment anxiety and comfort with closeness, when controlling for gender and sexual orientation. Thus, it appears that NFC is positively associated with attachment anxiety and negatively associated with comfort with proximity. In turn, attachment anxiety and comfort with closeness are both negatively associated with transphobia.

Figure 2

Mediation Model Results for the Association Between NFC and Transphobia Through Attachment Dimensions and Controlling for Gender and Sexual Orientation



Note. Significant associations are shown through solid paths, while dashed paths indicate non-significant associations. Gender and Sexual Orientation were controlled by being added as covariates. The values shown correspond to the standardized regression coefficients (β).

* $p < .05$. *** $p < .001$

Table 10

Association between NFC, Transphobia and Attachment Dimensions, Controlling for Gender and Sexual Orientation

	M_1 (Anxiety)				M_2 (Close)				M_3 (Depend)				Y (Transphobia)			
Antecedent	B	SE	p	β	B	SE	p	β	B	SE	p	β	B	SE	p	β
X (NFC)	0.034	.007	0	.339	-0.018	.276	0	-.295	-0.016	.005	.001	-.248	0.175	.147	.236	.080
M_1 (Anxiety)													-5.080	1.571	.001	-.232
M_2 (Close)													-6.703	2.618	.011	-.184
M_3 (Depend)													2.987	2.257	.187	.090
	R^2 = .0189				R^2 = .125				R^2 = .070				R^2 = .315			
	F(3,193) = 15, p = 0				F(3,193) = , p = 0				F(3,193) = , p = 0.003				F(6,190) = 14.586, p = 0			

Thus, the analysis suggests that these two variables mediate the association between NFC and transphobia. In the case of attachment anxiety, the bootstrap confidence interval (based on 5,000 bootstrap resamples) for the indirect effect (β = -.079) was entirely below zero (-0.140 to -0.027), which indicates that the indirect effect of NFC on transphobia is significant when attachment anxiety is a mediator. The same can be said when the mediator is comfort with closeness, as the bootstrap confidence interval for the indirect effect (β = . 054) was entirely above zero (0.013 to 0.112).

Discussion

The main aim of the present study was to explore whether attachment affected the relationship between NFC and transphobia. Additionally, it intended to analyze the relationship between attachment and NFC, as well as the possible association between attachment and transphobia.

Validation of the proposed measures was accomplished, along with the finding that attachment mediates the indirect association between NFC and transphobia (although not exactly as predicted). Possible reasons for such are discussed in the following section, along with limitations and future suggestions.

Validation of the ECNCC and the EGT-R

One of the aims of this study was the validation of the short form of the Need for Closure Scale (Roets & Van Hiel, 2011b) and the GTS-R (Tebbe et al., 2014) for the Portuguese population. Therefore, a CFA was done for both measures.

In the case of the ECNCC, the one-factor structure was maintained, with some modifications to the original structure. As for the EGT-R, the items measuring gender-bashing had to be removed, as their variance was extremely low. This can be explained by the violent nature of these items, as it is possible to hold transphobic attitudes but not commit the actions described. Both scales were found to be adequate measures of NFC and transphobia, respectively, in the Portuguese population.

NFC, Transphobia and Differences in Attachment

The analyses of the relationships between NFC, transphobia and attachment revealed how these variables are connected. Overall, attachment differences were linked to differences in NFC and transphobia levels. In the case of the former, the results indicate that higher NFC is associated with attachment insecurity, which translates into more attachment anxiety and less comfort with closeness and dependence on others. The results are in accordance with Mikulincer's (1997) and H1. As such,

these findings demonstrate that attachment insecurity is associated with an intolerance of unpredictability and ambiguity, a preference for order, a need for quick and secure judgements and less cognitive flexibility, which are the characteristics of higher NFC levels.

As for transphobia, an association with attachment was found, as expected in H2, although not as it was predicted. From a categorical perspective, secure individuals had the highest transphobia levels. When looking through a dimensional lens, the results revealed that more attachment anxiety is related to less transphobia and that, when not controlling for gender and sexual orientation, this is the only attachment dimension that influences the level of this prejudice in the mediation analysis. Since no studies linking attachment to transphobia were found, there seem to be no precedents for this finding. As such, possible explanations from both a categorical and a dimensional perspective are discussed.

When attachment styles are taken into account, secure attachment tends to be related to less prejudice, with insecurity being linked to higher levels of both prejudice and discrimination (Carnelley & Boag, 2019). The same cannot be verified in this study. However, although attachment security is related to reduced levels of prejudice, it does not prevent individuals from holding prejudiced views (Mikulincer, 1997). Additionally, there appears to be an indication that secure attachment leads individuals to be more open about their prejudiced views and attitudes (Carnelley & Boag, 2019). Perhaps these individuals were more willing to share their transphobic views. Alternatively, it might be possible that beliefs about interactions and relationships with TGD individuals could have influenced their responses (as both the EVA and the EGT-R contained themes of interaction and relationships).

For example, generally, secure individuals tend to seek partners who are also secure (Holmes & Johnson, 2009). Considering the pervasive negative views about TGD people in Portugal, such as the pathologization of TGD identities (Marques, 2022) and the discrimination felt by couples with at least one TGD member (Filipe & Ferreira, 2024), perhaps secure individuals would assume that such a relationship could not bring about the attachment security that they seek. Therefore, these participants could hold these society-wide beliefs, which end up permeating their vision of interactions and relationships with TGD individuals, leading to higher levels of transphobia.

As for attachment dimensions, an initial assumption could be that attachment security is linked to transphobia simply due to lower attachment anxiety. However, when considering the results obtained from the analyses of sample characteristics and of mediation, the connection between attachment dimensions and transphobia becomes more complex. Therefore, differences in certain sample characteristics are discussed in the following section. Additionally, differences in sample characteristics,

and data retrieval methods, cultural differences and time between studies could also indicate why there was no significant correlation between NFC and Transphobia, when they were found to be positively associated in previous research (Makwana et al., 2018; Tebbe et al., 2014).

Differences in Age, Gender and Sexual Orientation

As results revealed that age, gender and sexual orientation were related to differences in certain variables, it is important to consider these findings in the context of this study. Regarding age, it should be noted that the sample had a high representation of young adults. In fact, more than half was under 23 years old.

Although attachment is fairly stable, attachment patterns can adapt over time (Bowlby, 1988). For example, young adults tend to experience more attachment anxiety than their older counterparts (Sagone et al., 2023), with attachment avoidance being more present in older adults (Chopik et al., 2013). However, a higher level of avoidance also accompanies changes in young adulthood, as the need for more autonomy and independence increases (Chopik et al., 2013). With that in mind, perhaps the high prevalence of avoidant individuals, which is not usual, could be due to these higher levels of attachment anxiety and avoidance (Chopik et al., 2013).

In the case of gender, men and women did not differ only in dependence on others, with men having lower scores in all variables, except for transphobia and dependence on others. These results were expected, as they were observed in previous studies (Chopik et al., 2013; Collins & Read, 1990; Makwana et al., 2018). Therefore, gender was added as a covariate in the mediation model, to control for any variability in transphobia.

Sexual orientation was also controlled in mediation, as there were significant differences between heterosexual and LGB+ participants in attachment anxiety and transphobia, with heterosexual individuals having higher scores in all study measures except NFC and attachment anxiety. These differences were expected, as, although non-heterosexual sexual orientations are not inherently linked to insecure attachment (Ridge & Feeney, 1998), stigma and discrimination can negatively impact the establishment and maintenance of secure relationships (Cook & Calebs, 2016; Filipe e Ferreira, 2024), leading to higher levels of attachment anxiety (Nematy & Oloomi, 2016), for example. Furthermore, LGB+ people tend to have more positive attitudes towards TGD individuals (Hatch et al., 2022).

Therefore, the results indicate that certain groups in the sample (women and LGB+ individuals) tend to have more attachment anxiety and less transphobia. Even if they are not the reason for the

relationship between these two variables, gender and sexual orientation seem to partially explain why portions of the sample display this tendency.

Attachment Dimensions Mediate the Relationship Between NFC and Transphobia

The main aim of this study was to assess whether attachment mediated the effect of NFC on transphobia. With the use of attachment dimensions, it was possible to evaluate how each of these interacted with both variables and the effect on their association. In line with H3, the results indicate that attachment mediates the relationship between NFC and transphobia. However, this effect differs among the three dimensions considered. In the case of dependence on others, this dimension has no effect.

Results indicate that individuals with higher NFC levels have more attachment anxiety, which leads to less prejudice against TGD individuals. As stated in the prior section, this was unexpected, as an anxious attachment, where attachment anxiety is higher, is linked to prejudice (Carnelley & Boag, 2019). It should be noted that, since no studies were found to associate attachment with transphobia, there seems to be no prior explanation of why attachment anxiety leads to more transphobia, when it has been linked to greater levels of prejudice. Perhaps unstudied variables could be influencing this association. For example, higher empathy and prior positive intergroup contact can lead to less prejudice, even among insecure individuals (Carnelley & Boag, 2019). As these were not studied, the influence of such variables cannot be verified in this study. However, perhaps a deeper look at how attachment anxiety is characterized might elucidate this finding.

Higher attachment anxiety is connected to an intense fear of being rejected, while desiring close connections with others (Kural & Kovács, 2022). It leads to hyperactivated attachment systems focusing on potential threats, which has been postulated to lead to more prejudice due to fear and a desire to protect the self (Carnelley & Boag, 2019). Additionally, insecure attachment has been linked to lower empathy (Carnelley & Boag, 2019). However, research into how attachment anxiety specifically relates to both cognitive and affective aspects of empathy has wielded mixed results (Peng et al., 2023). Some studies indicate that attachment anxiety can be positively related to affective empathy (Kural & Kovács, 2022; Peng et al., 2023), which is both related to the capacity to feel someone's distress and respond accordingly, and personal distress (i.e., self-focused discomfort when witnessing someone's suffering). Attachment anxiety seems to be strongly connected to the latter concept, with the pursuit of closeness leading to difficulties in distinguishing one's own suffering from that of others (Kural & Kovács, 2022).

Therefore, considering the profound fear of rejection these individuals have and the way transphobia can be seen as a rejection of TGD individuals (an attitude present on most EGT-R items), perhaps these lower transphobia levels are not necessarily related to more sympathy and a lack of prejudice towards TGD individuals specifically. Instead, they could potentially indicate that those with higher attachment anxiety, who, due to their fear, are consistently on the lookout for potential rejection and experience more personal distress, could display more positive attitudes towards those who are perceived as being rejected, which, in the case of this study, were TGD individuals. Therefore, this attitude would not be exclusively reserved to the TGD population, but instead to anyone who is seen as being rejected, even if, generally, a higher level of NFC would lead to, for example, TGD individuals being perceived as ambiguous, and therefore a threat to the attachment system. In this case, perhaps the empathy felt (fueled by their fear of rejection) is stronger than the intolerance of ambiguity. However, it is important to note that this is simply a theory drawn from previous research, unrelated to transphobia, and should not be understood as a definitive conclusion of this study. As such, further research into this matter is needed to verify whether such an effect can be found.

Finally, regarding comfort with closeness, mediation worked as expected. Individuals with higher NFC levels are less comfortable with closeness with others, which leads to higher transphobia levels. This lack of comfort can lead to the avoidance of those who are seen as a threat to the attachment system (Carnelley & Boag, 2019; Mikulincer, 1997). Since higher levels of NFC lead to ambiguity being perceived as a threat and TGD individuals being seen as ambiguous, those with less comfort with proximity would tend to avoid this population, leading to more transphobia.

Limitations and Future Suggestions

While this study proved that attachment dimensions mediate the relationship between NFC and transphobia, there are still some limitations. As the sample consisted only of higher education students, over half of which were women and under 23 years old, this limits the generalizability of the results to the broader Portuguese population. As such, verifying the replicability of these results with a more generalized sample is a suggestion for future research.

Additionally, the use of an online measure of transphobia could implicate some degree of social desirability in participant's answers (Makwana et al., 2018). Furthermore, while measures such as the EGT-R can be useful in research dealing with prejudice against TGD people, they also make it harder to evaluate expressions of transphobia that are not defined in the measure (Aguirre-Sánchez-Beato, 2020).

As such, a focus on observable behavior or implicit transphobic attitudes is an alternative for future studies (Makwana et al., 2018).

Given that NFC is also specifically associated with prejudice against non-binary and gender non-conforming individuals (Morgenroth et al., 2021), future research could investigate how attachment dimensions affect the association between NFC and attitudes towards this group. Furthermore, this investigation could give insights into whether transphobic attitudes differ between them and TGD individuals who are seen as gender-conforming, as generally the former group tends to be seen less favorably (Makwana et al., 2018). Potentially, it could allow for the study of the impact of intolerance of ambiguity, a facet of NFC, which leads to cognitive differences between secure and insecure individuals, and is associated with transphobia (Makwana et al., 2018).

As no studies were found that explored the association between attachment and transphobia, future research could focus on the relationship between these two, and how other variables affect this association, especially in the case of attachment anxiety. This could provide a greater understanding of the connection between secure attachment and transphobia, as, for example, while secure attachment is linked to lower levels of prejudice, this is not the case when low empathy and trust are present, along with higher levels of social dominance orientation (Carnelley & Boag, 2019), which is also a mediator between NFC and transphobia (Makwana et al., 2018). More importantly, future studies could attempt to verify whether components of affective empathy can influence attitudes and reactions of individuals high in attachment anxiety in relation to TGD individuals. Additionally, it might be useful to research if this association differs between groups (for example, among different gender identities).

Taking into account different attachment patterns, these results could potentially inform how efforts to create awareness and prevent transphobia can more effectively reach transphobic individuals. One example is the implementation of positive contact with the outgroup, in this case TGD individuals, as is suggested by Makwana and colleagues (2018). It has been demonstrated that positive intergroup contact has a strong association with reduced prejudice levels in individuals with high NFC levels (Dhont et al., 2011). However, this contact is avoided by those who are less comfortable with closeness (who are high on NFC) and this avoidance aggravates their prejudice (Carnelley & Boag, 2019),. With that in mind, perhaps future interventions could focus on how to foster positive intergroup interactions, in the hopes of reducing transphobia, by considering the attachment differences in individuals high in NFC.

Conclusion

Research has demonstrated how certain individual traits are linked to prejudice towards TGD individuals, namely in regard to the cognitive need for secure and certain answers, accompanied by an intolerance of ambiguity. The present study highlights how this relationship operates within a developmental perspective, namely in regard to attachment, which influences how individuals act and think, particularly towards relationships.

Overall, it can be concluded that those high in NFC, through individual differences in attachment dimensions, will have varied levels of transphobia. As both individual traits and developmental experiences impact attitudes and beliefs towards the TGD population, considering both these factors can be beneficial for the planning of interventions that aim to reduce and prevent the development of transphobia.

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