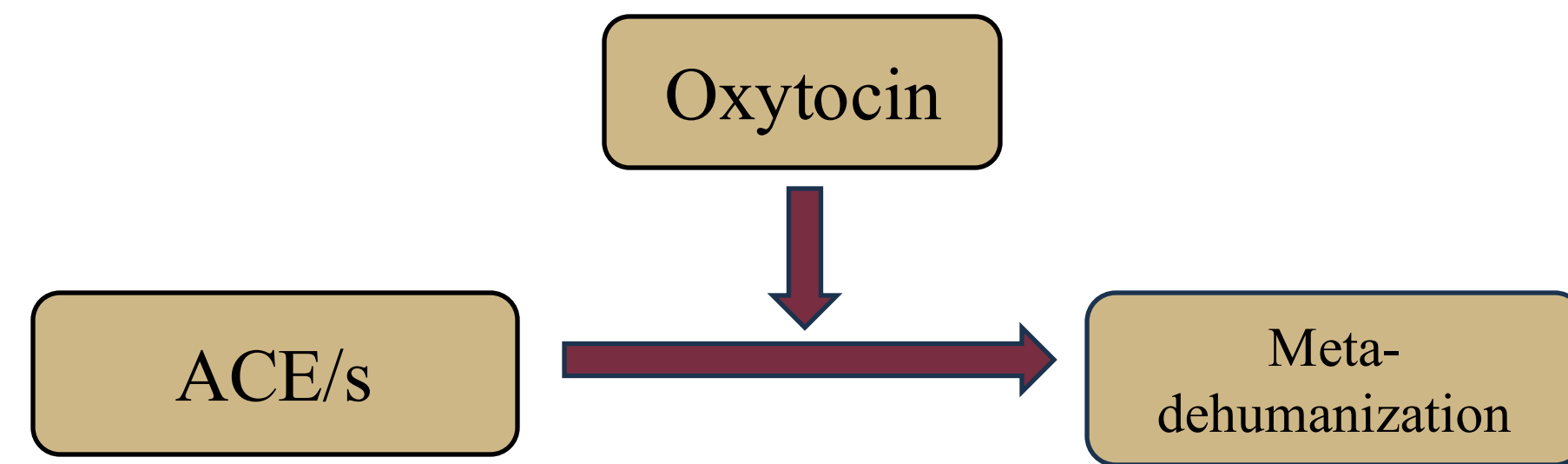


Abstract

Early trauma may increase feelings of meta-dehumanization, the belief that others view an individual as less than human. Neurobiological correlates may aid in defining this primary relationship. One such hormone may be oxytocin, a neuropeptide known to regulate social connectedness. We examined the relationship between two forms of meta-dehumanization (i.e. animalistic and mechanistic) and adverse childhood experiences with oxytocin levels acting as a moderator. It was expected that those who reported the highest levels of meta-dehumanization would have lower levels of oxytocin and a higher number of early traumatic events. Participants (N=74) completed self-report measures and fasted blood draws at baseline. Contrary to our hypothesis, the interaction between adverse childhood experiences and oxytocin was not a significant correlate of mechanistic (b=0.02, p=0.793) or animalistic (b=0.08, p=0.191) meta-dehumanization. Importantly, the sample was underpowered; thus, these results were preliminary in nature.



Background

- Meta-dehumanization has been described as the belief that others view an individual as less than human, and could be related to early life trauma, through various avenues such as through interpersonal relationships or even just interacting with the world (Jenkins et al., 2023)
- Oxytocin, a neuropeptide related to social connectedness, has been shown to be lower at a baseline in individuals who have a suicide attempt history (Chu et al., 2020)

Methods

- Prospective participants (N = 74) completed an eligibility survey to account for confounding variables (e.g. psychiatric disorders) and to categorize them appropriately (low, medium, and high SDS*).
 - Participants came in for two study visits, about 1 month apart, each of which lasting for 1 hour. Biological females were eligible only on days 5-12 of their cycle (days 3-18 if on a hormonal contraceptive).
 - In both visits, after being consented, participants had their blood drawn and then completed a self-report questionnaire (see results for measures).
 - The 2 mL of blood collected per visit was centrifuged and the plasma was collected and stored at -80°C.
 - Oxytocin levels of both timepoints 1 and 2 were obtained using an ELISA kit and later compared and tested using statistical analyses.
- *SDS: Zung Self-Rating Depression Scale

Measures

ACE Scale

Instructions: Below is a list of 10 categories of Adverse Childhood Experiences (ACEs). From the list below, please place a checkmark next to each ACE category that you experienced prior to your 18th birthday. Then, please add up the number of categories of ACEs you experienced and put the total number at the bottom.

- Did you feel that you didn't have enough to eat, had to wear dirty clothes, or had no one to protect or take care of you?
- Did you lose a parent through divorce, abandonment, death, or other reason?
- Did you live with anyone who was depressed, mentally ill, or attempted suicide?
- Did you live with anyone who had a problem with drinking or using drugs, including prescription drugs?
- Did your parents or adults in your home ever hit, punch, beat, or threaten to harm each other?
- Did you live with anyone who went to jail or prison?
- Did a parent or adult in your home ever swear at you, insult you, or put you down?
- Did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way?
- Did you feel that no one in your family loved you or thought you were special?
- Did you experience unwanted sexual contact (such as fondling or oral/anal/vaginal intercourse/penetration)?

Meta-Dehumanization Scale (MDS)

Instructions: Please read each item below and indicate to what extent you feel the statement describes you. Rate each statement on the scale below.

Agreement with the items was measured using a 7-point Likert-type scale (from 'Completely disagree' to 'Completely agree'). Answers were averaged to compute a mean score ranging from 1 to 7. Mix items together.

- Animalistic**
People believe I am less evolved than most other humans
Other people socially isolate me because I am less than human
Others are disgusted by my lack of humanness
People think I am a monster
- Mechanistic**
Other people view me as a number
People think I am mechanical and cold, like a robot
Other people view me as an inanimate object
People consider me to be an automaton (e.g., a mechanical device imitating a human)

*Verminization was not investigated as it has not been validated in the literature yet.

Figure 1

Demographics	
Age (M, SD)	21.57 (4.19)
Gender	
Man (n, %)	33 (30.6)
Woman (n, %)	65 (60.2)
Non-Binary (n, %)	7 (6.5)
Prefer to self-describe (n, %)	3 (2.8)
Transgender	
No (n, %)	94 (87.0)
Yes (n, %)	13 (12.0)
Prefer not to answer (n, %)	1 (0.9)
Race	
American Indian/Alaska Native (n, %)	1 (0.9)
Asian (n, %)	19 (17.6)
Black/African American (n, %)	6 (5.6)
White (n, %)	76 (70.4)
Biracial/Multiracial (n, %)	5 (4.6)
Other (n, %)	1 (0.9)
Ethnicity	
Hispanic/Latinx (n, %)	21 (19.4)
Not Hispanic/Latinx (n, %)	87 (80.6)
Sexual Orientation	
Heterosexual (n, %)	59 (54.6)
Gay/Lesbian (n, %)	6 (5.6)
Bisexual (n, %)	32 (29.6)
Asexual (n, %)	2 (1.9)
Pansexual (n, %)	5 (4.6)
Demisexual (n, %)	2 (1.9)
Prefer not to respond (n, %)	2 (1.9)
Income	
Low Income (n, %)	9 (8.3)
Low-middle Income (n, %)	22 (20.4)
Middle Income (n, %)	42 (38.9)
Middle-upper Income (n, %)	30 (27.8)
Upper income (n, %)	5 (4.6)

Note: Demographics pertain to the 108 participants who completed the questionnaires. The oxytocin of 74 of these individuals was collected and analyzed.

Results

Figure 2

Descriptive Statistics				
	N	Range	Mean	SD
Animalistic MDS T1	107	4-28	8.31	6.38
Mechanistic MDS T1	108	4-26	8.79	6.18
ACE T1	107	0-10	3.16	2.43
Oxytocin Levels T1	74	50.19-9888	2151.61	2210.76

Note: SD-Standard Deviation; MDS-Meta-Dehumanization Scale; ACE-Adverse Childhood Experiences Scale

Figure 3

Regression analysis of the relationship between ACE and each subset of meta-dehumanization moderated through cross-sectional oxytocin levels

Moderation, N = 74					
	β	SE	95% CI	T	p
Animalistic					
Oxytocin Levels x ACE	0.02	0.06	[-0.10, 0.13]	0.26	0.793
Mechanistic					
Oxytocin Levels x ACE	0.08	0.06	[-0.04, 0.19]	1.32	0.191

Note: β -standardized coefficient beta; CI-confidence interval

Exploratory

Figure 4

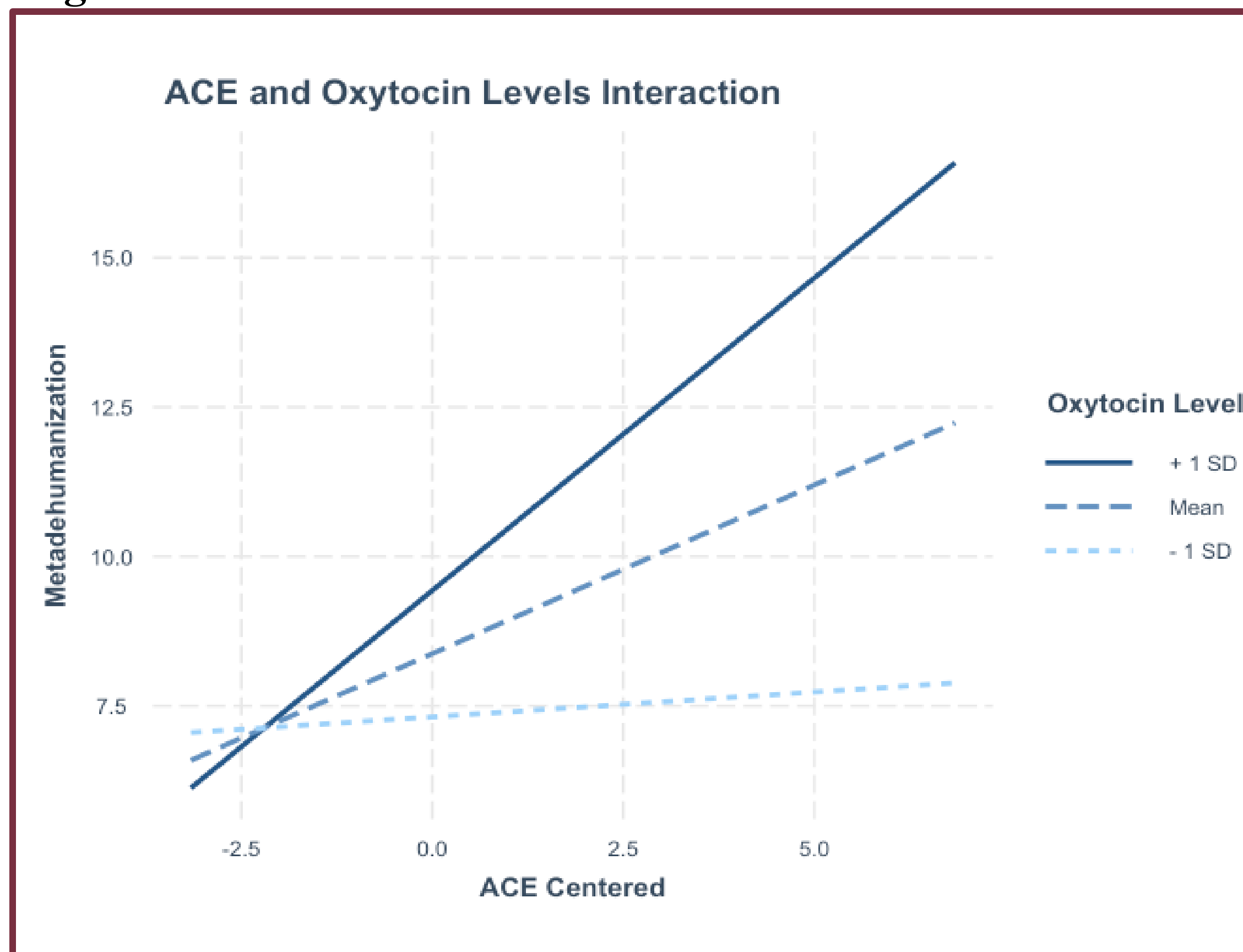


Figure 5

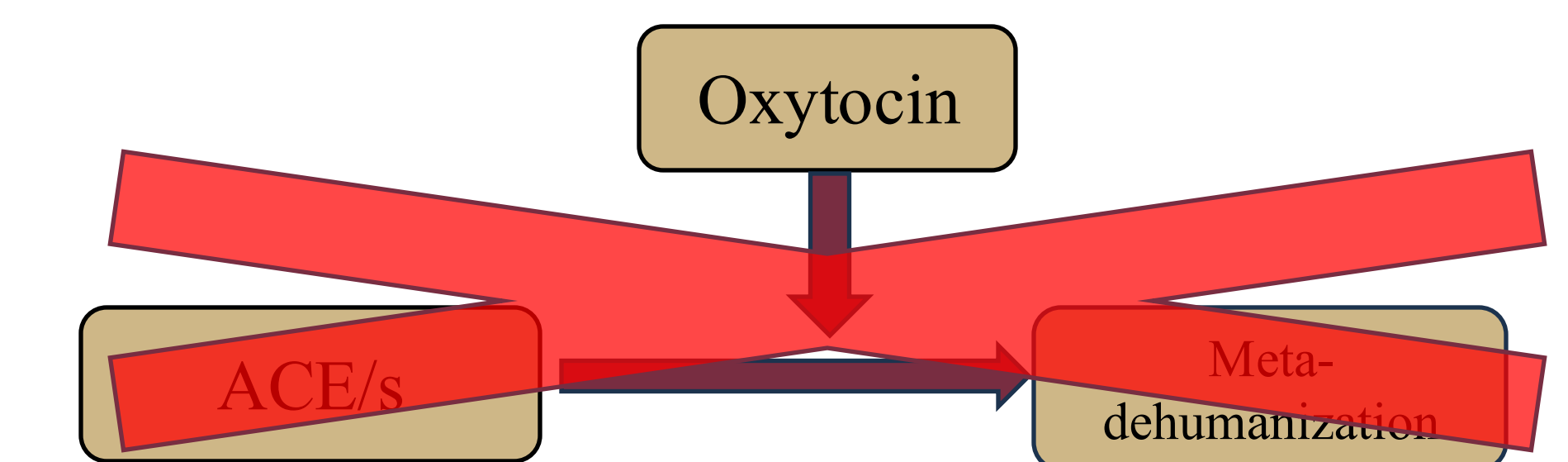
ACE centered regression analysis of the relationship between ACE and mechanistic meta-dehumanization moderated through cross-sectional oxytocin levels

Moderation, N = 74				
	b	SE	T	p
-1 SD				
Oxytocin Levels x ACE	0.08	0.44	0.19	0.852
Mean				
Oxytocin Levels x ACE	0.56	0.29	1.95	0.055
+1 SD				
Oxytocin Levels x ACE	1.05	0.49	2.16	0.035

Note: b-unstandardized coefficient beta

Discussion/Implications

- These data do not show significant correlations, showing oxytocin does not play a role in moderating the relationship between adverse childhood experiences and animalistic or mechanistic meta-dehumanization.
- There is implication of possible significance with a larger, more appropriate sample.



Future Directions

- As aforementioned, the power of this study was limited and a larger, more appropriate sample indicated some significance (i.e. 1 SD above the mean).
- It would be fruitful to examine this relationship with changes to the sample size and in a different population, as ours was mostly limited to college aged students in Tallahassee, Florida.
- Given this, future research should investigate these correlations with a larger sample to confirm either the existence or lack of a relationship between the given factors.

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