

Hormonal Influences on Violent Attitudes: The Role of Testosterone

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Testosterone has long been implicated in aggression, but human research has shown that these effects are smaller and more complex than often assumed (Geniole et al., 2020; Mehta et al., 2013). Specifically, testosterone is weakly associated with aggression in humans overall, but it has been found to increase aggression for people who are dominant, lacking in self-control, and have an independent (rather than interdependent) self-construal (Carré et al., 2017; Geniole et al., 2019; Welker et al., 2017). Though there has been substantial research on testosterone and aggressive behaviour, relatively little is known about its association with violent attitudes. Violent attitudes are judgments about whether violence is positive or negative. This is a notable research gap, as attitudes are considered an important precursor to behaviour in theoretical accounts of both general behaviour (e.g., theory of planned behaviour; Ajzen, 1991) and aggressive behaviour specifically (e.g., general aggression model; Anderson & Bushman, 2002). Recent work has shown that violent attitudes are correlated with, predict, and may affect aggressive behaviour (Nunes et al., 2022).

The present study examined whether the relationship between testosterone and violent attitudes would follow the same pattern as the relationship between testosterone and aggression found in past research. More specifically, we tested the effect of testosterone on violent attitudes, and whether this effect is moderated by the above-mentioned personality traits. We conducted a secondary analysis of experimental data from 140 adult men randomly assigned to receive either testosterone or placebo. Participants provided saliva samples before and after administration and completed self-report questionnaires assessing personality traits (i.e., dominance, self-control, and self-construal) and violent attitudes. Correlational analyses showed that testosterone concentrations, whether baseline or post-administration, were unrelated to violent attitudes. However, higher dominance, lower self-control, and more independent self-construal were associated with more violent attitudes. A regression analysis showed that administration of testosterone did not affect violent attitudes and personality traits did not moderate the effect of testosterone on violent attitudes. These findings suggest that testosterone, whether baseline or experimentally manipulated, does have a direct or moderated effect on violent attitudes. This lack of moderation by personality traits is inconsistent with past research on the effects of testosterone on aggression.

Future research should attempt to replicate and extend our findings using larger and more diverse samples, as well as examine whether violent attitudes moderate the relationship between testosterone and aggression. Given the present study's results, dispositional traits such as dominance, self-control, and self-construal merit inclusion in future research on violent attitudes. Accumulating evidence (e.g., Carré et al., 2017; Geniole et al., 2020) points to the importance of dynamic changes in testosterone—particularly in response to competitive or provocative contexts—rather than static levels in predicting aggression, highlighting the value of assessing contextual factors alongside dispositional traits in future research. Emerging theories (e.g., Carré et al., 2011; Eisenegger et al., 2010) also propose that testosterone's role in human behaviour may centre more on status-seeking motives than on aggression per se, with aggression functioning as only one of several possible status-pursuit strategies. Thus, future research should include status-seeking constructs in research involving testosterone and violent attitudes.

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