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## Associations between growth and maturity status and national ranking in young elite female tennis players

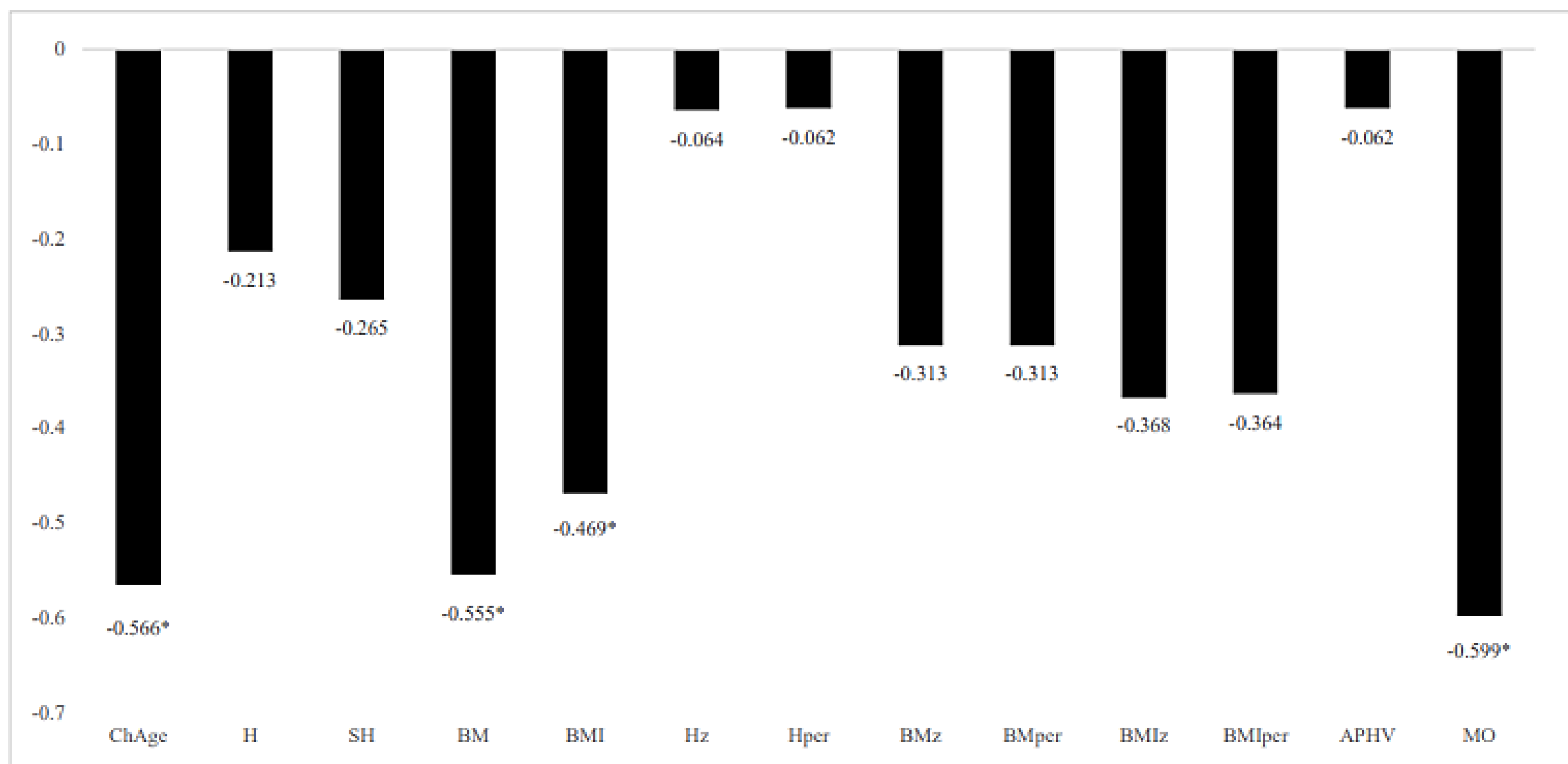
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### Background

Growth and maturity status of young athletes have a significant influence on their body compositions (Malina, 2007), and individual differences in the growth and maturity status of young athletes might affect the selection since greater physical attributes may mean advantages in most sports with a few exceptions (Cumming et al., 2005; Malina, 2007; Valente-dos-Santos et al., 2012). The influence of growth and maturity status on the performance of youth athletes is well-documented; however, data in youth tennis is limited (Van Den Berg, Coetzee, & Pienaar, 2012). The aims of this study were to determine the growth and maturity status of young female competitive tennis players and to examine their associations with national rankings.

### Method

The sample included 34 young female tennis players who competed in the U14 national team selection tournament in 2022. Body mass index (BMI) was calculated by dividing weight (kg) by the squared height (m). Physical growth status was compared to comprehensive reference database (Frisancho, 2008). Somatic maturity was determined by calculating the age at peak height velocity (APHV). The maturity offset was calculated by subtracting the difference between the APHV and chronological age.



### Results

The mean body height, weight, and BMI percentiles of players were above the 60th centile. The results indicated significant associations between ranking and maturity offset ( $rs(32) = -0.599$ ,  $p = 0.001$ ), body mass ( $rs(32) = -0.555$ ,  $p = 0.001$ ), BMI ( $rs(32) = -0.469$ ,  $p = 0.005$ ), BMI z score ( $rs(32) = -0.368$ ,  $p = 0.032$ ), and BMI percentile ( $rs(32) = -0.364$ ,  $p = 0.034$ ).

### Conclusion

The results of the study suggest that physical size and advanced maturity should be taken into consideration in the selection and identification of youth tennis players since there is a preference for youth players with greater physical attributes and advancement in maturity status.

