

HEIGHT-AGE-SEX SPECIFIC BODY MASS INDEX IN CHILDREN WITH END STAGE RENAL DISEASE - SINGLE CENTER EXPERIENCE

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INTRODUCTION AND AIMS:

Growth failure is a common complication in children with End Stage Renal Disease (ESRD) either on Hemodialysis (HD) or Peritoneal Dialysis (PD). The aim was to observe the correlation between Body Mass Index (BMI) and Dialysis Vintage in children on Renal Replacement Therapy (RRT).

METHODS:

Single center, retrospective study on 54 pediatric ESRD patients, age 5-19 years, median age 15.66 ± 3.2 years, 35 boys, 19 girls, 30 on HD, 24 on PD. Growth was quantified as specific BMI standard deviation scores (z). None of the patients received Growth Hormone Therapy. Median Dialysis Vintage was 40.77 ± 32.4 months.

To realize the correlations we used the Bivariate Pearson Coefficient.

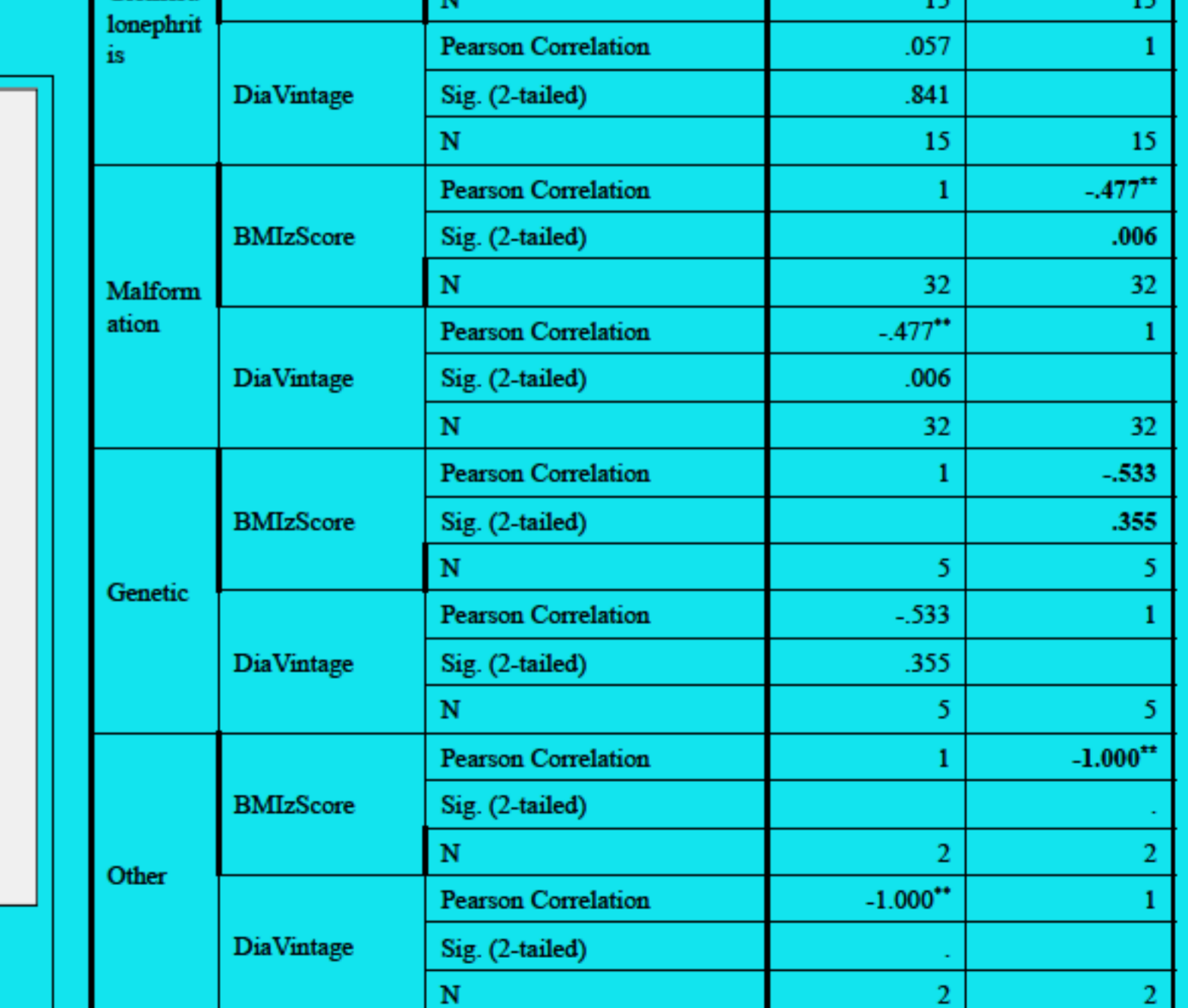
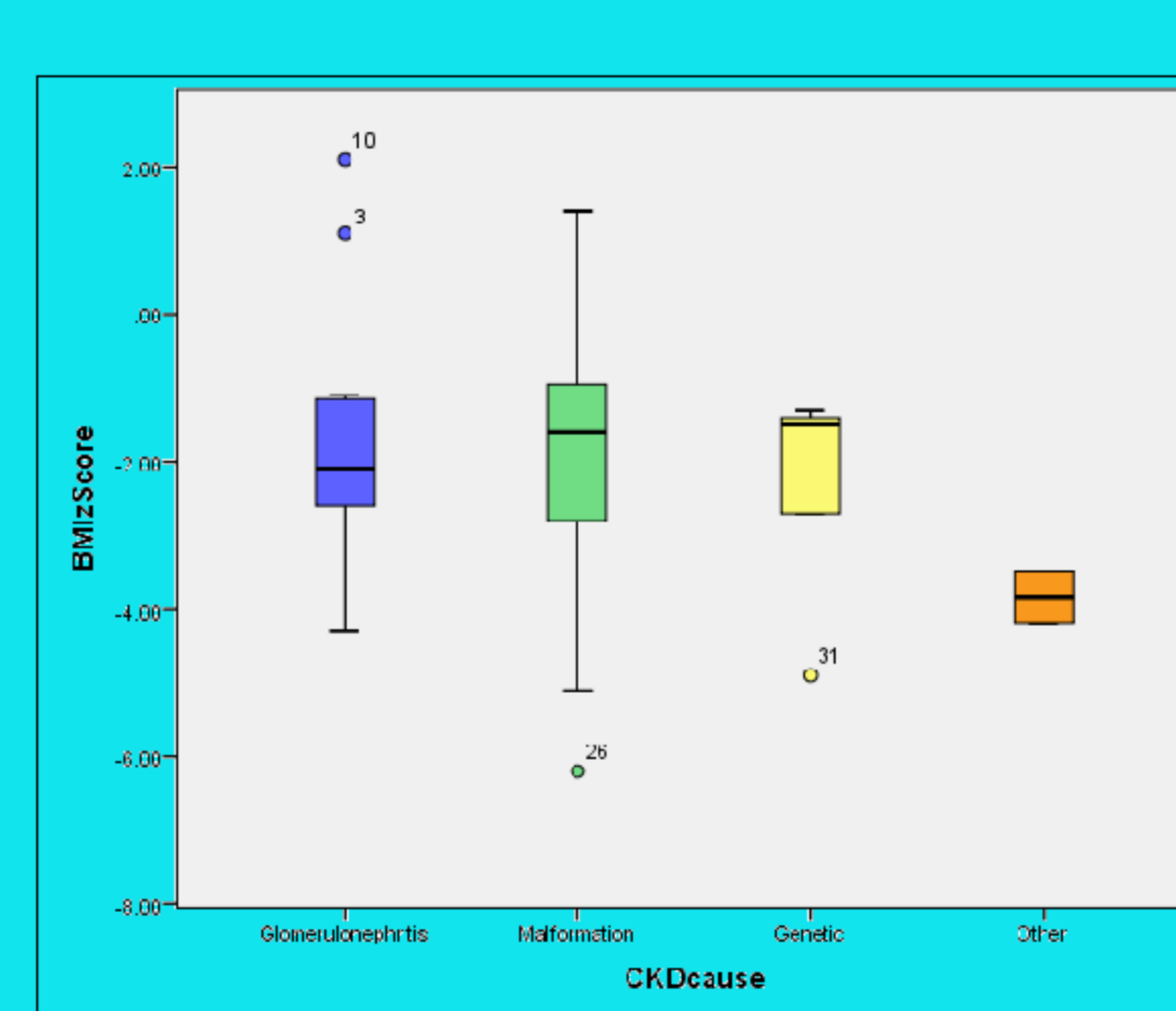
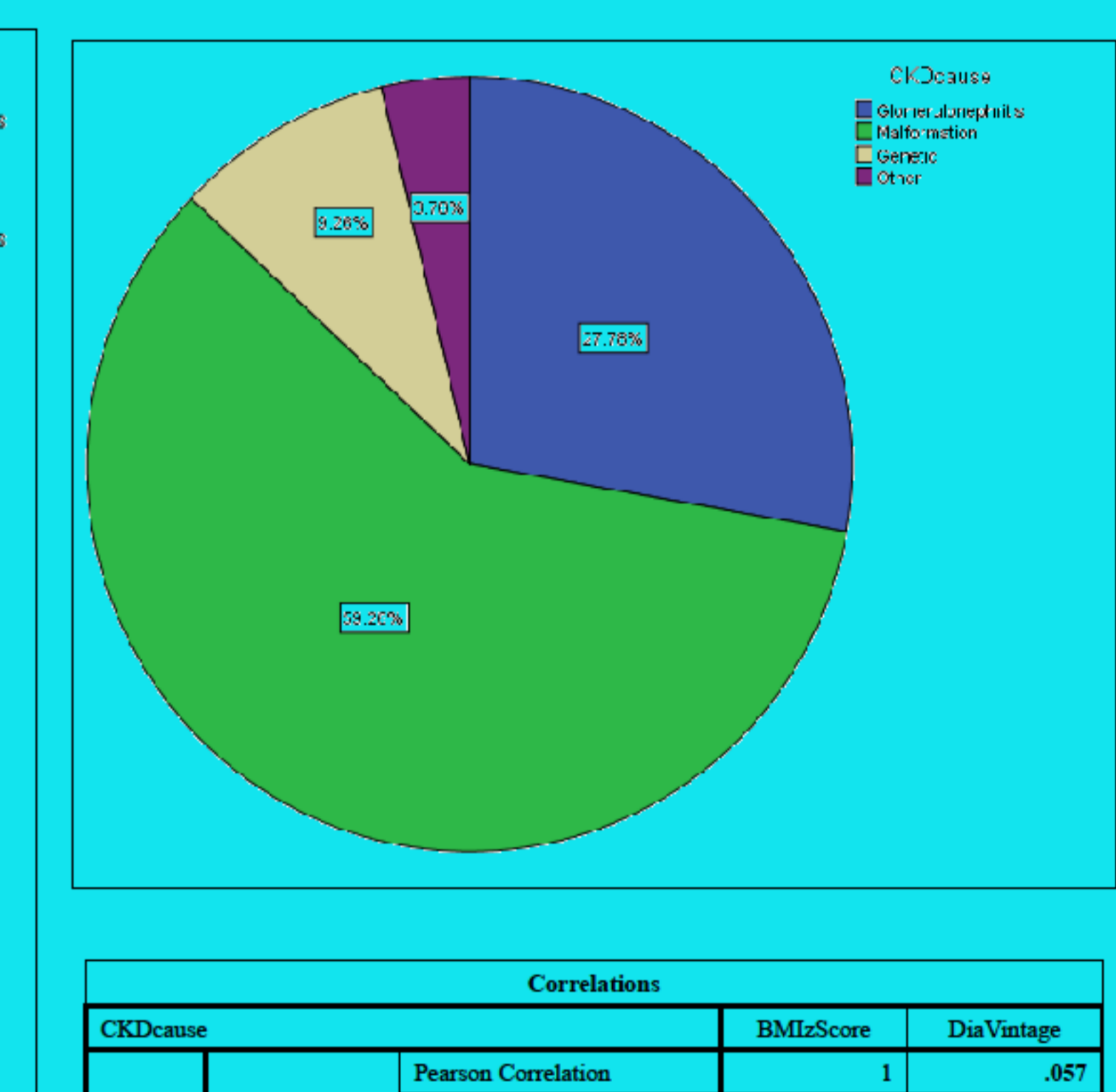
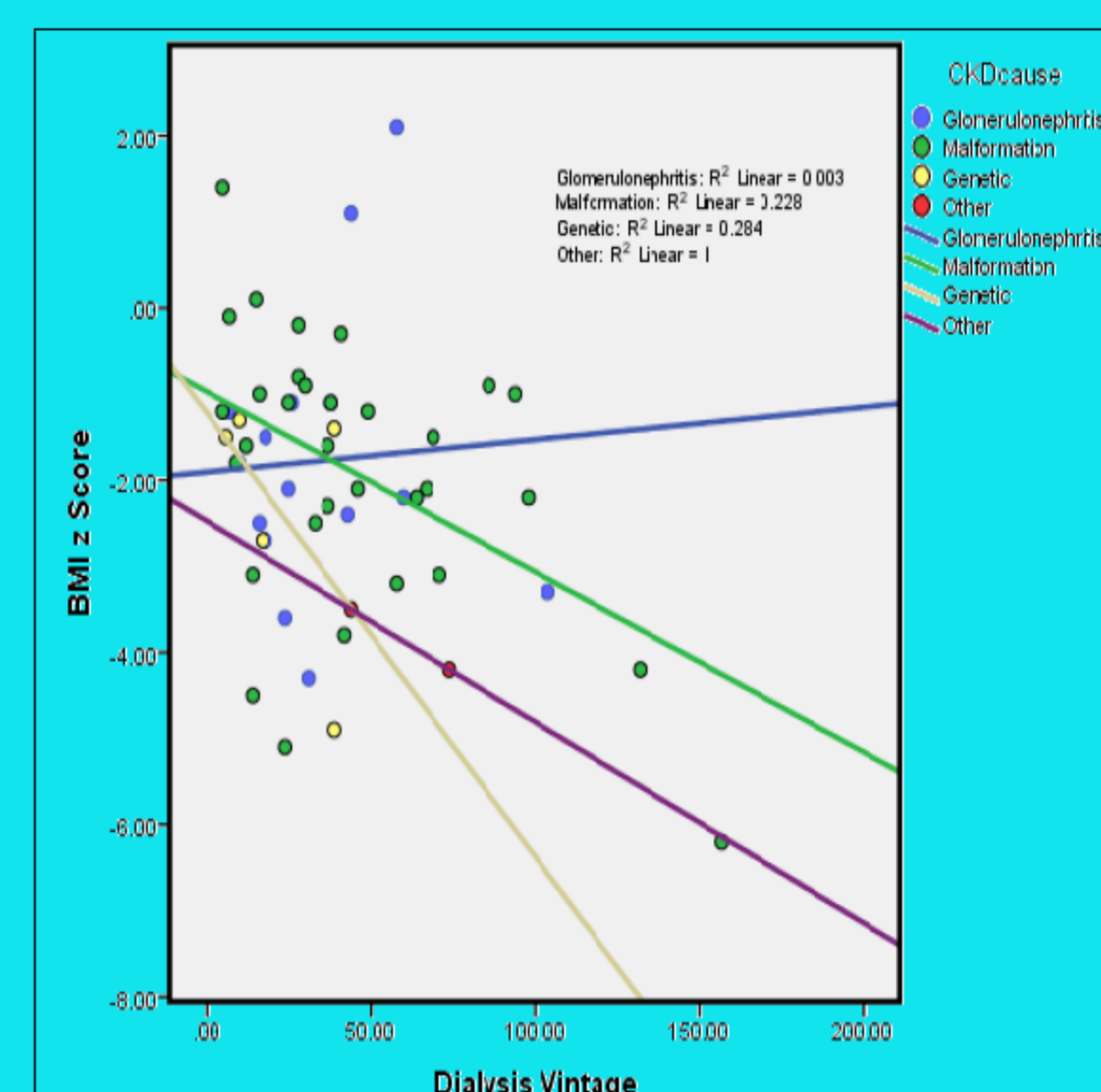
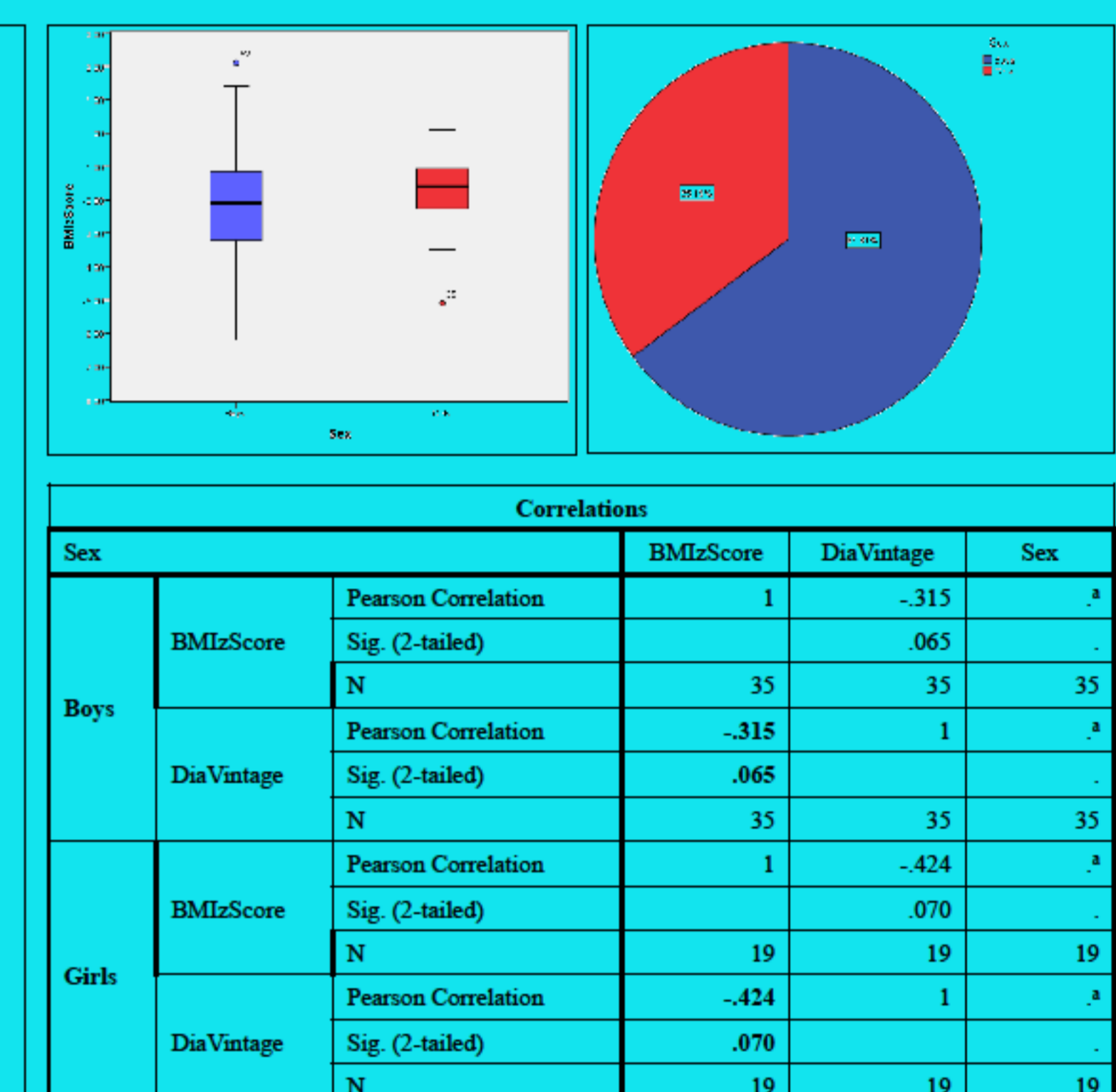
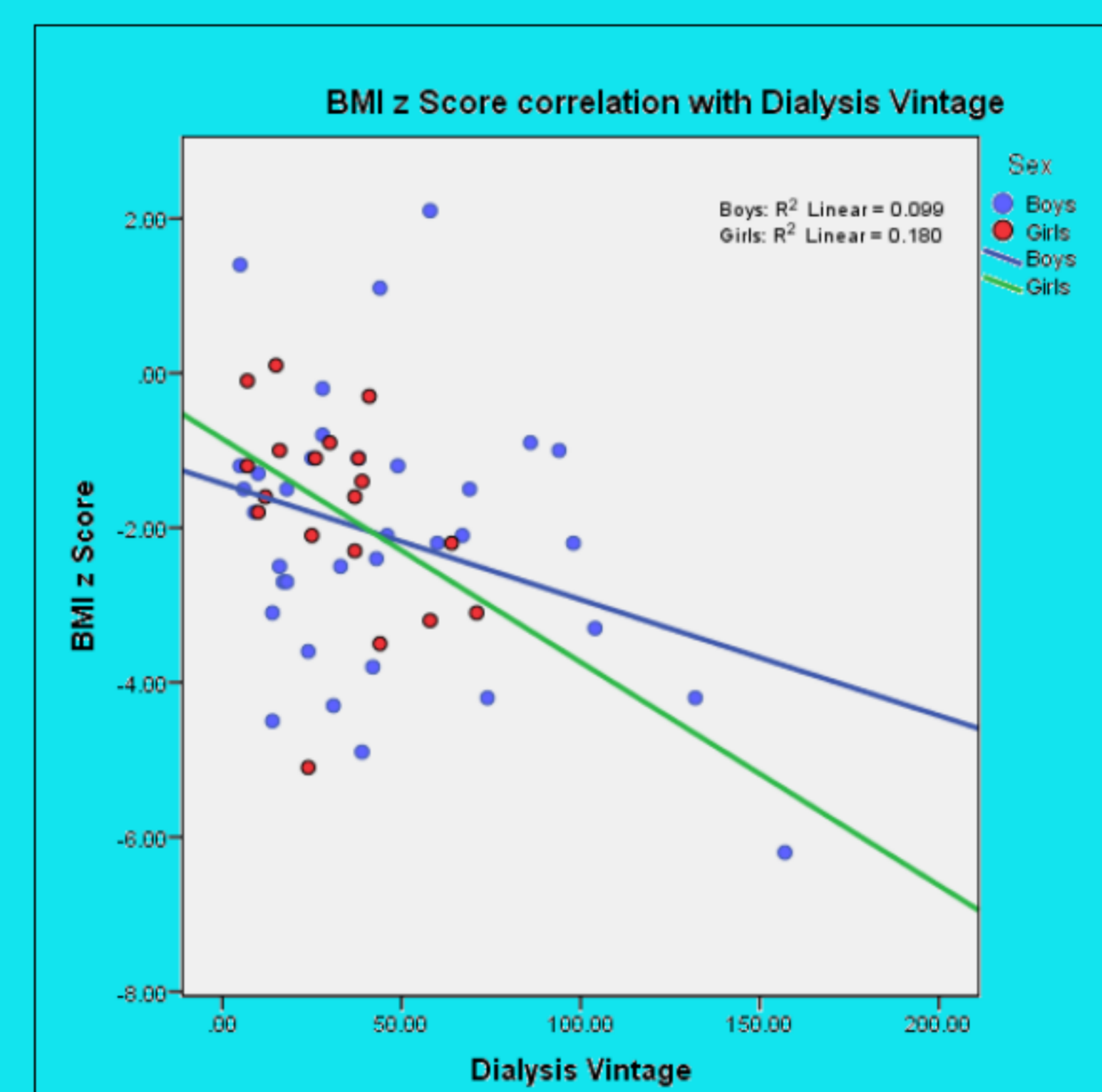
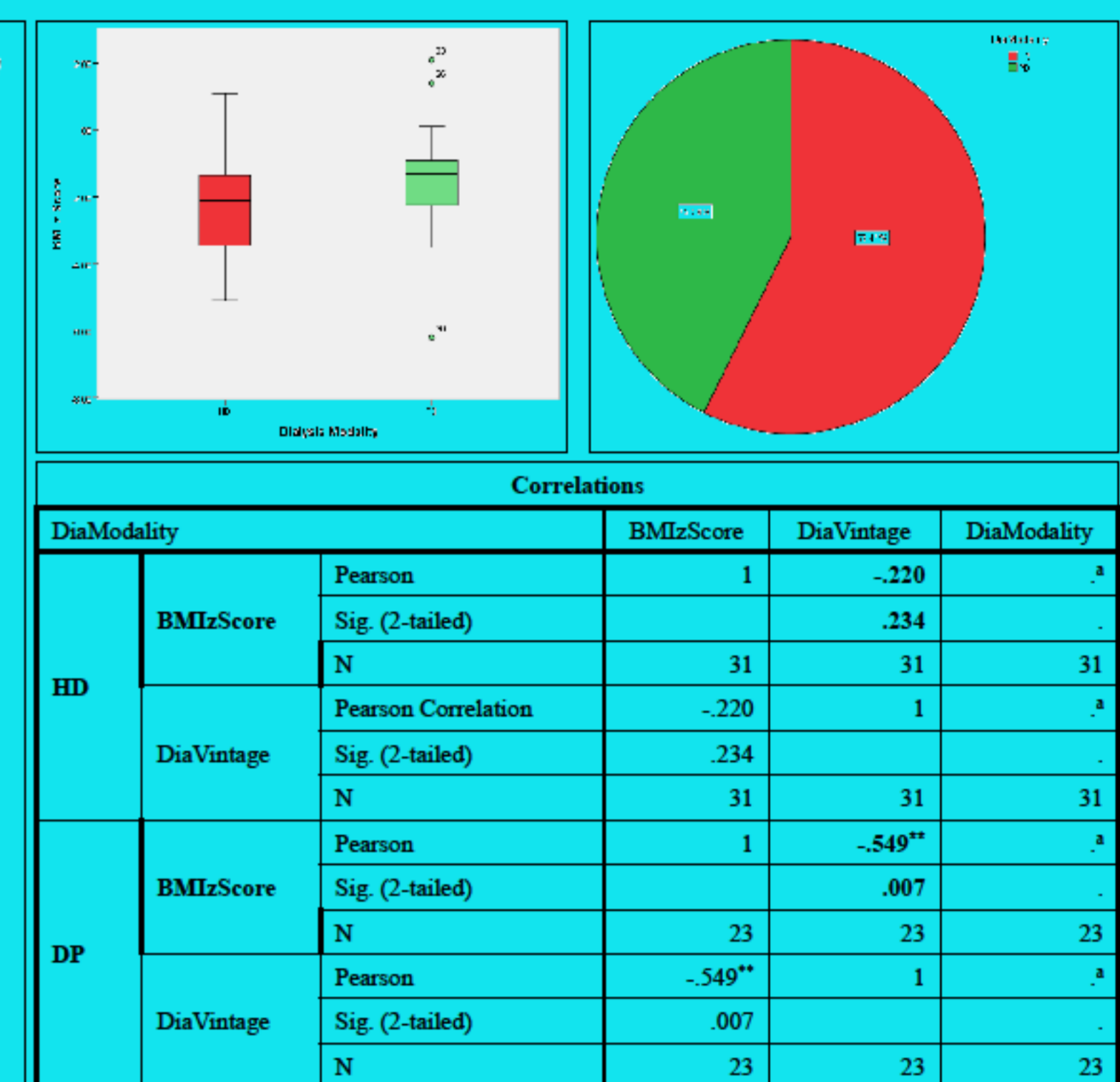
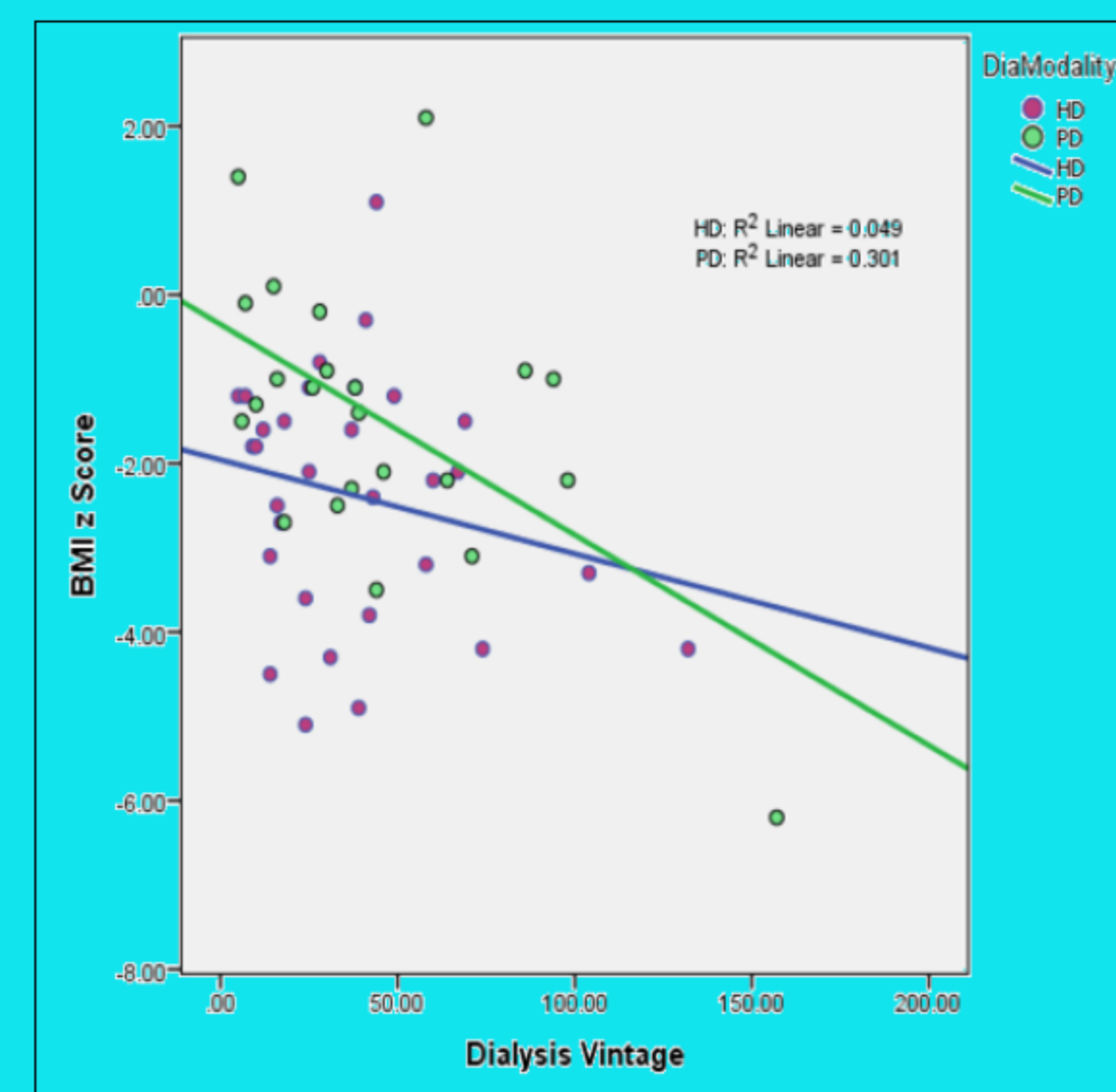
RESULTS:

BMI z Score median value: -1.99 ± 1.61 , correlates with Dialysis Vintage ($R^2 = 0.118$, $p < 0.05$). We compared the correlations by splitting the cohort in groups by Sex, Dialysis Vintage and Chronic Kidney Disease (CKD) cause. In our study group, between BMI z Score and Dialysis Vintage, there was a stronger negative correlation for girls ($R^2 = 0.180$, $p = 0.07$) than for boys ($R^2 = 0.6$, $p = 0.65$), a very strong negative correlation for the kids on PD ($R^2 = 0.301$, $p = 0.007$) and a weak negative one for the kids on HD (not statistically significant) ($R^2 = 0.049$, $p = 0.234$). Regarding the CKD cause, we found strong negative correlations for the Malformation group ($R^2 = 0.228$, $p = 0.006$), but no correlation for the Glomerular Disease group (R^2 Linear = 0.003 , $p = 0.84$).

CONCLUSIONS:

•Our results suggest that even if there is a negative correlation between BMI z Score and Dialysis Vintage, this correlation is stronger in girls than in boys.

•An important factor that influenced the results was the CKD cause. The children with Urinary Tract Malformations presented longer Dialysis Vintage (mean = 45.3 ± 36.7 months) than the children with Glomerular Disease (mean 34.8 ± 24.9) and with lower BMI z Score median values (-1.92 ± 1.61 than -1.77 ± 1.66). We can conclude that the duration of CKD before the start of RRT is an important factor that conducts to stronger negative correlations between BMI z Score and Dialysis Vintage.



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