

# The utility of copula models in health research

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In this talk, three recent projects will be discussed in which copulas played a central role in formulating models to address scientific challenges in health research. The first project involved the design of a school-based cluster-randomized trial aiming to assess the effect of an intervention on the referral times for psychometric assessment of children, times subject to right-censoring. The second problem involved second-order models of familial association in disease onset time in an arthritis study where families were identified by a biased sampling scheme. The third problem involved the formulation of a marked point process model for a trial in transfusion medicine where it was desirable to maintain simple properties of the marginal models for the points and marks. It is hoped that these examples will generate discussion and highlight the increasing appreciation for copula models in biostatistics.

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