Systematic review on preconception paternal alcohol use and offspring development.

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Introduction and Aims:
There is growing evidence that paternal alcohol use during the preconception period may be linked to offspring physical health and psychosocial outcomes [1, 2]. Despite this evidence, there is currently no comprehensive synthesis of the literature on paternal alcohol use during this period and the association with offspring developmental outcomes. This systematic review aims to address this gap by examining the research evidence on the relationship of preconception paternal alcohol use in with a range of outcomes, spanning fertility, pregnancy and offspring development.

Design and Methods: A literature search was conducted according to the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines in four databases (MEDLINE, Embase, PsycINFO and CINAHL) for studies reporting an association between preconception paternal alcohol use and offspring outcomes. Biological (e.g., spermatogenesis, fetal/offspring physical health, growth) and psychosocial (e.g., socio-emotional, cognitive, motor skills and alcohol-related) offspring outcomes that spanned across the lifespan were included. Preconception was defined as any timepoint prior to conception, with most literature focussed on young adulthood and the months proximal to conception. We note that this review was conducted as part of a broader review on perinatal alcohol exposure: Prospero registration: CRD42022354323.

Results: Of the 4,901 unique records identified, 337 were eligible for inclusion, 90 reported paternal use anytime before pregnancy (preconception; 27% studies). Studies examining paternal preconception alcohol use were largely with offspring biological outcomes (67 studies). Thematically, offspring outcomes are grouped by physical deformities or defects, cancers, anthropometrics (weight or height) and pre-birth outcomes (IVF or pregnancy loss). Results support an association between preconception use and physical deformities and defects (specifically cleft palates and heart defects), but are weak or inconclusive for childhood cancers and anthropometrics. There were also associations between paternal preconception use and DNA fragmentation of sperm. Results for the other outcomes domains are currently being extracted and analysed.

Discussions and Conclusions: Preliminary results indicate that paternal alcohol use in the preconception period is associated with adverse outcomes, including spermatogenesis processes and physical defects. Results have important implications for public health policy on the risks associated with alcohol use for both fathers and next generation offspring.

Disclosure of Interest Statement:

No conflicts of interest.

References

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