BUPRENORPHINE VERSUS METHADONE FOR THE TREATMENT OF OPIOD DEPENDENCE: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMISED AND OBSERVATIONAL STUDIES

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Background:
Opioid dependence is associated with substantial health and social burden, and opioid agonist treatment (OAT) is highly effective in improving multiple outcomes for people who receive this treatment. Methadone and buprenorphine are two of the most common medications provided as OAT. We aimed to examine buprenorphine maintenance compared to methadone in the treatment of opioid dependence, assessed in RCTs and observational study designs, across multiple primary and secondary outcomes.

Methods:
We aligned with GATHER, PRISMA and MOOSE guidelines. We searched Embase, MEDLINE, CENTRAL, and PsycINFO through August 2022; clinical trial registries, and previous relevant Cochrane reviews were also reviewed. All RCT and observational studies among people with opioid dependence treated with buprenorphine compared to methadone that collected data on retention, adherence or extra-medical opioid use, or a wide range of secondary outcomes, were included. Single arm cohort studies and randomised controlled trials that collected data on buprenorphine retention were also collected. Study authors were contacted to obtain additional data. Data on study, participant and treatment characteristics were extracted; comparative estimates were pooled using random-effects meta-analyses. Retention across multiple time points was pooled for methadone and buprenorphine. Meta-regressions examined potential reasons for variation in observed effects.

Results:
33 eligible RCTs, N=6,028 participants; 70 observational studies, N=376,664. Retention was better for methadone than buprenorphine, and RCTs had higher retention than observational studies. Of these studies 61 were conducted in Western Europe, 164 in North America, 15 in Middle East/North Africa, 20 in Australasia, 5 in South-East Asa, 7 in South Asia, 5 in Eastern Europe, 2 in Central Europe and 1 in East Asia. There were 291,347 (71.7%) male participants and 114,512 (28.2) female participants with a mean age of 37.8 (26.7 - 54. 7; SD = 5.6). There was no evidence suggesting adherence to treatment differed for buprenorphine compared to methadone. There was some evidence that extra-medical opioid use was lower in those receiving buprenorphine. There was limited evidence of lower levels of cocaine use cravings, anxiety and cardiac risk, and higher levels of treatment satisfaction among people receiving buprenorphine compared to methadone. There was limited evidence of lower levels of hospitalisation and alcohol use in people receiving methadone. There were no differences on other secondary outcomes examined.

Conclusion:
Evidence from trials and observational studies suggest that treatment retention is better for methadone than buprenorphine. There was a lack of comparative evidence on many other outcomes examined.