



WILLINGNESS TO USE PREP AMONG PREP NAÏVE MEN WHO HAVE SEX WITH MEN: A META-ANALYSIS AND SYSTEMATIC REVIEW

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BACKGROUND:

- HIV pre-exposure prophylaxis (PrEP) is a crucial tool to prevent new HIV infections.
- Men who have sex with men (MSM) comprise the largest group of people who are at risk of acquiring HIV.¹
- Willingness to use PrEP (WTUP) is an important determinant of uptake.²
- The current estimate of WTUP among PrEP naïve MSM and the factors affecting the same, need further assessment.

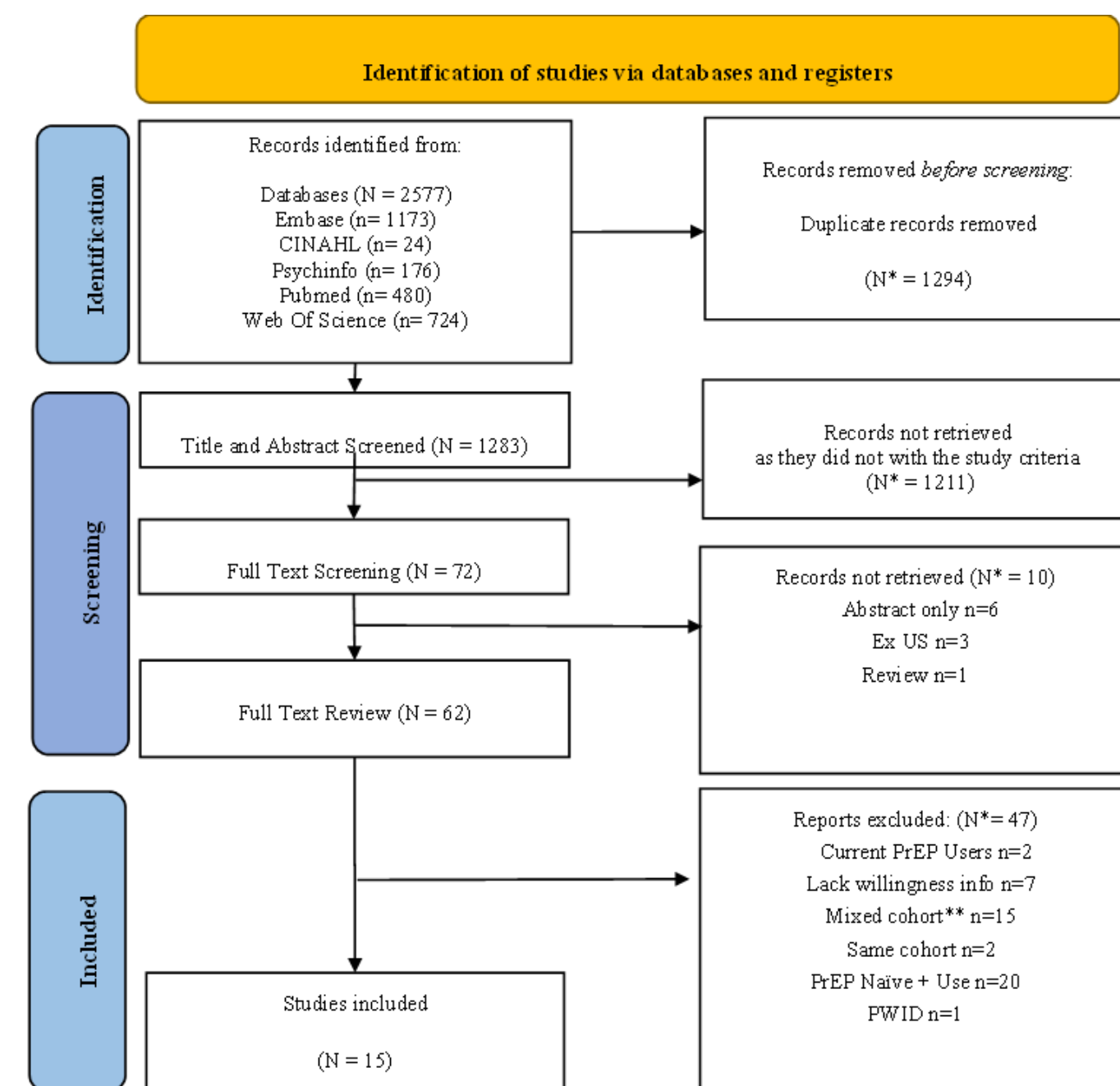
OBJECTIVE:

- To measure the pooled estimate of WTUP among PrEP-naïve U.S.-based MSM.
- To review and categorize factors reported in these studies, to be associated with WTUP among PrEP-naïve MSM, according to the social-ecological model.

METHODS:

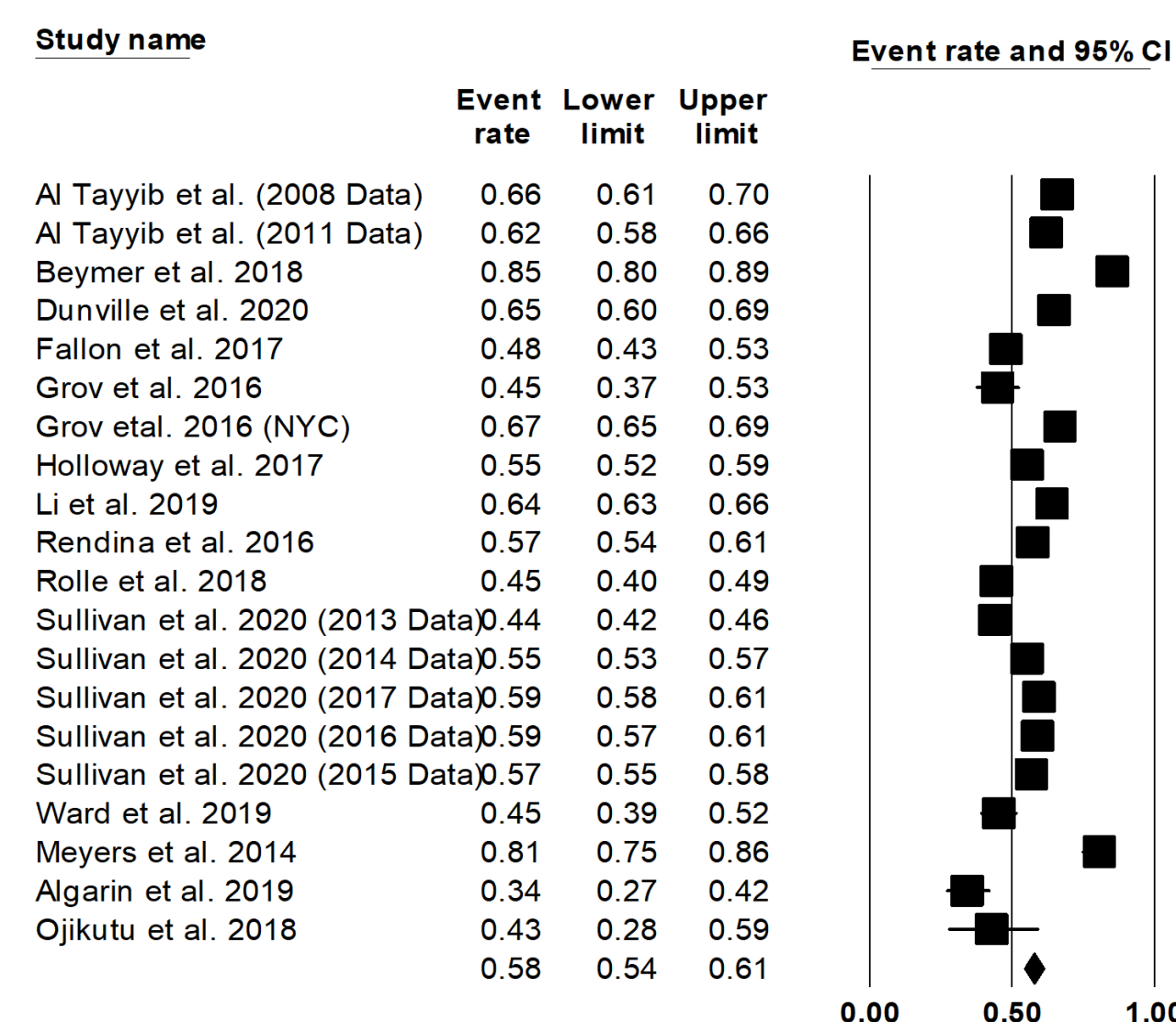
- PubMed, Embase, Web of Science, CINAHL, and PsycINFO were searched. The search strategy contained MeSH terms for HIV, PrEP, willingness, and interest.
- Articles were included if they were published between January 2005–May 2022, reported quantitative data on WTUP among PrEP-naïve U.S.-based MSM, and were available as full text and in English.
- Studies were excluded if they did not report original data (e.g., systematic reviews, meta-analyses, economic modeling).
- Meta-analysis was conducted to assess the pooled effect size of WTUP prevalence using a random effects model and heterogeneity in the pooled estimate was assessed.
- Factors affecting WTUP were reviewed and categorized into the individual, interpersonal, societal and public policy factors as per the social-ecological model.

Figure 1 PRISMA diagram of article screening process



* N = Total articles excluded in this step; **Mixed Cohort - Male + Female/MSM+Trans/ HIV+ and HIV-; Persons who Inject drugs, Couple based study; PWID = Persons with injection drug use

Figure 2 Forest plot depicting pooled prevalence of willingness to use PrEP among PrEP naïve MSM using random effects model

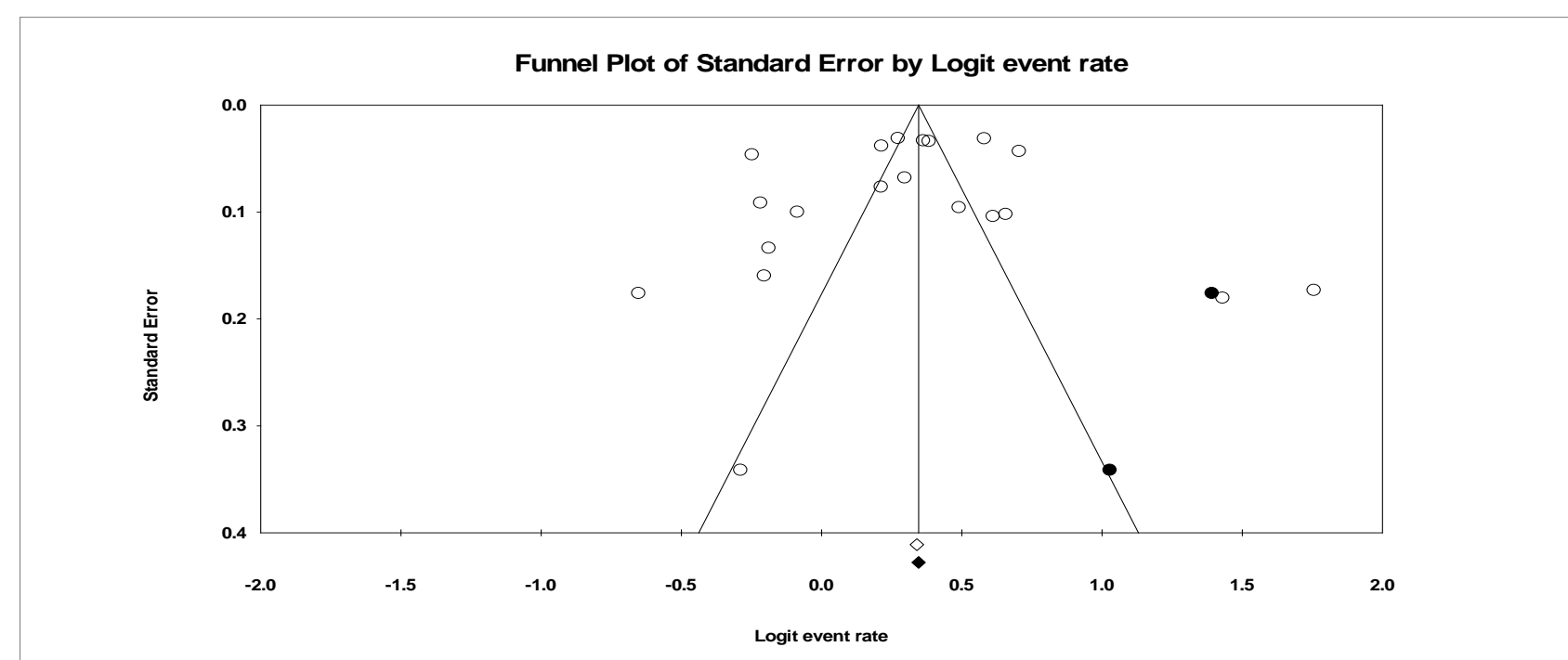


Note: CI: Confidence Intervals

META ANALYSIS RESULTS:

- Fifteen studies were included based on the inclusion and exclusion criteria, contributing twenty effect sizes relating to WTUP and twelve studies reporting factors associated with WTUP.
- Meta-analysis revealed a moderate pooled prevalence proportion for WTUP of 0.58 (95% CI: 0.54-0.61) (or 58 out of 100) among PrEP-naïve MSM.
- The prediction interval of the overall estimate was 0.42–0.72.
- High inter-study heterogeneity ($Q=548.104$, $df=19$, $p<0.001$, $I^2=96.53$, $\tau^2=0.091$) was observed.

Figure 3 Funnel plot for publication bias



Note: Standard error of PrEP willingness estimate is plotted on the Y axis and Logit event rate of PrEP willingness is plotted on the X axis. Black dots depict imputed studies and clear dots depict observed studies.

SYSTEMATIC REVIEW RESULTS:

- The majority of the studies reported individual (n=12) and relatively fewer studies assessed interpersonal level factors (n=5), public policy (n=4) or societal (n=1) factors associated with WTUP.

Individual factors:

- Higher age was associated with lower WTUP.
- PrEP related factors associated with lower WTUP were:
 - Lower PrEP knowledge
 - Perception that PrEP was not beneficial
 - Concerns related to side effects from PrEP use
 - Concerns about need for continued adherence

Interpersonal factors associated lower WTUP:

- Identifying as bisexual vs gay
- Not having HIV related concerns
- Not testing for HIV in the past year
- Having any depressive symptoms in the past 30 days

Interpersonal factors associated higher WTUP:

- Having higher number of partners
- Inconsistent condom use

Societal factors associated lower WTUP:

- Mistrust towards the healthcare system and pharmaceutical companies

Public policy related factors associated with lower WTUP:

- Not having medical insurance
- Less frequent visits with a physician

Public policy related factors associated with higher WTUP:

- Not having to pay for PrEP
- Receipt of a PrEP related behavioral intervention
- Interest in one-on-one counseling, text-based support and peer support

CONCLUSION

- A moderate pooled prevalence of WTUP emphasizes need for enhanced efforts to improve the same.
- PrEP interventions targeted towards PrEP naïve older adults, at risk of HIV, are needed.
- Pharmacists and healthcare providers play a positive role in improving WTUP.
- Incorporating such support services in future PrEP programs such as one-on-one counseling, text-based support and peer support, could be effective in improving WTUP among MSM.

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