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# Which Leads to Higher Medication Substitution Treatment Retention – Methadone or Buprenorphine?: A Systematic Literature Review

Magalloway Field  
*University of Southern Maine*

Amy Rowe  
*University of Southern Maine*

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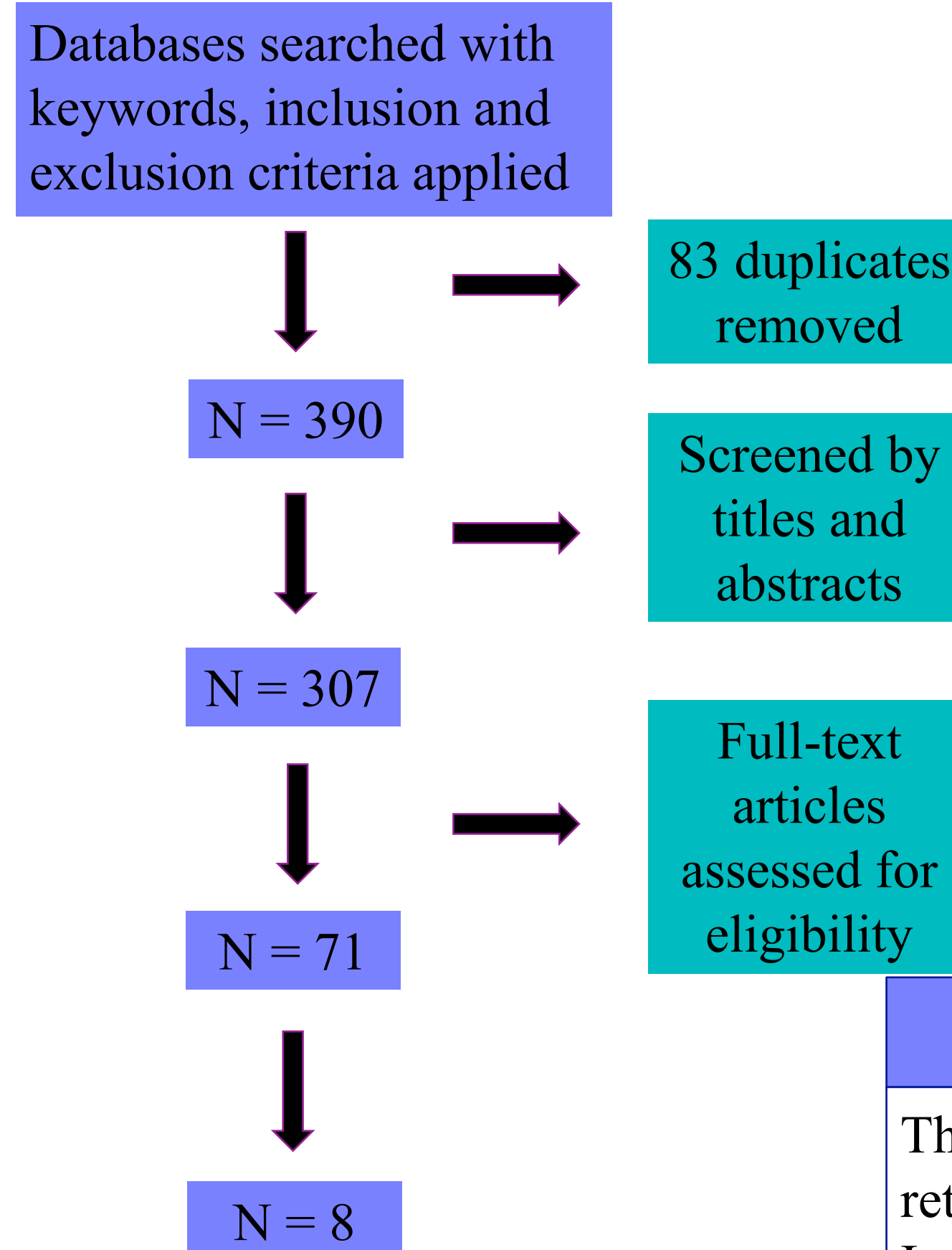




### Introduction

The opioid epidemic in the United States is worsening; in fact, the number of drug overdoses almost tripled in the U.S. from 1999-2014 (Rudd, Seth, David, & Scholl, 2016). In 2015 alone, there were 52, 404 drug overdose deaths, with 33, 091 (63. 9 %) involving opioids (Rudd et al., 2016). From 2010-2015, death rates increased in thirty states and remained stable in nineteen (Rudd et al., 2016). Clausen, Waal, Thoresen, and Gossop (2009) report that mortality rates among opioid users are six to thirty times higher than those of populations in the same age- and gender-bracket of non-users. Clearly opioid addiction is a public health problem. It is associated with several risks in addition to overdose-related deaths, including intravenous drug administration, homelessness, and polysubstance use (Dunn et al., 2013). Actually, secondary to intravenous drug use, the proportion of Hepatitis C-positive opioid users increased from 21% to 75% in a five-year period, thus leading to a rise in Hepatitis C-related complications in this population (Dunn et al., 2013). There are several, multifaceted efforts that need to be made to help reduce opioid addiction, including extending opioid use treatment programs. In particular, medication-assisted treatment (MST) programs with methadone or buprenorphine should be emphasized. Future research is needed to determine whether methadone or buprenorphine treatment programs yield greater retention rates. The purpose of this literature review is to review and report on the relationship between type of medication-assisted treatment for opioid addiction and treatment retention.

### Flow Chart



### Results

- Final sample included 8 quantitative studies: 6 non-experimental and 2 randomized experimental studies
- All 8 studies examined treatment retention rates over at least a 6 month time period and 2 studies also measured illicit drug use as a secondary outcome
- Treatment retention rates in the methadone group were found to be approximately twice as high as the buprenorphine group in all but one of the studies (Schaub, Chtenguelov, Subata, et al., 2010). This outlier found the treatment retention rates to be nearly equal between the two medication groups (Schaub et al., 2010).
- Sub-group analyses conducted in 3 of the studies revealed that most drop-outs occurred early in treatment, with a significantly higher proportion of drop-outs occurring in the buprenorphine group (Bell, Trinh, Butler, et al., 2009; Burns, Randall, Hall et al., 2009; Gryczynski, Mitchell, Jaffe et al., 2013).
- Participants commencing on buprenorphine treatment were more likely to leave treatment and re-enter multiple times (Burns et al., 2014; Bell et al., 2009), and were more likely to switch treatment medications (Burns, Gisev, Larney et al., 2014).

### Discussion

The literature overwhelmingly supported the use of methadone over buprenorphine regarding treatment retention, with methadone treatment programs retaining patients nearly 50% more than buprenorphine. In addition, patients on buprenorphine are more likely to have multiple treatment episodes and switch medications. However, buprenorphine shows more promise in helping patients abstain from illicit drug use. This has implications for practice, future research, education, and policy. Future research is needed to identify interventions to reduce early treatment cessation for buprenorphine patients. These interventions could include further training and education for providers in proper prescription of buprenorphine treatment to reduce withdrawal symptoms and early drop-out. Implications for practice are numerous and include receiving education and being aware that buprenorphine patients are at a higher risk of experiencing withdrawal symptoms. Policy work should focus on standardized training and education among all MST prescribers. Literature suggests training should include mandatory addiction education in graduate school and through medical associations (Nosyk, Anglin, Brissette et al., 2013). Specific implications for nursing include the need for education regarding MST programs and appropriate medication dosing, interventions to help reduce withdrawal symptoms, and the need to advocate for these patients at the policy level. Limitations of this study include limited time, lack of applicable studies on this topic, and novice researchers.

### Methods

Data Bases Searched: Medline and CINAHL  
 Keywords Used: methadone, buprenorphine, treatment, and retention  
 Inclusion criteria: comparison studies between methadone and buprenorphine, outcome variable of treatment retention of six months or longer, studies published in English between 2009 and 2016  
 Exclusion criteria: studies examining pregnant women, neonates, naloxone, and not both methadone and buprenorphine were excluded



(Smith, 2012)

### References (Full reference list available upon request)

Bell, J., Trinh, L., Butler, B., Randall, D., & Rubin, G. (2009). Comparing retention in treatment and mortality in people after initial entry to methadone and buprenorphine treatment. *Addiction*, 104(7), 1193-1200. doi:10.1111/j.1360-0443.2009.02627.x

Burns, L., Gisev, N., Larney, S., Dobbins, T., Gibson, A., Kimber, J., . . . Degenhardt, L.(2014). A longitudinal comparison of retention in buprenorphine and methadone treatment for opioid dependence in New South Wales, Australia. *Addiction*, 11(4), 646-655. doi:10.1111/add.12834

Burns, L., Randall, D., Hall, W., Law, M., Butler, T., Bell, J., & Degenhardt, L. (2009). Opioid agonist pharmacotherapy in New South Wales from 1985 to 2006: Patient characteristics and patterns and predictors of treatment retention. *Addiction*, 104(8), 1363-1372. doi:10.1111/j.1360-0443.2009.02633.x

Collins, R., Ewing, D., Boggs, B., Taggart, N., Drillingcourt, A., Kelly, M., & Patterson, D.(2009). Opiate substitution prescribing in Belfast-two year follow up study. *Irish Journal of Psychology Medicine*, 26(4), 183-186. http://doi.org/10.1017/S0790966700000665

Gryczynski, J., Mitchell, S. G., Jaffe, J. H. Kelly, S. M., Myers, C. P., O'Grady, K. E., . . . Schwartz, R. P. (2013). Retention in methadone and buprenorphine treatment among African Americans. *Journal of Substance Abuse Treatment*, 45(3), 287-292. http://dx.doi.org/10.1016/j.jsat.2013.02.008

Pinto, H., Maskrey, V., Swift, L., Rumball, D., Wagle, A., & Holland, R. (2010). The summit trial: A field comparison of buprenorphine versus methadone maintenance treatment. *Journal of Substance Abuse Treatment*, 39(4), 340-352. doi:10.1016/j.jsat.2010.07.009

Proctor, S. L. & Copeland, A. L. (2014). A naturalistic comparison of the effectiveness of methadone and two sublingual formulations of buprenorphine on maintenance treatment outcomes: Findings from a retrospective multisite study. *Environmental and Clinical Psychopharmacology*, 22(5), 424-433. http://dx.doi.org/10.1037/a0037550

Schaub, M., Chtenguelov, V., Subata, E., Weiler, G., & Uchtenhagen, A. (2010). Feasibility of buprenorphine and methadone maintenance programmes among users of home made opioids in Ukraine. *International Journal of Drug Policy*, 21(3), 229-233. doi.10.1016/j.drugpo.2009.10.005