COGNITIVE CONTROL AS A MECHANISM IN ALCOHOL USE DISORDER
A Translational Systematic Review of Reviews

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BACKGROUND

- A major research goal in the study of addiction is to better understand the underlying causes of substance use disorders, refine their diagnosis, and develop personalized treatments to address them.
- The Alcohol Addiction Research Domain Criteria (AARDoC; Litten et al., 2015; Sher, 2015) is a mechanism-based framework that aims to identify and characterize the core etiologic processes indicated in alcohol use disorder (AUD). It describes three functional domains: cognitive control, reward/incentive salience, and negative emotionality.
- The aim of the current systematic review of reviews was to integrate reviews examining AUD etiology, core theories, and associated endophenotypes, into a comprehensive etiologic framework.
- The current presentation focuses specifically on the domain of cognitive control.
- Despite the wealth of literature pointing to impaired cognitive control as a mechanism in the development of AUD (e.g., Boness et al., in prep), research has not been systematically integrated across this domain.
- The current review aimed to integrate this literature with the overall goals of: (a) identifying and delineating the specific etiologic processes at hand in AUD, (b) developing diagnostic criteria that are more closely tied to etiologic processes, and (c) informing treatment selection (see Boness et al., in prep).

METHODS

Search Strategy and Data Sources
- Aim: Identify all systematic reviews examining AUD etiology, core theories, and endophenotypes
- 29 PROQUEST and 37 EBSCO databases searched, manual forward and backward searches, and consultation with experts. The search was initially conducted in March 2018.
- Full search terms are available in supplemental materials (QR code). Reviews were required to be peer reviewed. No limits were applied for the start date of searches.

Eligibility Criteria and Study Selection
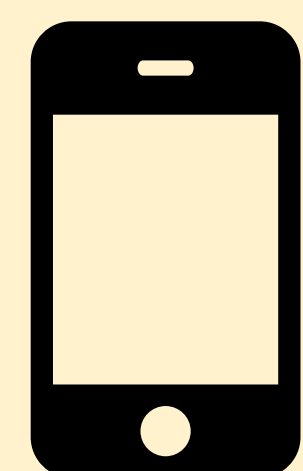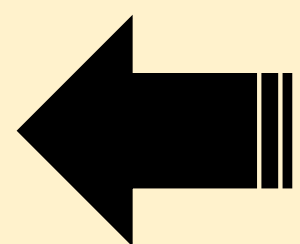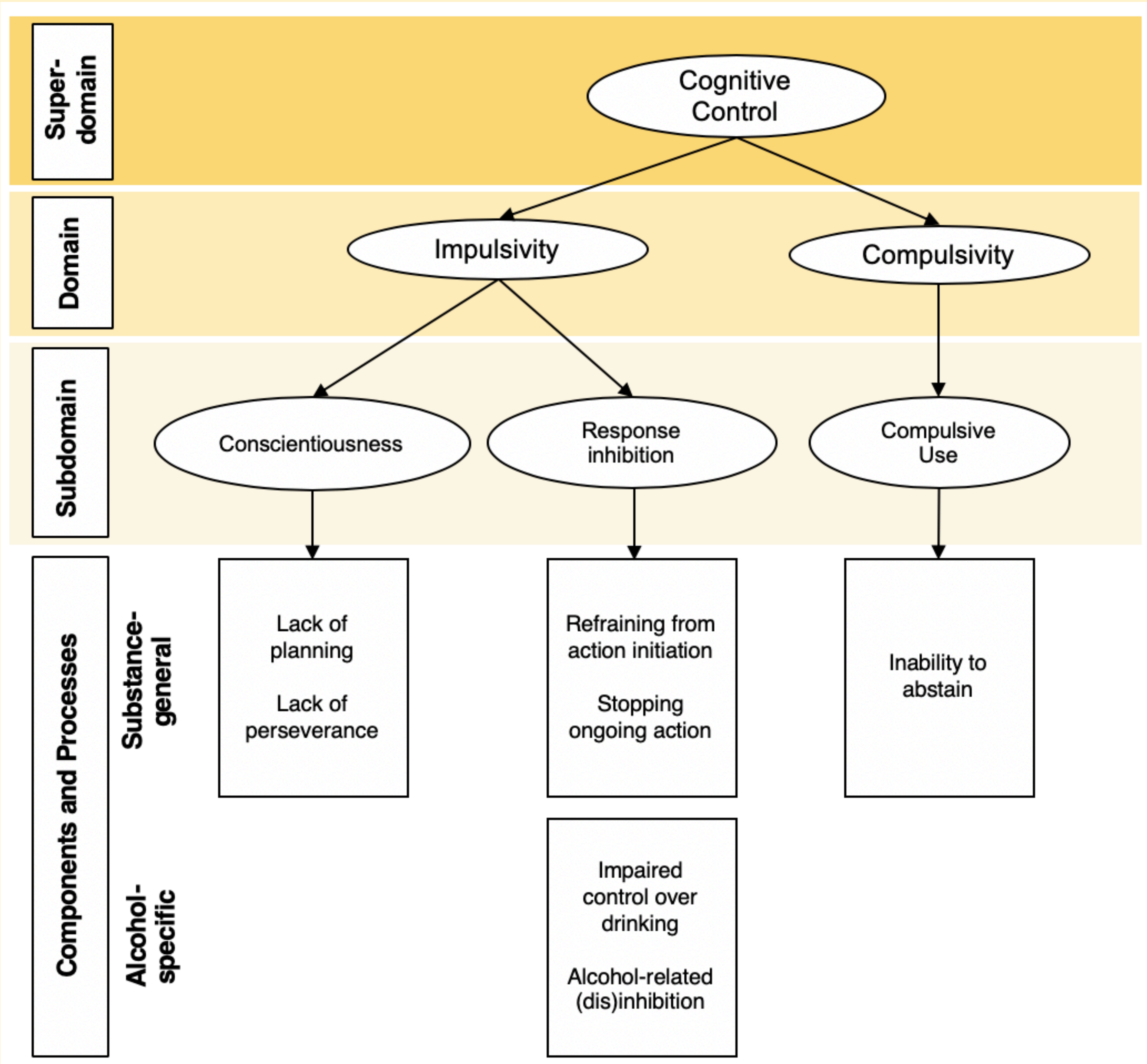- See Figure 1

Data Extraction and Coding
- Eligible reviews were double coded, and discrepancies were resolved during weekly meetings with coders.
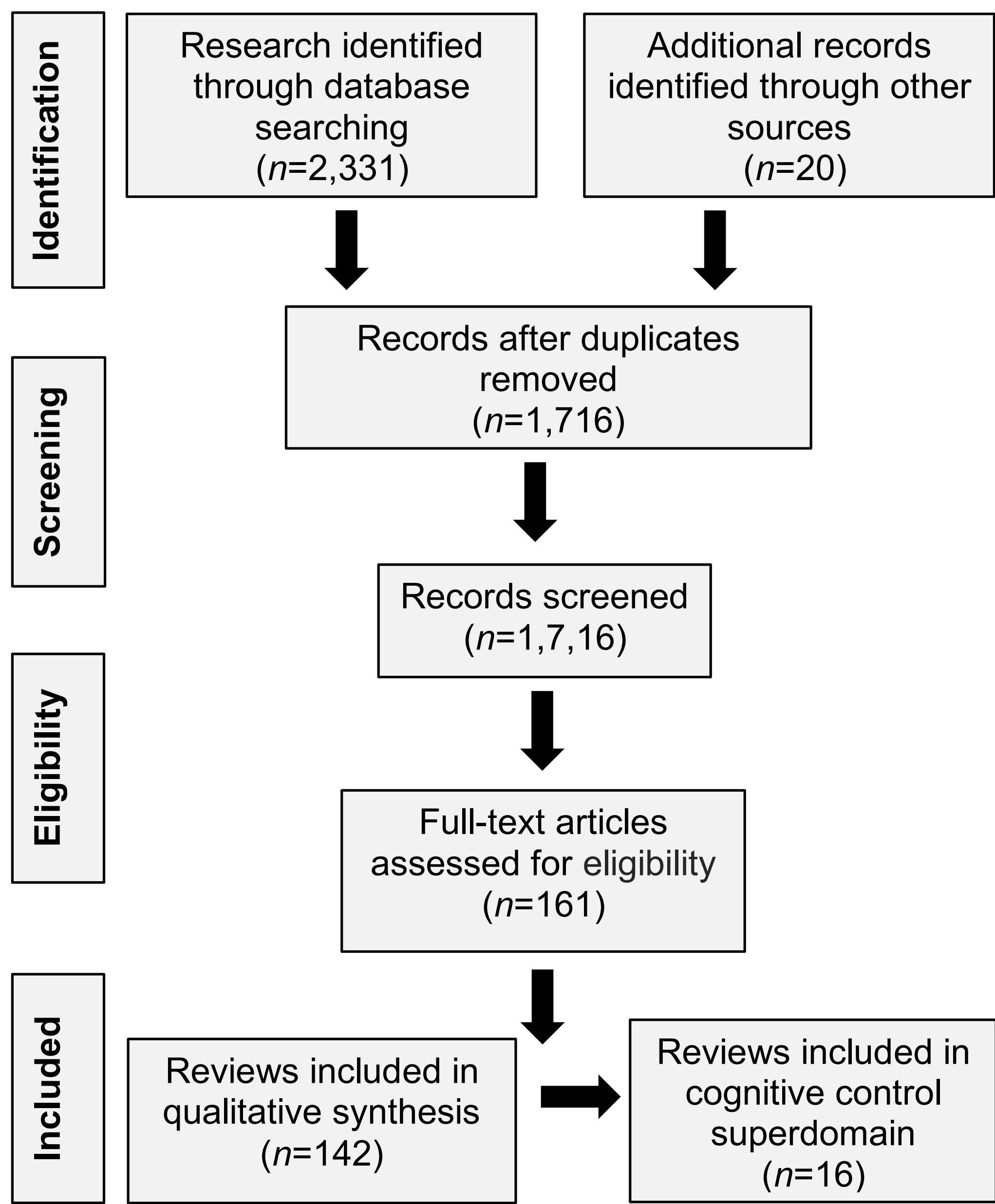
Quality of Reviews
- Cooper's Checklist (2015) was used to assess quality of review methodology. Reviews that were low or critically low were excluded from synthesis (*n=3*).

IMPAIRED **COGNITIVE CONTROL** IS A KEY MECHANISM IN **ALCOHOL USE DISORDER**

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Integration of Reviews
- Final reviews were integrated into a hierarchical framework across the AARDoC domains, including cognitive control.
- Superdomains, domains, subdomains, and specific components or processes for each of the domains were identified based on the reviews included. Alcohol-specific processes were distinguished from those considered common to all substances (i.e., substance-general).

LIMITATIONS

- There may be overlap between cognitive control and other superdomains in the framework (i.e., reward and negative valence) not described here. For example, deficits in cognitive control may make dysregulation in other domains more likely.

FUTURE DIRECTIONS

- Integrate the cognitive control super-domain into a comprehensive framework of AUD that includes other functional domains such as reward and negative valence (see Boness et al., in prep).
- Aim to characterize how the relevance of specific components and processes may vary as a function of the stage of the addiction process.
- Extend to other substance use disorders as polysubstance use is common in the general population.
- Empirically test the conceptual framework.

References available by scanning the QR code.

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