

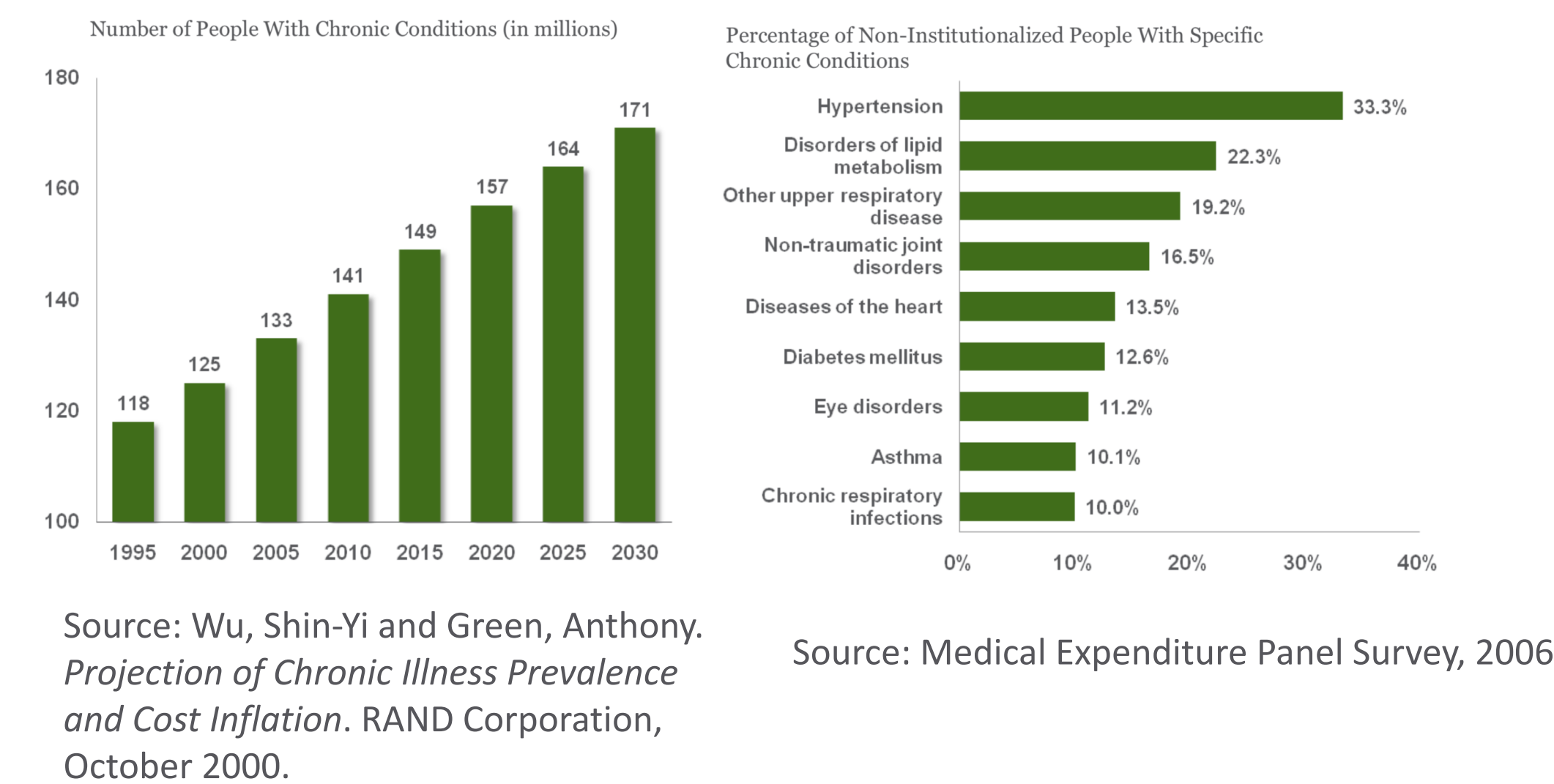
Behavior Change and Persuasive Components in mHealth: A Scoping Literature Review

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BACKGROUND



- Common reasons are low physical activity & poor food choices.
- Supporting people through reminders and motivation can help change their behavior.

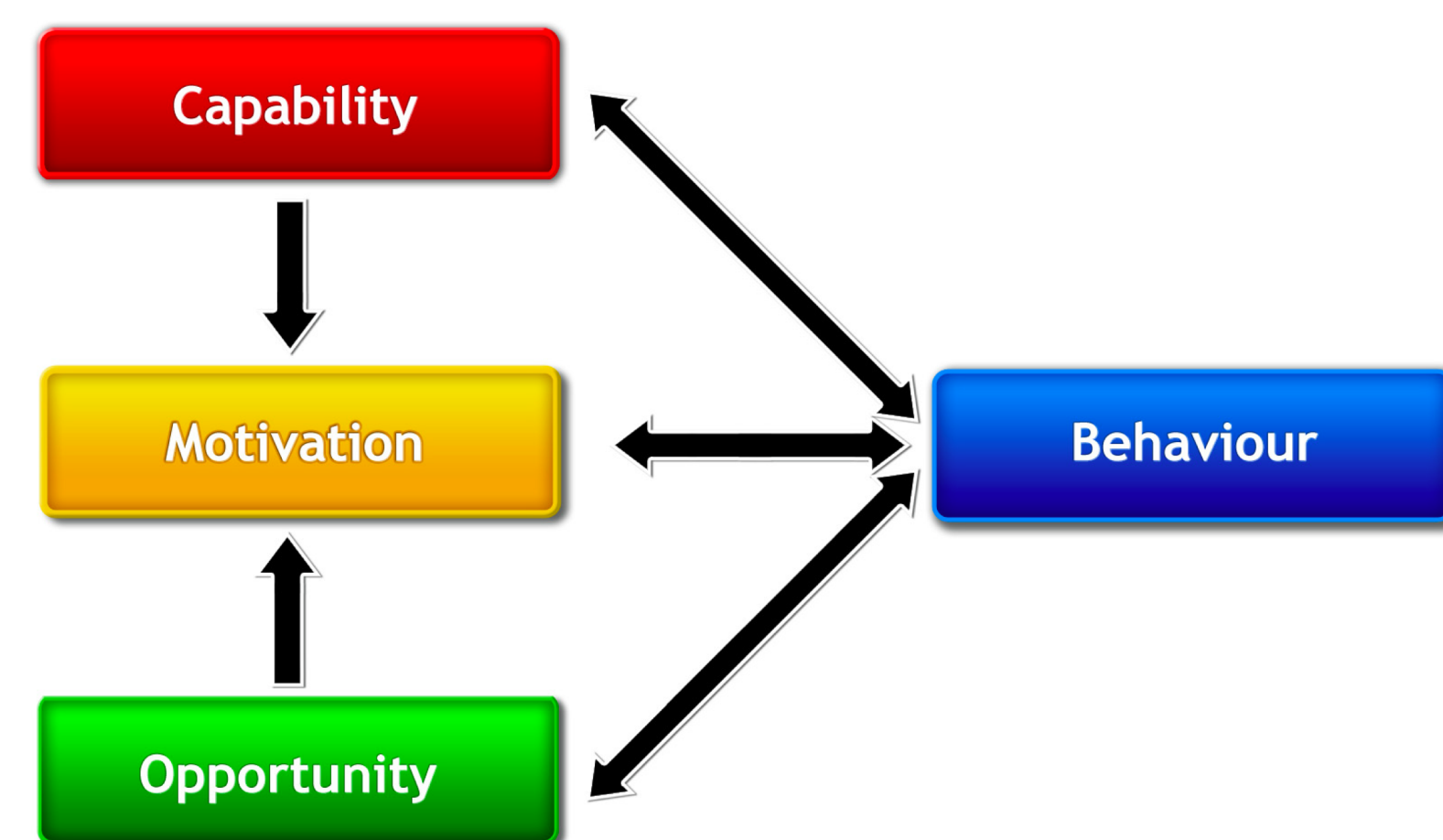


Figure 2. COM-B model of behavior formation (Michie, 2011)

- Mobile health interventions have been accepted by users (Loescher et al., 2018)
- User Engagement with such interventions is not well understood (Rathbone, Clarry, & Prescott, 2017)
- Low engagement reported to be problematic (Laing et al., 2014)
- Long-term user engagement with the intervention is critical for it to be effective (Lally et al., 2010)

OBJECTIVES

Aim 1: Identify and review the key conceptual components used in the design of mHealth behavior change interventions

Aim 2: Identify unexplored components that can further sustain user engagement with mHealth interventions

METHODS

- Databases searched were PubMed, Scopus, Compendex, and PsycInfo between March 2018 and July 2018
- Keywords used : “(persuasive OR tailor OR tailoring OR intervention) AND (mhealth OR mobile health OR mobile application OR mobile app OR mobile phone) AND (engagement OR improvement OR acceptance OR adherence OR retention OR dropout)”.
- Full Review:** Thematic analysis for similar latent concepts used in the articles was performed

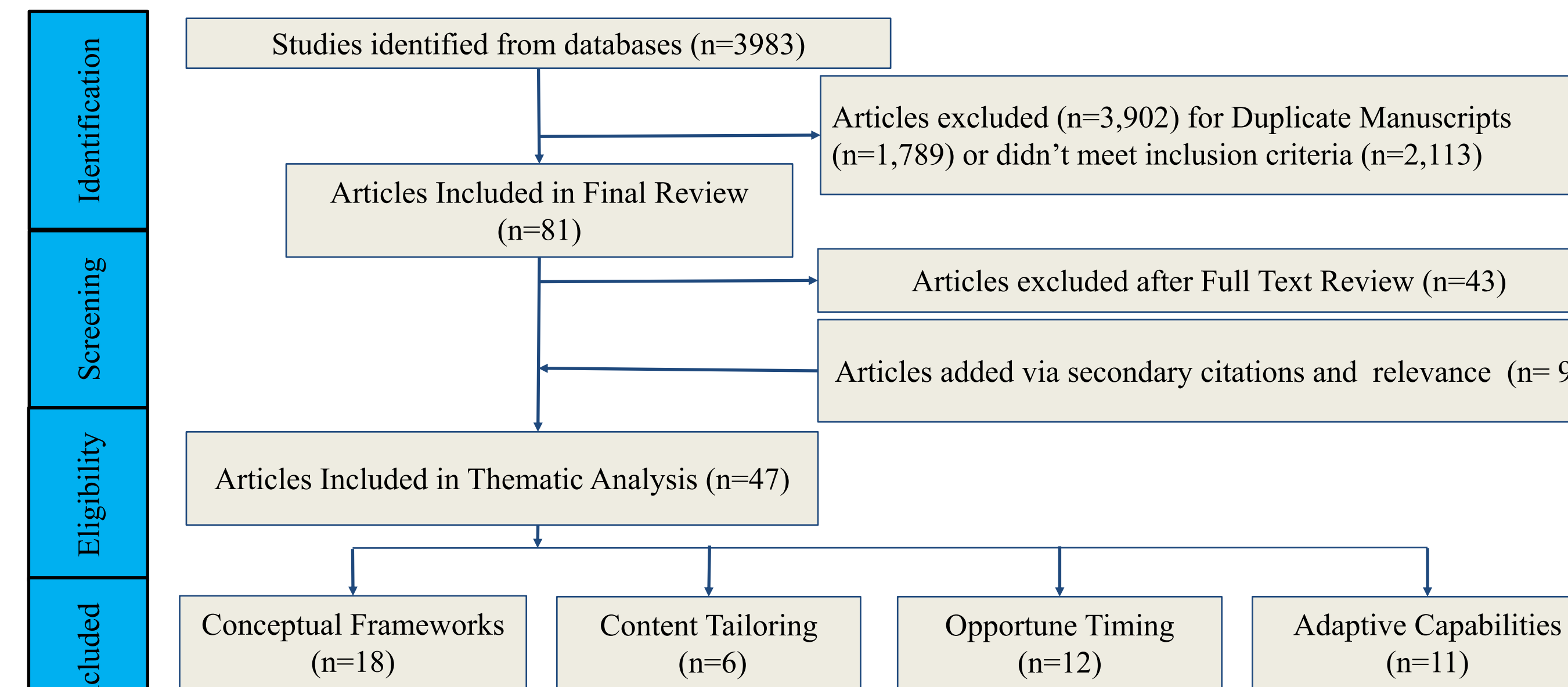


Figure 3. PRISMA diagram of the research performed

RESULTS

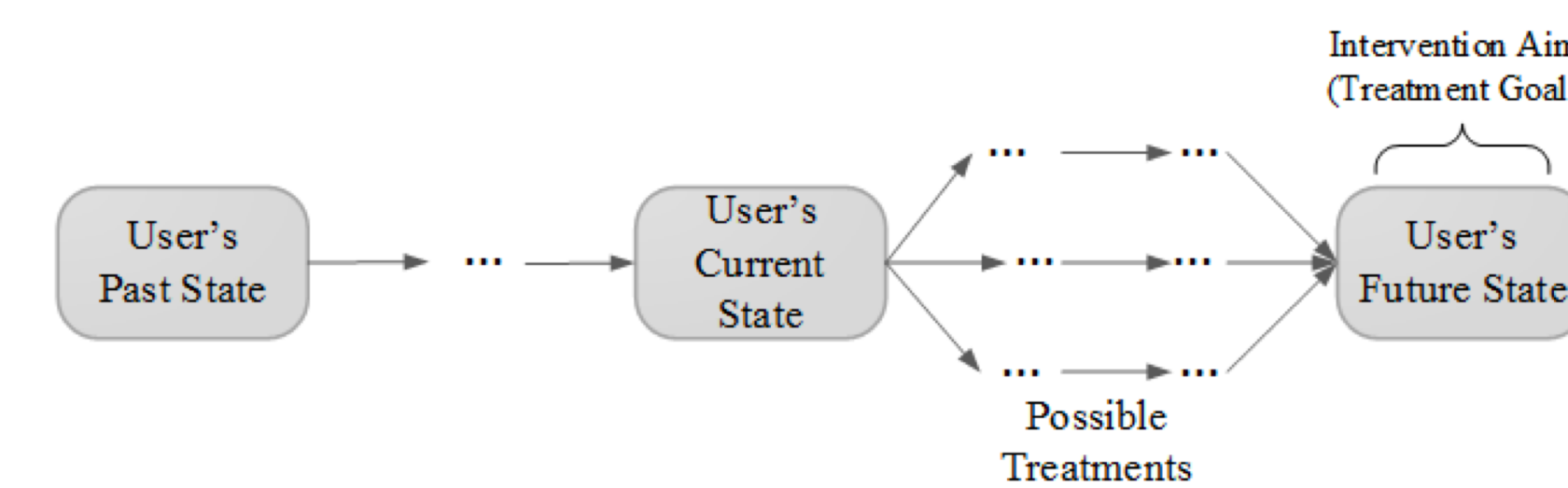


Figure 4. How Behavioral Intervention Technology assess behavior change adopted from (Mohr et al., 2014)

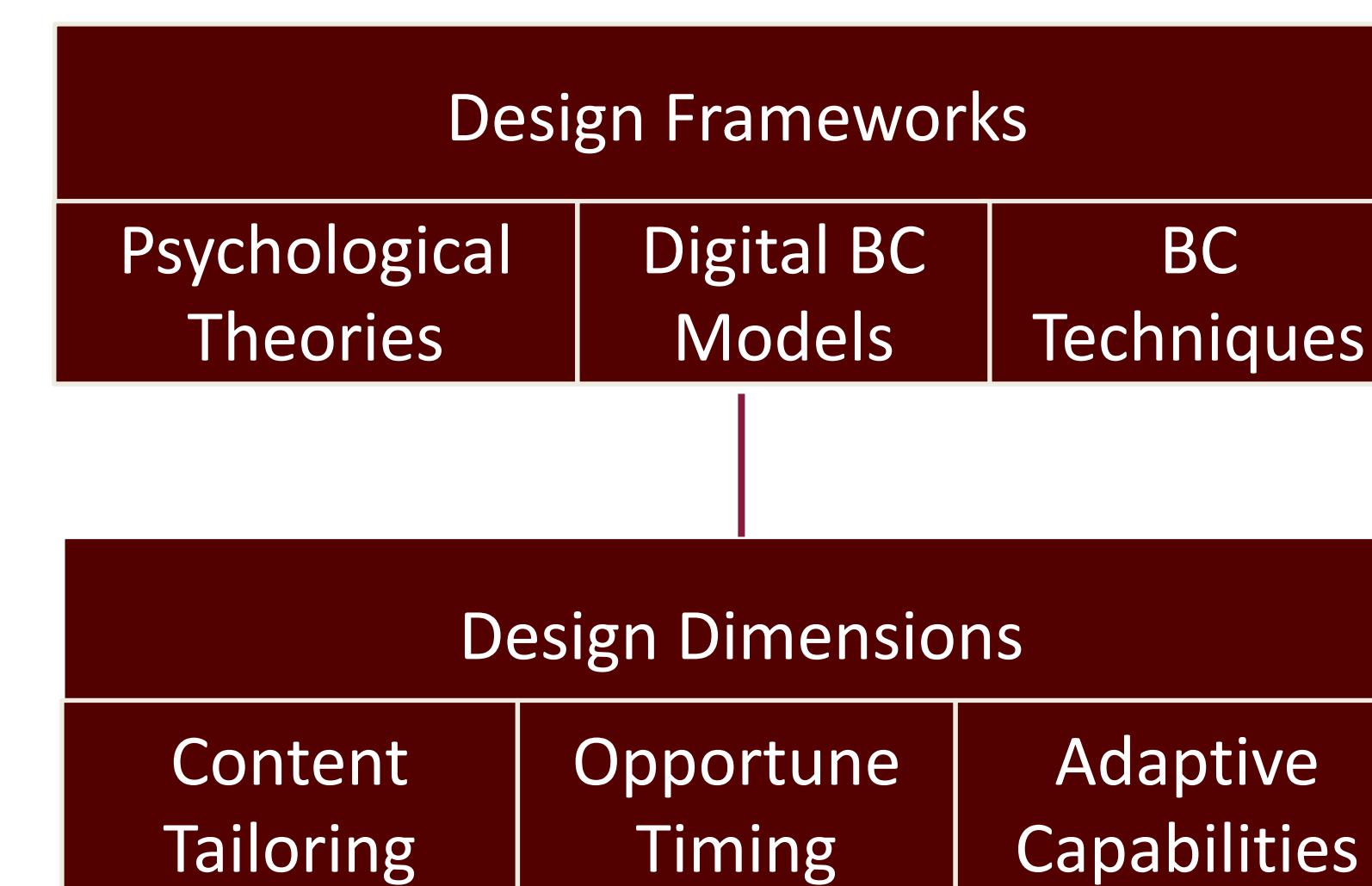


Figure 5. Main Components of an mHealth Behavior Change Intervention

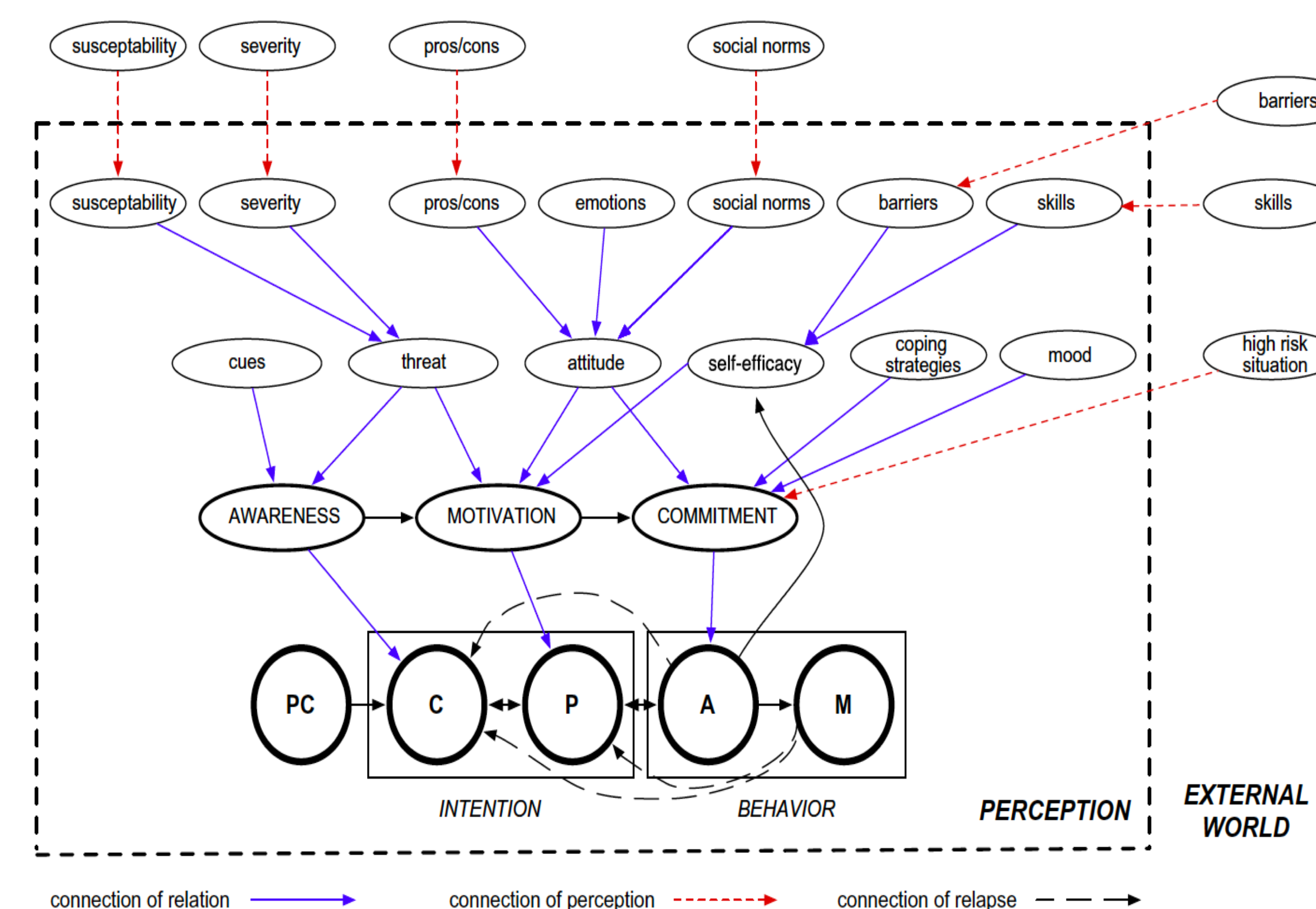


Figure 6. Depiction of how user's behavioral constructs affect behavior (Klein et al., 2014)

DISCUSSION

An intervention design consists of a Conceptual Framework and Design Dimensions.

Conceptual frameworks

- Guide the design of an intervention by incorporating various complementary behavioral theories and models
 - Help understand how to arrive at the desired behavior
- Design Dimensions** consist of:
- Content tailoring** that highlights the importance of personalizing intervention content displayed to the user.
 - Opportune Timing**-based design utilizes sensors to gather information about the user's current state in order to generate a timely interaction.
 - Adaptive Capabilities** account for external and internal changes that affect the user's behavior, and adapt set goals

- No comparison across the different design dimensions
- Absence of research investigating the effectiveness of a comprehensive framework

FUTURE WORK

- Authors recommend the inclusion of a unified framework that integrates the conceptual guidelines with all three design dimensions.
- Dimension of adaptive capabilities is in its infancy

Ultimately systems should be able to

- Predict user engagement and its contributing factors without obtrusively soliciting feedback from the user.
- Anticipate changes and adapt the intervention to mitigate any threats to the user's engagement