

# **HOW TO APPLY THE MULTIPHASE OPTIMIZATION STRATEGY (MOST) IN YOUR INTERVENTION DEVELOPMENT RESEARCH**

**Module 2**  
**The preparation phase: Laying the foundation for successful  
optimization**

**Lesson 3: The causal part of the conceptual model**



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**Intervention Optimization Initiative**

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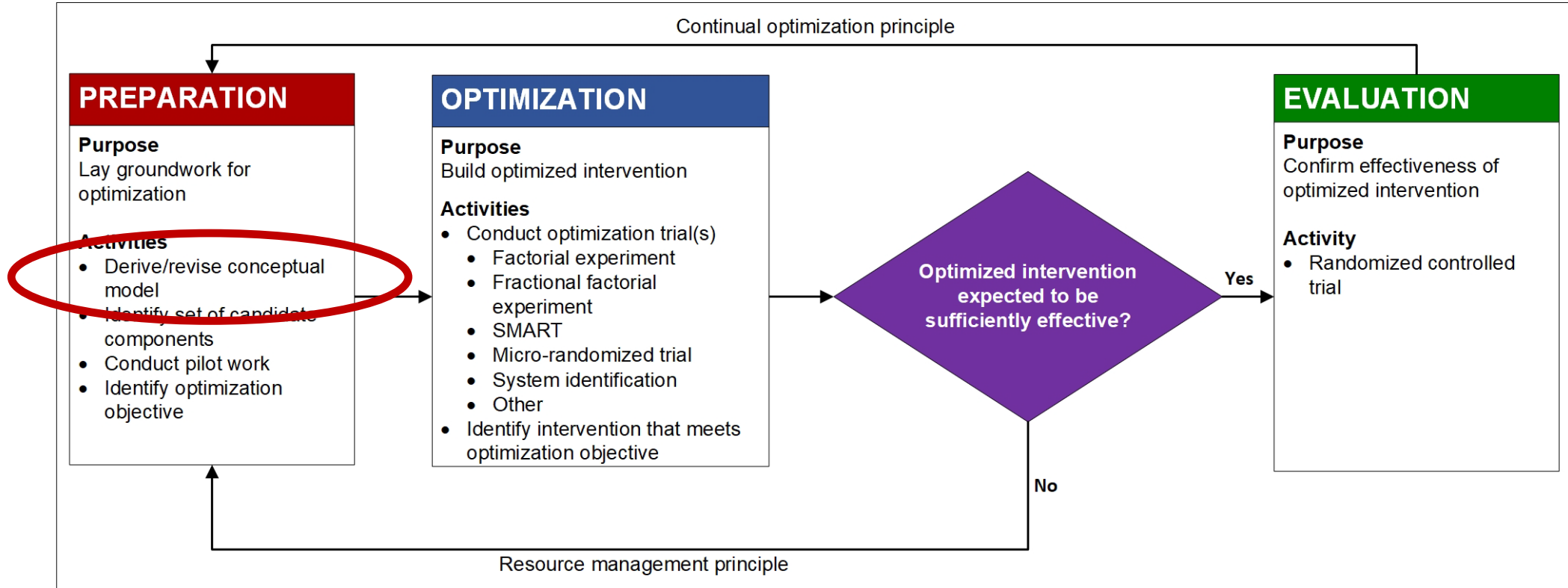
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# **In the previous lesson you learned how to:**

- Explain best practices for development of a conceptual model, including
  - The role of theory and empirical findings
  - The level of specificity needed
  - The importance of forward engineering
  - How to deal with participant heterogeneity



**Flow chart of the three phases of the multiphase optimization strategy (MOST). Rectangle = action. Diamond = decision.**

Figure adapted from Collins (2018)

# **In this lesson you will learn how to:**

- Create the causal part of a conceptual model
- Use the causal part of the conceptual model to help identify what intervention components are needed

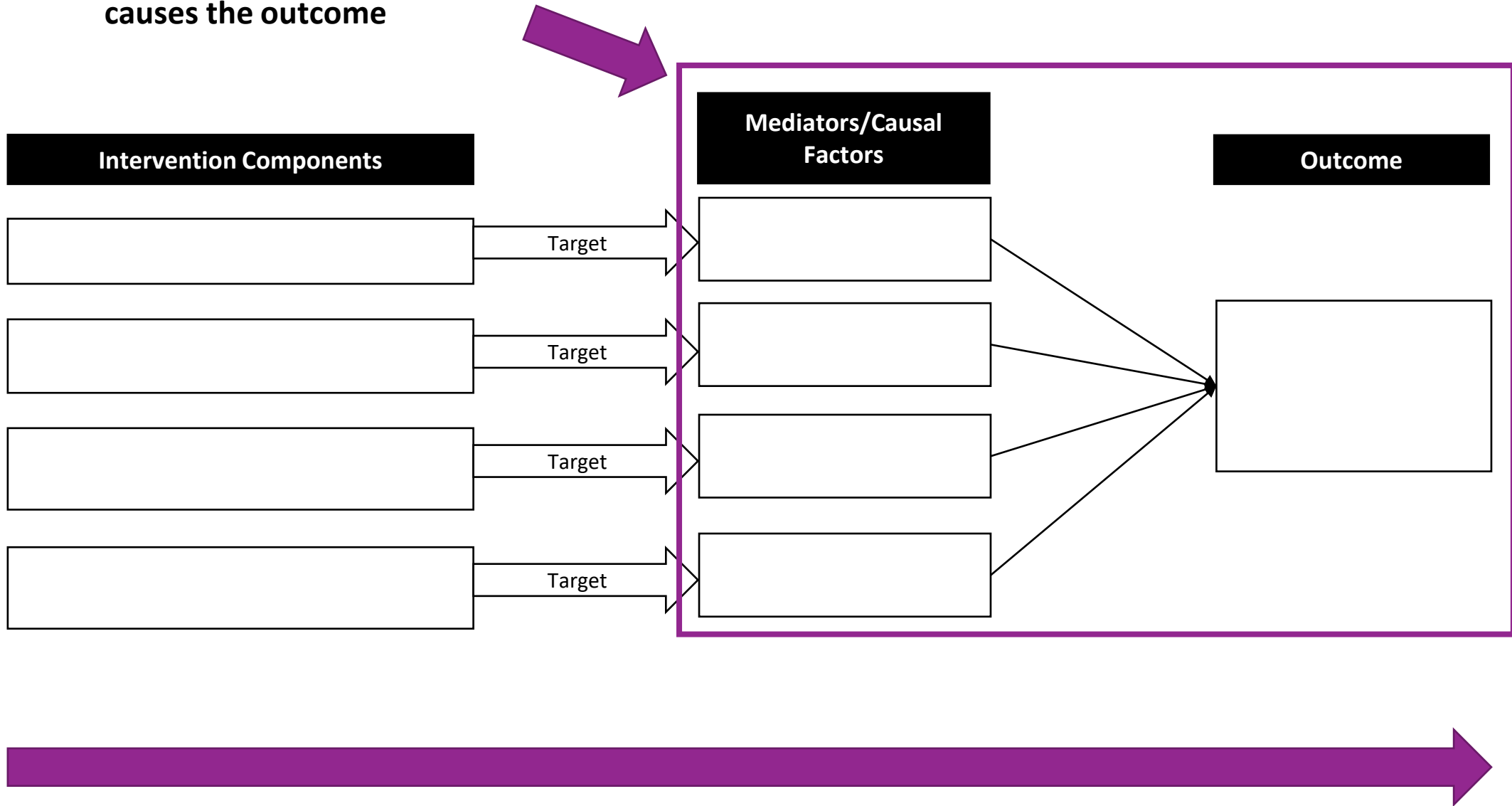
# A conceptual model is... (Part 1)

- ...a causal model of the behavioral, biobehavioral, biomedical, or social-structural process to be intervened upon
  - All of what is known or hypothesized...
- AND

# A conceptual model is... (Part 2)

- ...a description of exactly how the intervention under development is to intervene on this process
  - In particular, an explanation of the role each candidate component is expected to play
  - A description of the “engine” that drives the intervention

The part in the square is a model of **what causes the outcome**



A generic outline of a conceptual model



# **Hypothetical example: Reduction of HIV viral load in people who drink heavily**

- Adapted from hypothetical conceptual model in Collins, L.M., Kugler, K.C., & Gwadz, M.V. (2016).

# **Hypothetical example:**

## **Reduction of HIV viral load in people who drink heavily**

- People living with HIV who drink heavily are vulnerable because
  - Tend to be less adherent to treatment regimen
  - Alcohol use is associated with increased viral load

The part in the box is a model of **what causes the outcome**

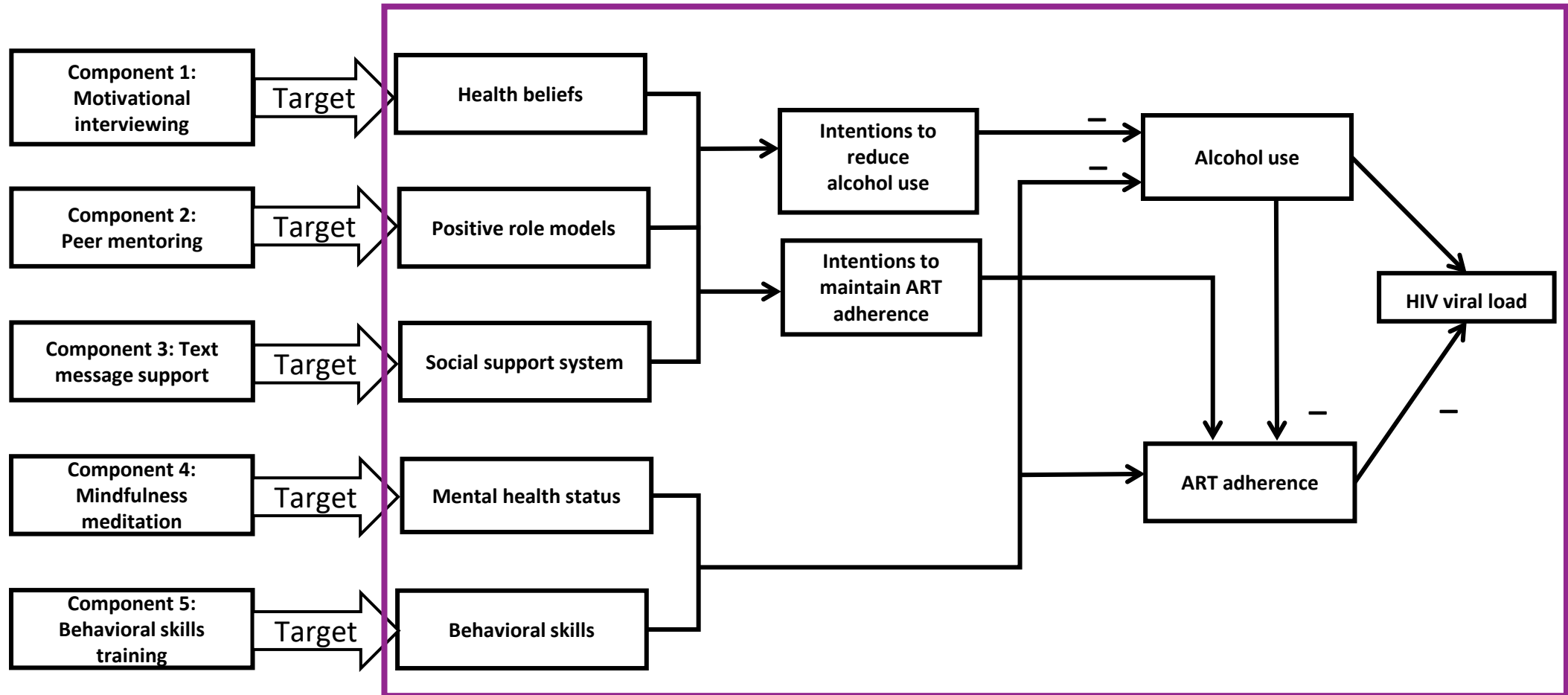
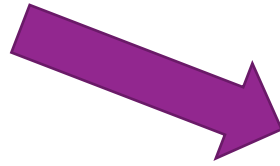


Figure adapted from Collins, L.M., Kugler, K.C., & Gwadz, M.V. (2016)

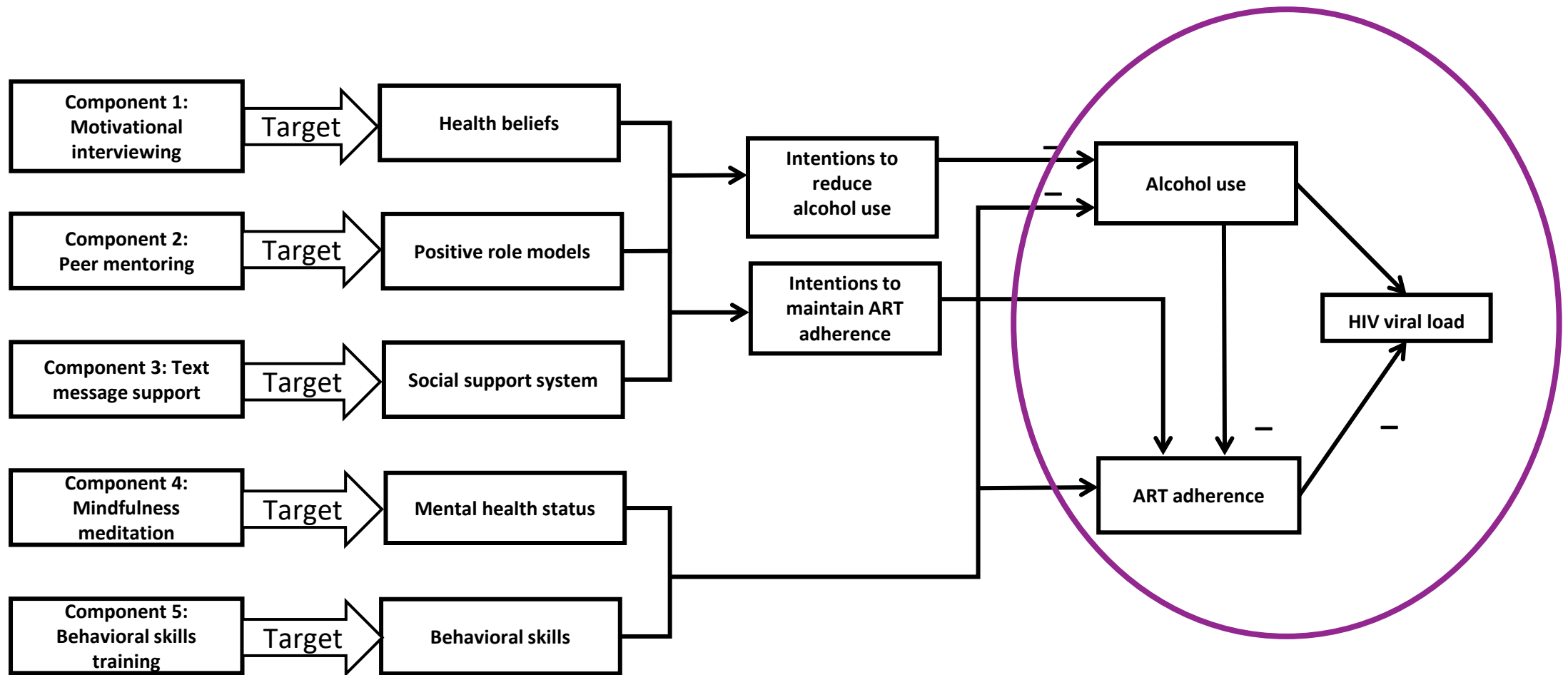


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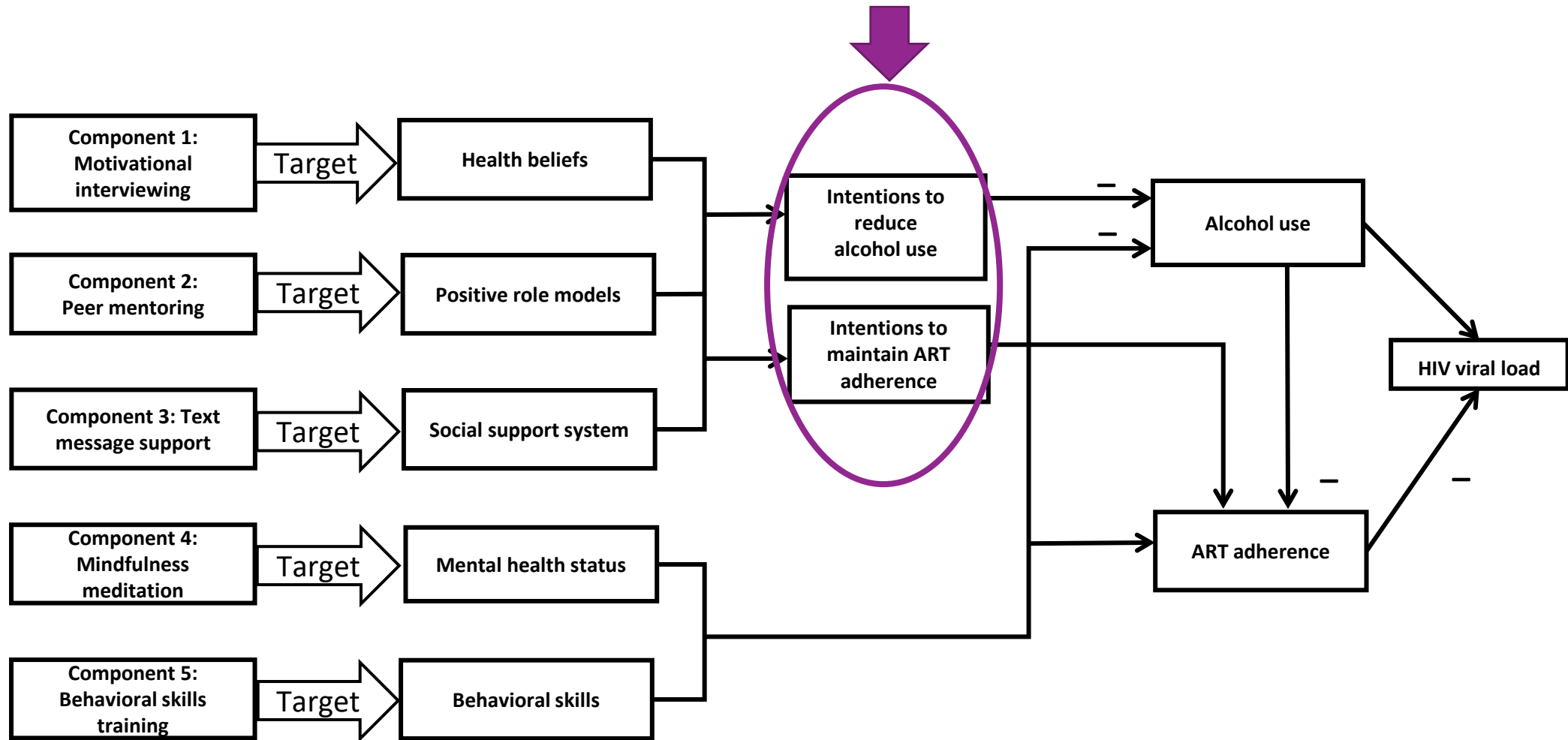


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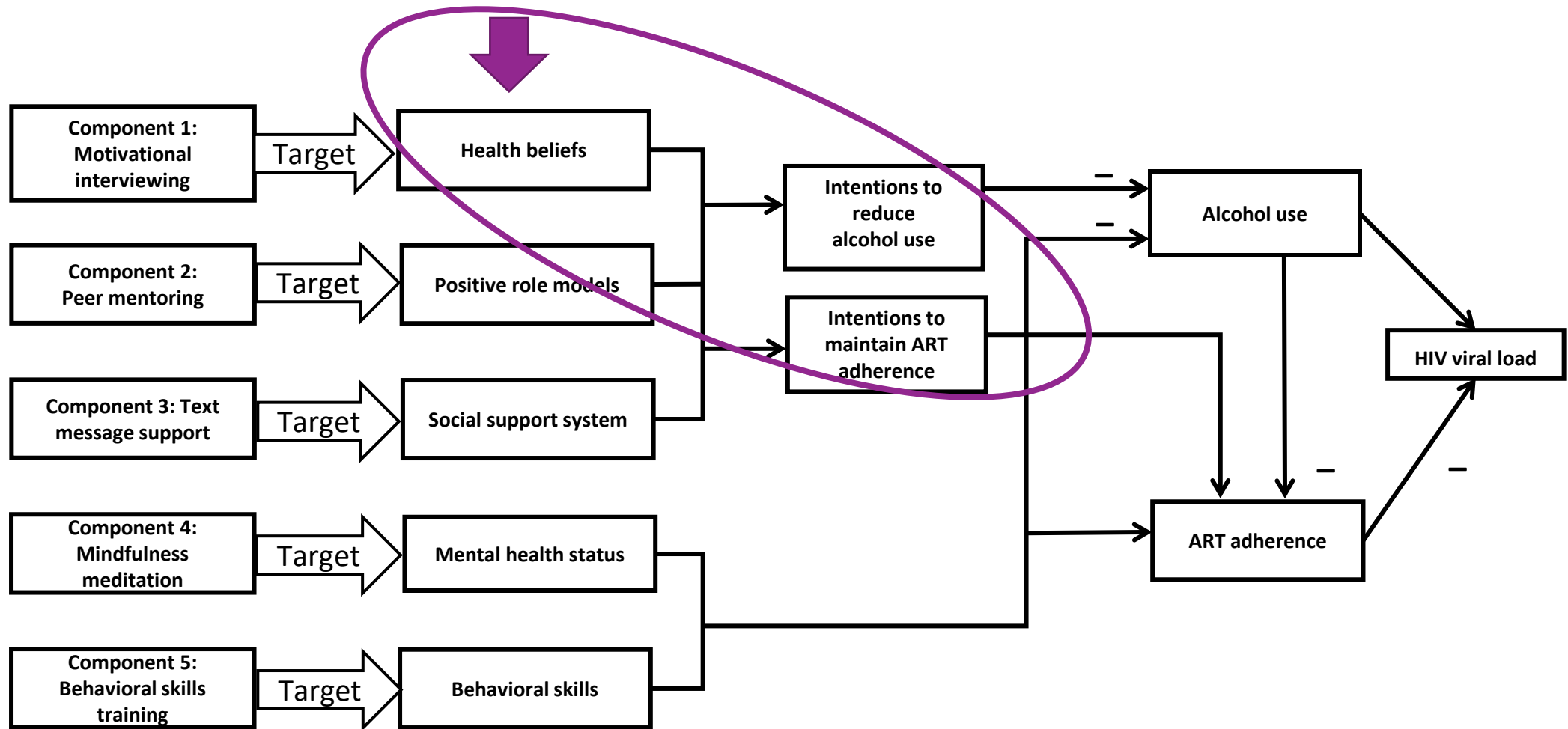


Figure adapted from Collins, L.M., Kugler, K.C., & Gwadz, M.V. (2016)

Contact with positive role models hypothesized to affect intentions  
(Bandura, 1977; Purcell et al., 2007)

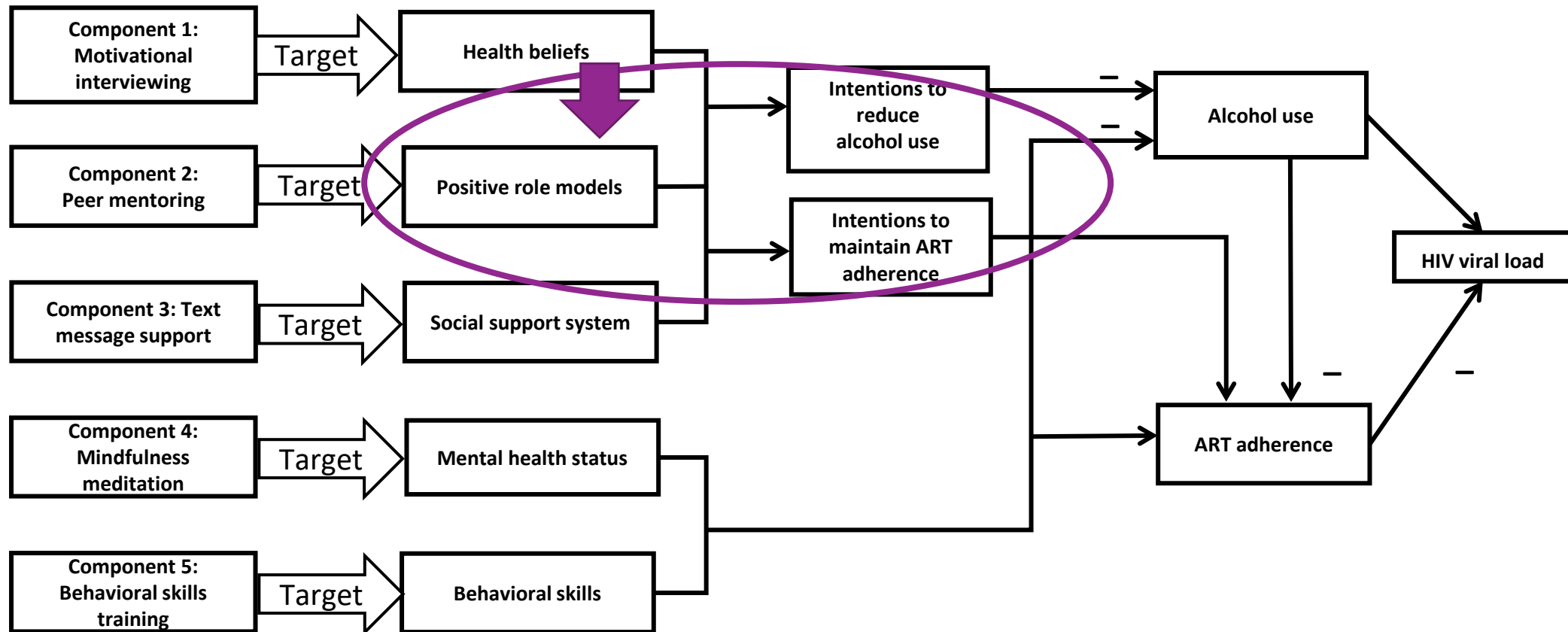


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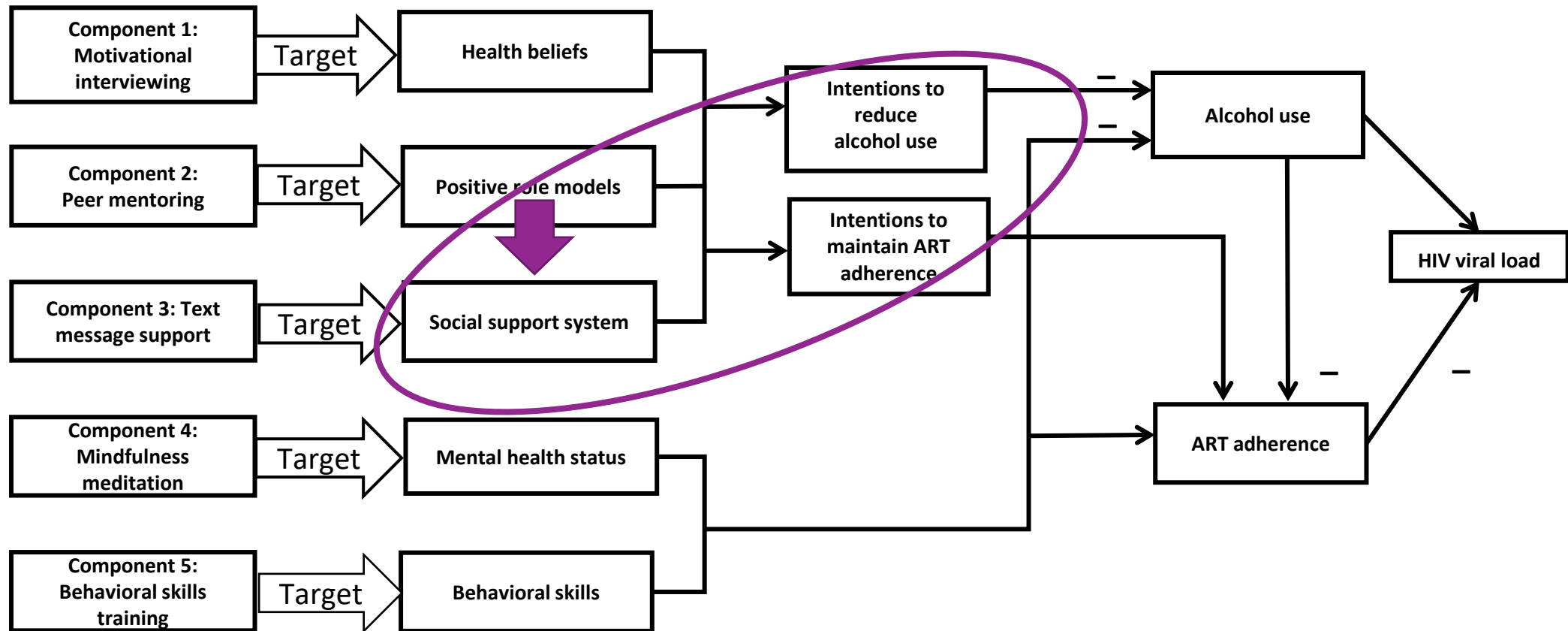


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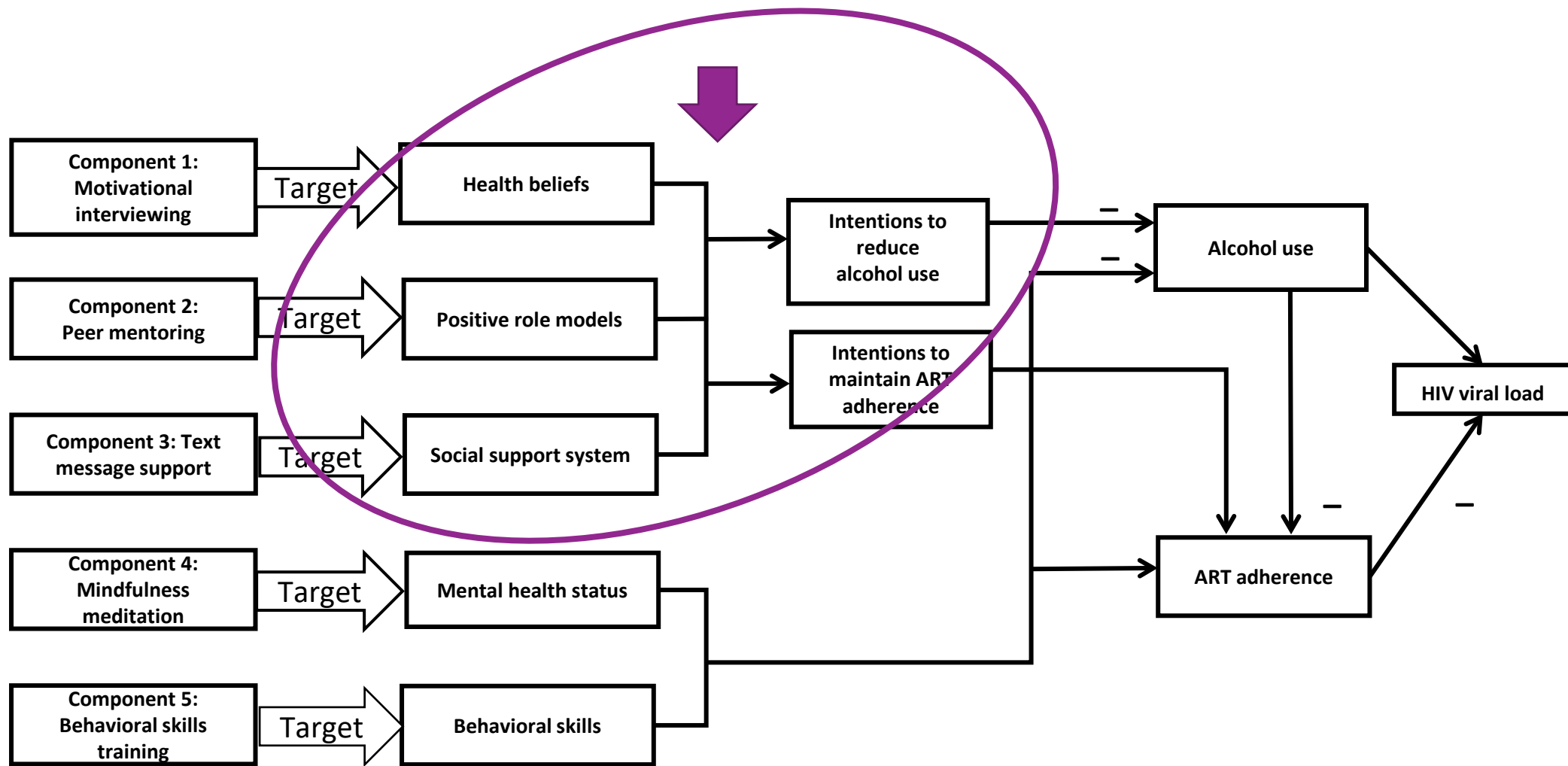
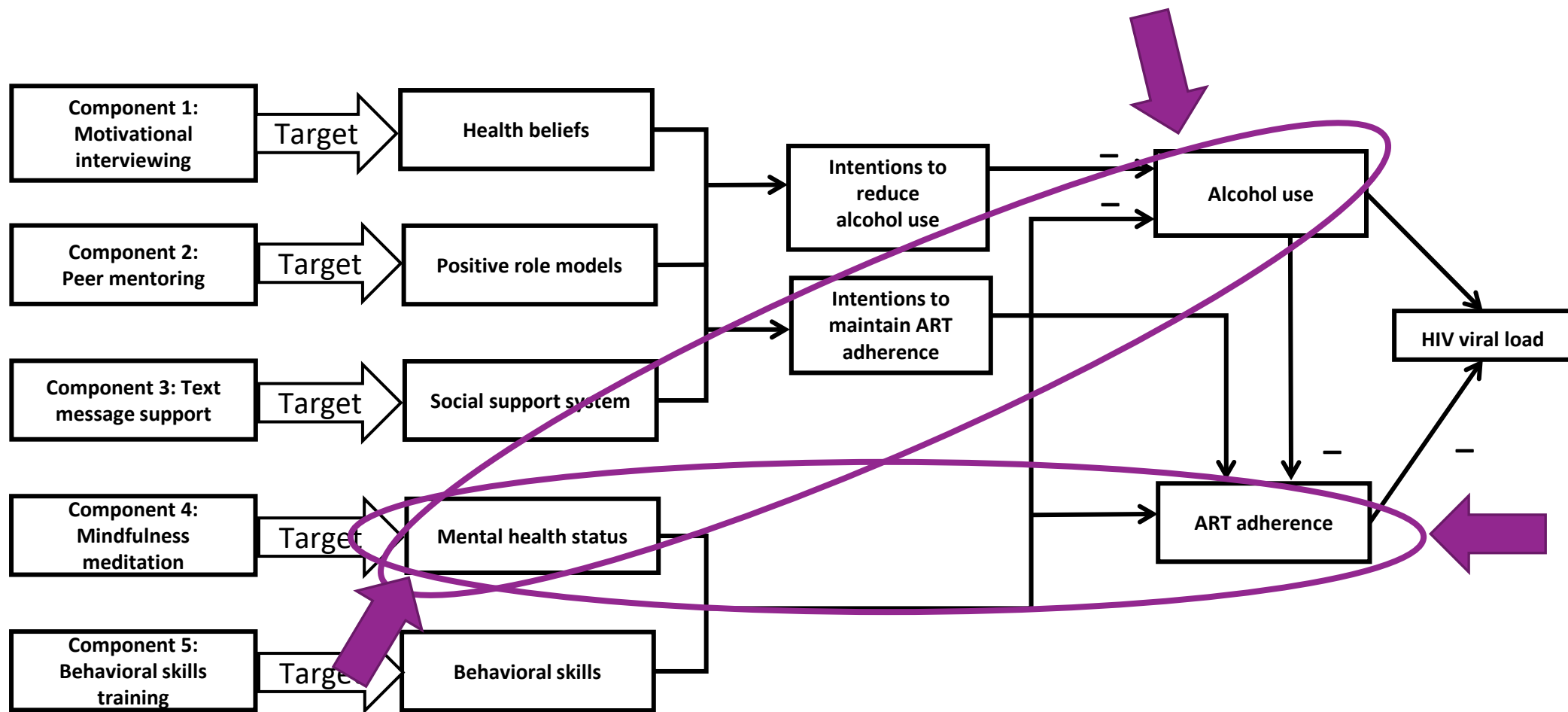


Figure adapted from Collins, L.M., Kugler, K.C., & Gwadz, M.V. (2016)



Mental health status=LACK OF perceived stress, anxiety, depressive symptoms

Figure adapted from Collins, L.M., Kugler, K.C., & Gwadz, M.V. (2016)

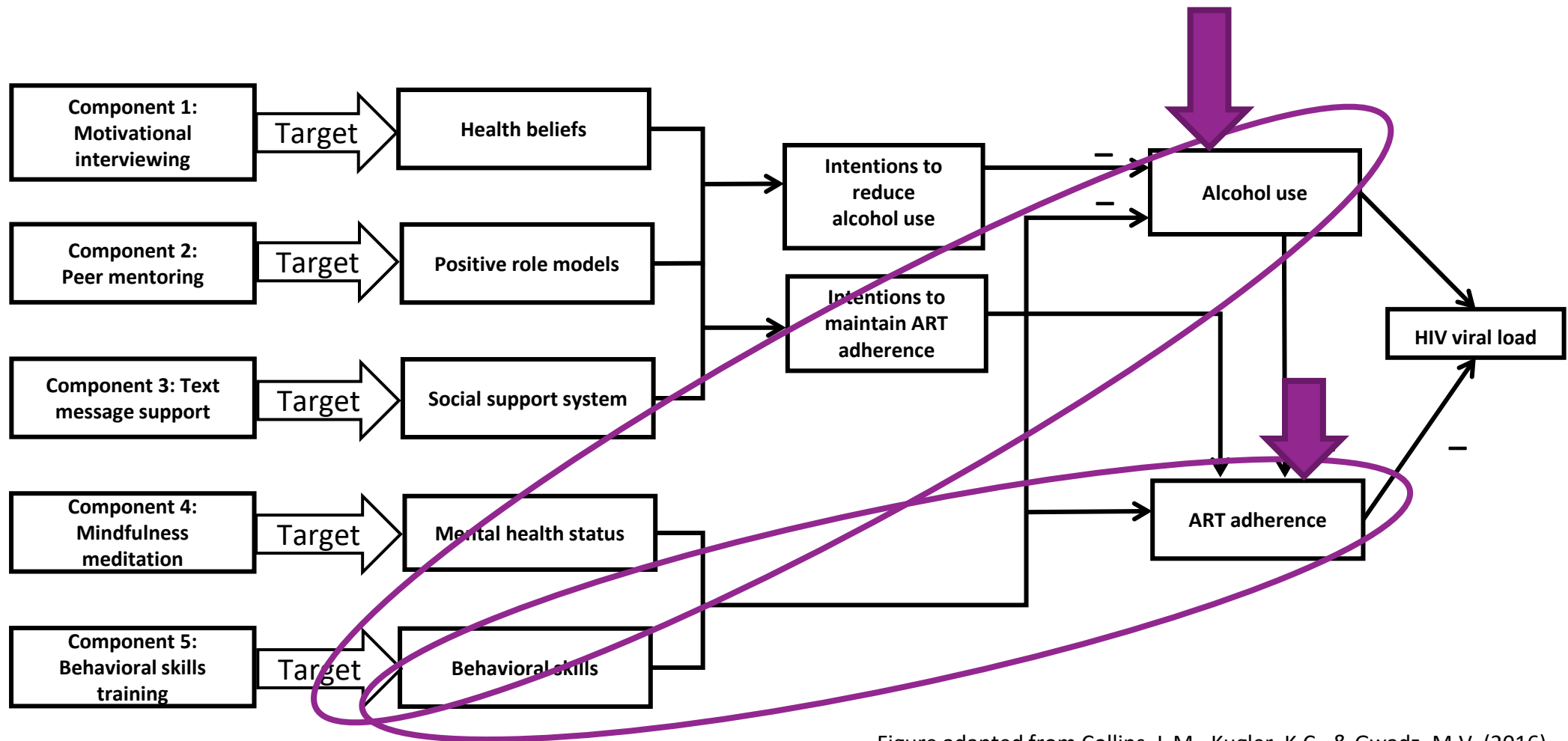


Figure adapted from Collins, L.M., Kugler, K.C., & Gwadz, M.V. (2016)

# Where do intervention components come from?

- A frequent question: “How do I start identifying candidate components?”
- Start by developing the causal part of the conceptual model

The part in the box is a model of **what causes the outcome**

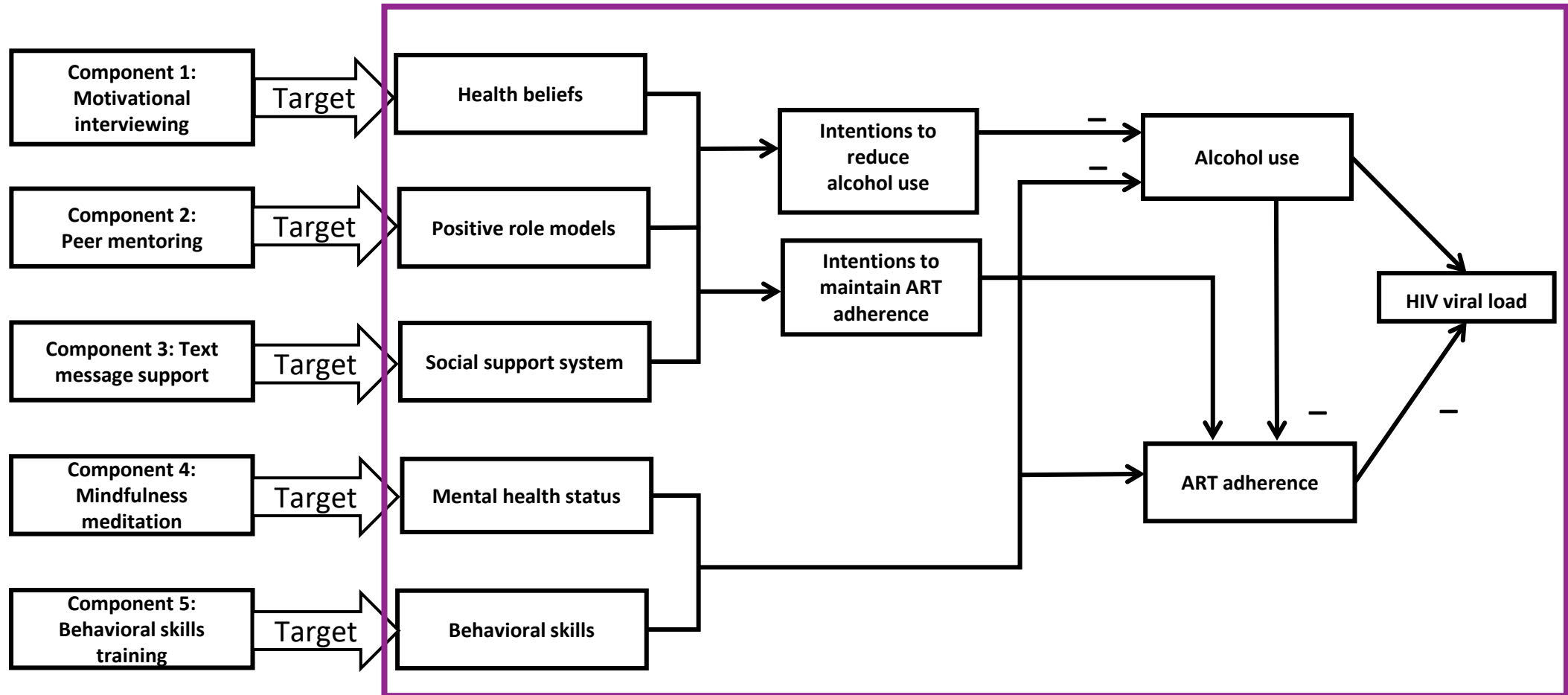
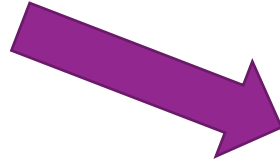


Figure adapted from Collins, L.M., Kugler, K.C., & Gwadz, M.V. (2016)

# Where do intervention components come from?

- The causal part of the conceptual model often indicates to which causal factors the intervention component should be aimed
- The exact strategy and content of each component will then be determined by behavior change theory

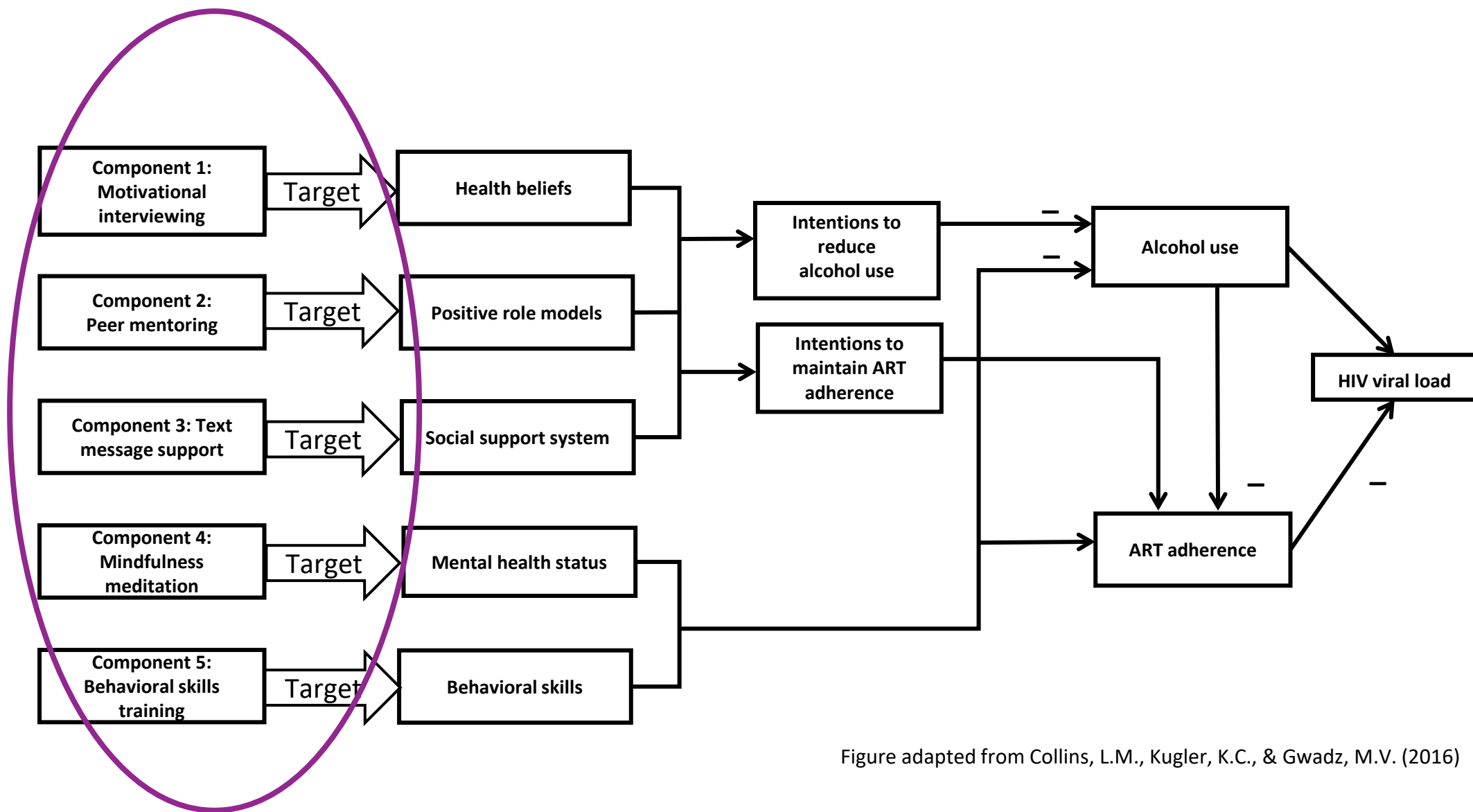


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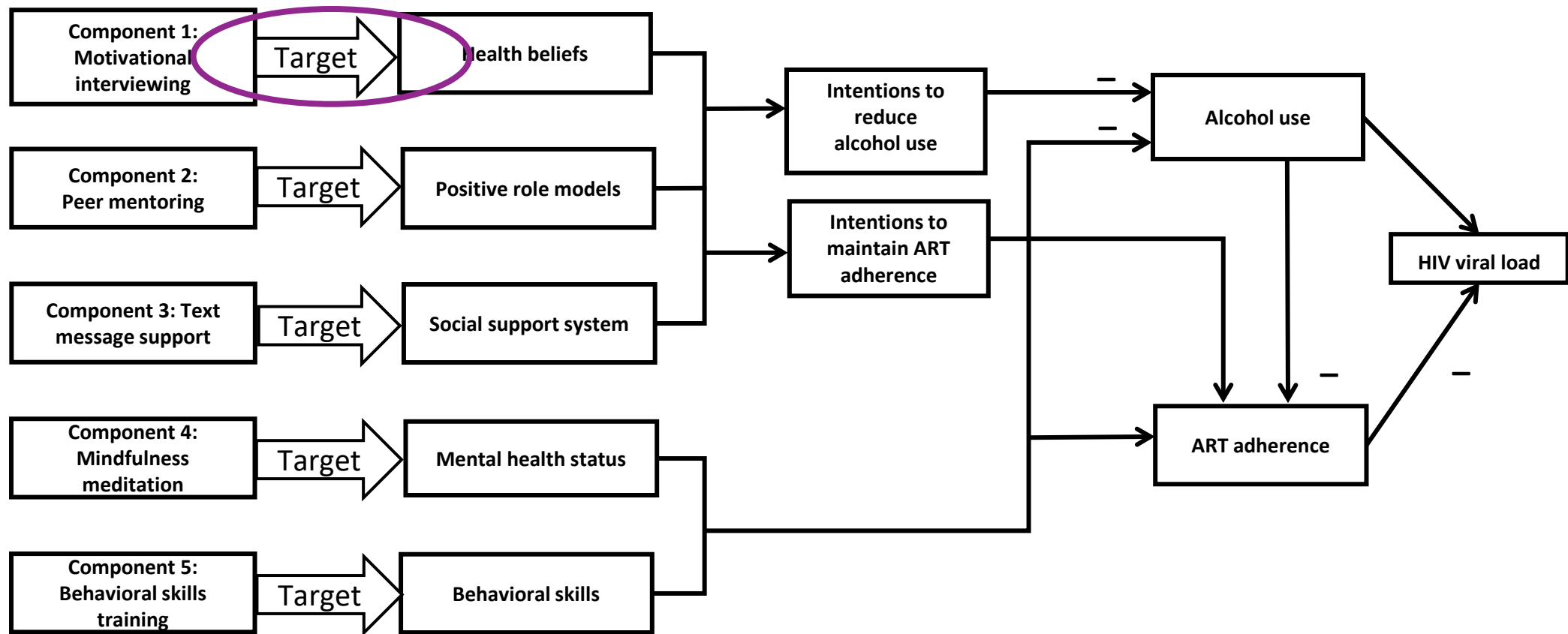


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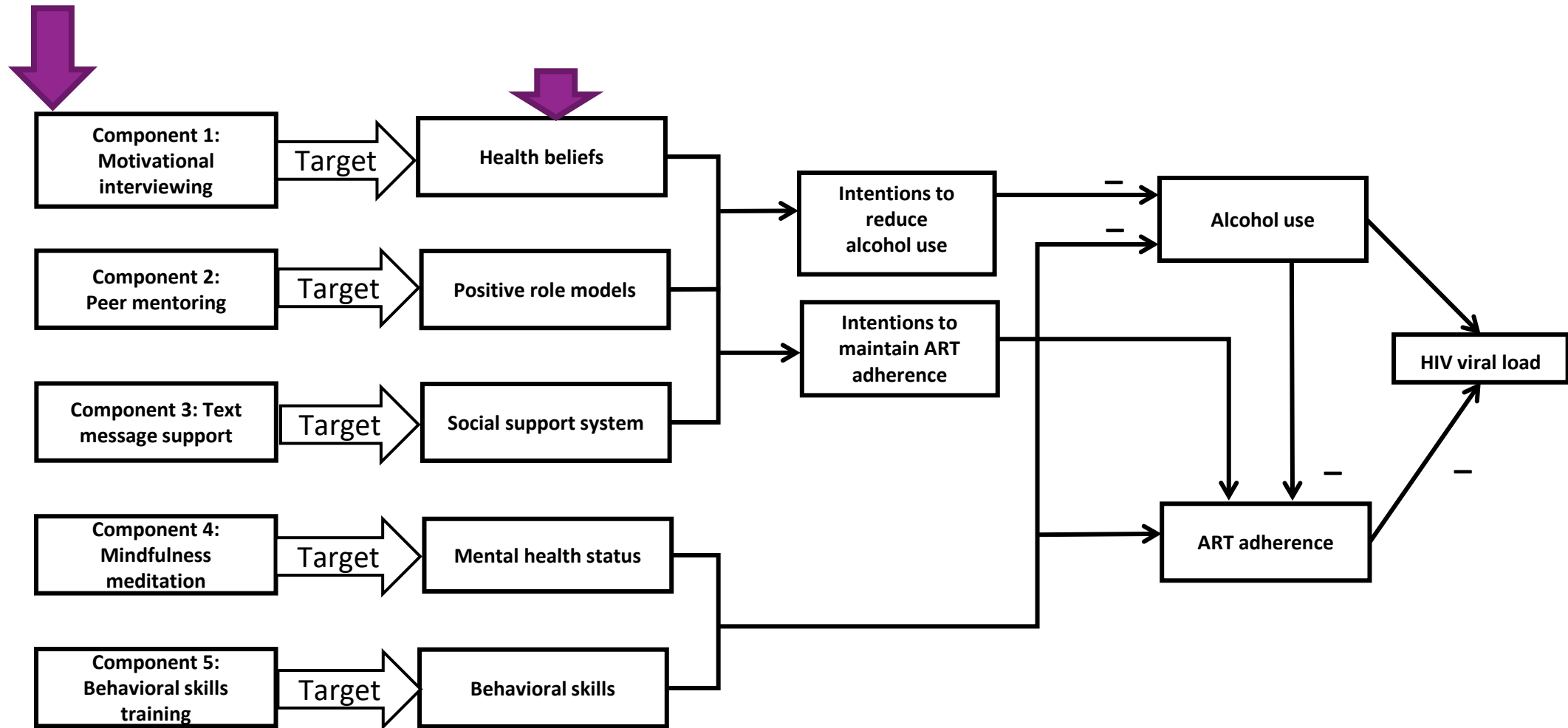


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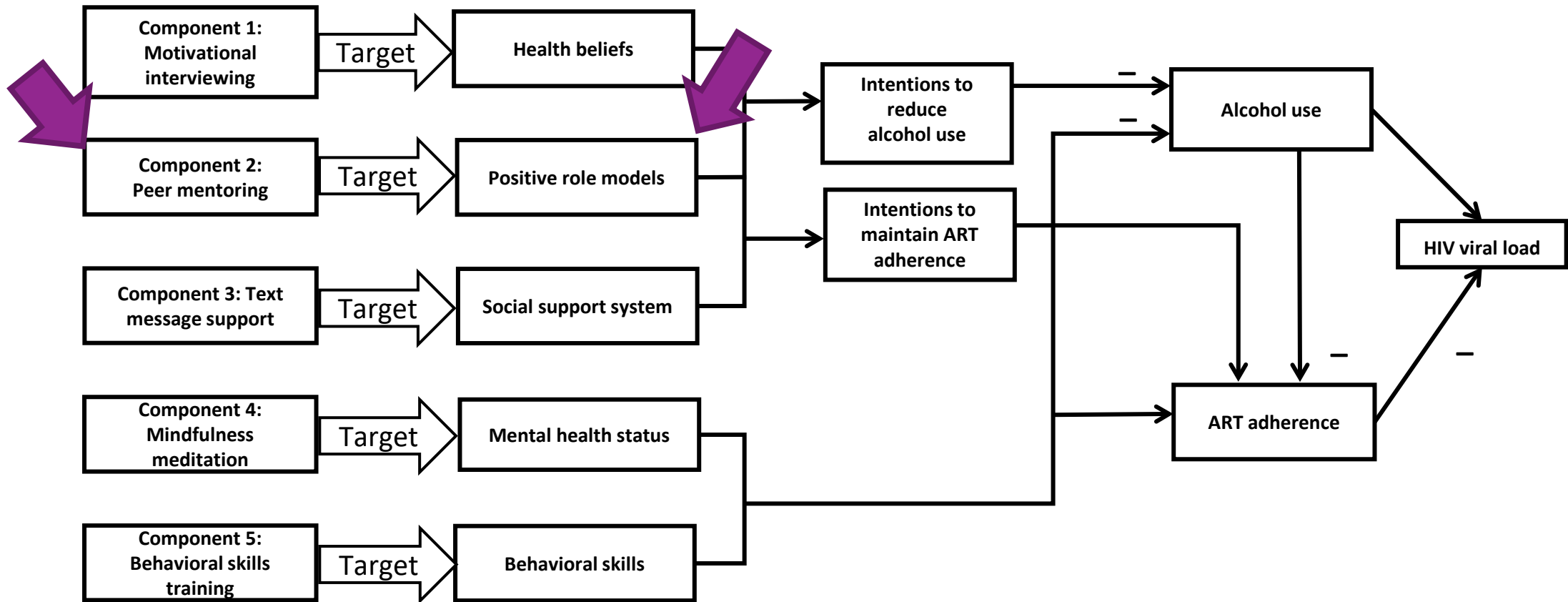


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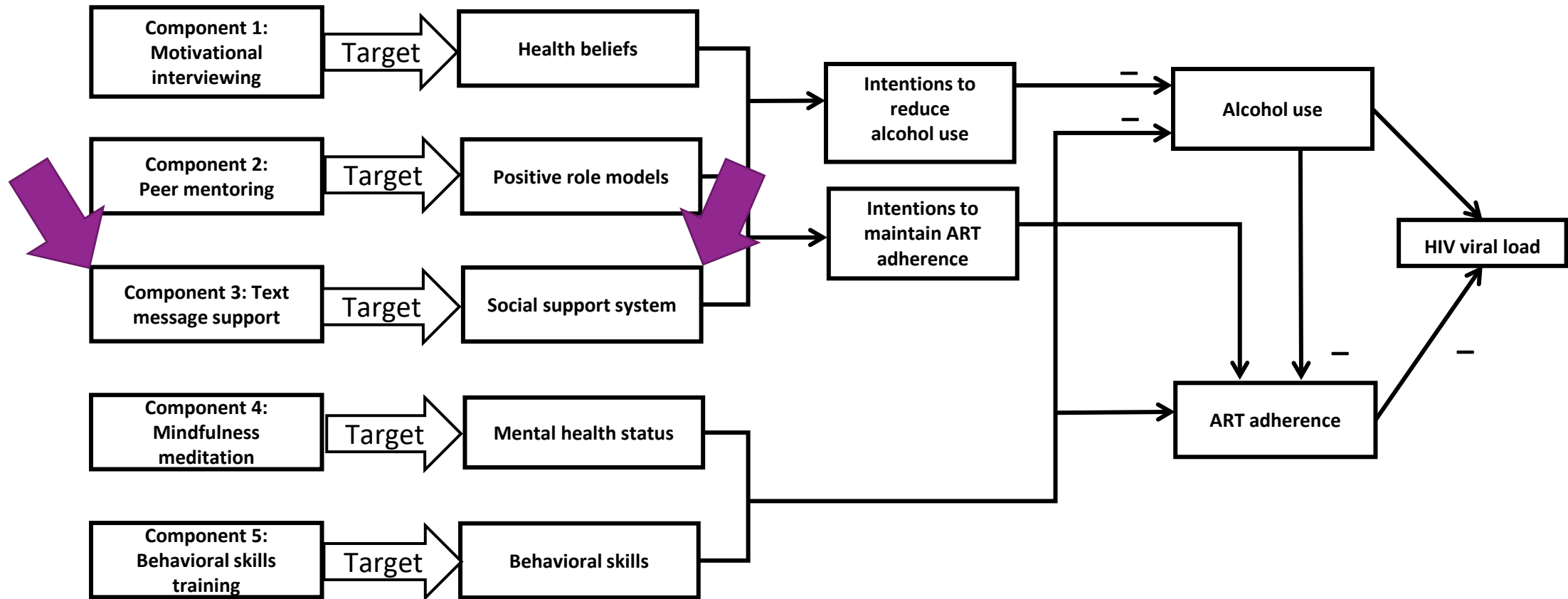


Figure adapted from Collins, L.M., Kugler, K.C., & Gwadz, M.V. (2016)

Training in mindfulness meditation practices intended to reduce stress and improve mental health. Included because majority of target population expected to exhibit clinically significant mental health distress.

Mindfulness meditation component mediated by mental health status.

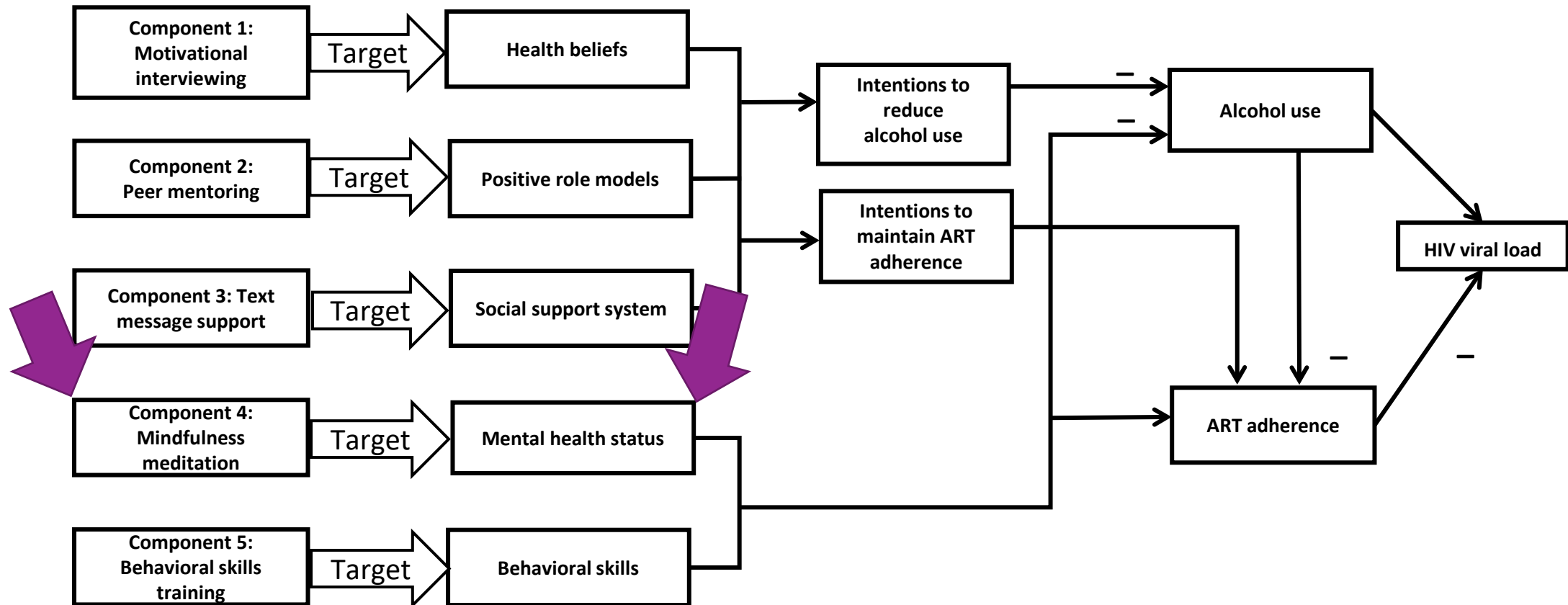


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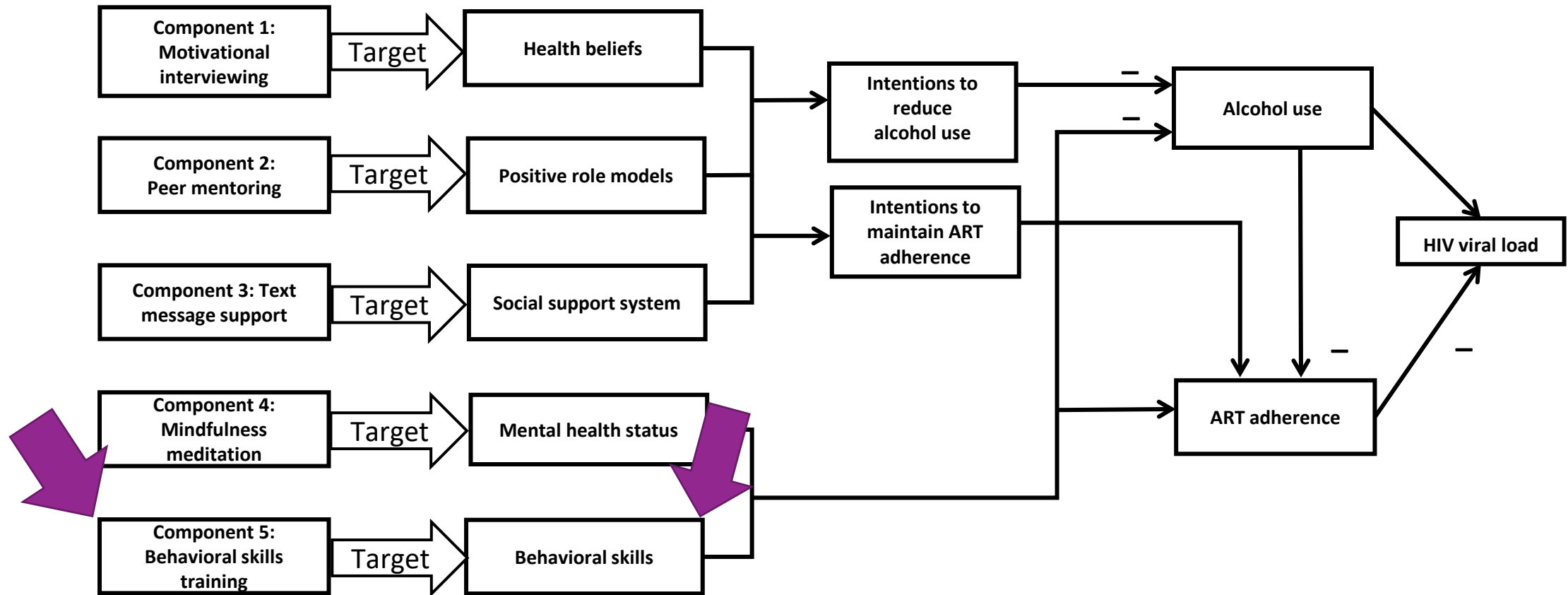


Figure adapted from Collins, L.M., Kugler, K.C., & Gwadz, M.V. (2016)

# **In this lesson you learned how to:**

- Create the causal part of a conceptual model
- Use the causal part of the conceptual model to help identify which intervention components are needed

# In the next lesson you will learn how to:

- Select an appropriate level of granularity for intervention components



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