

The Long-term Efficacy of Mental Illness Stigma Interventions on Cognitive, Behavioral, and Affective Stigma: A Systematic Meta-Analytic Review

Tuguldur L, Jennifer Na

Introduction

Public stigma around mental illness is associated with significant distress, diminished self esteem and quality of life above and beyond the effects of the disorder itself. Interventions are suggested to have small, albeit significant, effect sizes on reducing mental illness stigma overall. The current meta-analysis seeks to distinguish between long-term intervention effects on the cognitive, affective, and behavioral components of stigma.

Research Questions

1. What is the direction and magnitude of the overall effect of interventions (*after controlling for baseline level of stigma*)?
2. What are long-term the effects of interventions on distinct components of public stigma: cognitive, affective, and behavioural?

Rationale for Updated Meta-Analysis

- Meta-analysis of each stigma component
- Analysis of long-term effects
- More rigid inclusion criteria: Controlled studies & pre- and post- and follow-up outcome data

Method

Study election

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none">• Intervention for public stigma of mental illness• Presence of control group• Random Assignment• Pre-, Post- and Follow-up Measures• English	<ul style="list-style-type: none">• Review/Meta-analysis• Correlational/Qualitative study• Experimental studies that don’t include interventions• Interventions for self-stigma• Incomplete data (e.g., reporting only significant results)

From the initial literature conducted in January 2017, 120 studies were reviewed in full. An updated literature search was conducted in September 2019 and 161 studies were reviewed in full text. Out of the studies, 21 articles meeting the inclusion and inclusion criteria were selected for the meta-analysis.

Coding

Each study was coded on the following characteristics: sample characteristics (i.e., demographics, age, gender, continent); design characteristics (i.e., time of post-, follow-up measure, randomization method, control type); intervention characteristics (i.e., duration, format, setting); stigma outcome (i.e., cognitive, affective, behavioral stigma).

Effect Size Calculation

- Hedge’s g was calculated for each study
- Positive effect sizes = Intervention condition performed better than the control condition
- Negative effect sizes = Control condition outperformed the intervention condition.
- Effect sizes were interpreted following Cohen (1988)’s classification: small ($g = .20 - .49$), medium ($g = .50 - .79$), large ($g \geq .80$).
- Conducted using the Comprehensive Meta-Analysis Software

$$g = \frac{M_1 - M_2}{S_{pooled}}$$
$$S_{pooled} = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$$

Result

Combined effect size for the all studies (k=15) that reported the long-term effects of intervention on **cognitive stigma** component was small and significant $g = 0.30$, 95% CI [0.154, 0.438], $Z = 4.095$, $p < .000$. The pooled effect size of the follow-up measure on cognitive stigma was lower than the pooled effects size of post-intervention measure ($g = 0.30$ vs. $g = 0.48$), which meant the intervention was less effective in the long-term. For the **affective outcome** of the intervention, the pooled effect size of all studies (k=6) was small and significant for the post-intervention calculation $g = 0.28$, but non-significant for the follow-up calculation $g = 0.20$, 95% CI [0.070, 0.466], $Z = 1.449$, $p < .147$. For all the studies (k=18) that reported **behavioral outcome** of the intervention, the pooled effect sizes were small and significant for both post-intervention $g = 0.54$ and follow-up calculation $g = 0.33$, 95% CI [0.155, 0.511], $Z = 3.659$, $p < .000$. As expected, the intervention on behavioural stigma was less effective in the long-term.

Discussion

The meta-analysis showed small but significant magnitude of change in interventions that targeted cognitive and behavioural stigma. The magnitude of change in interventions targeting affective stigma was significant in the short term but proved to be nonsignificant over time. This could be due to the small number of studies investigating affective stigma component. Only 6 out of 21 studies looked at affective stigma, making it the least targeted stigma component. None of the studies reported booster sessions between post and follow-up measure. Overall, the interventions on cognitive stigma seem better able to retain its effectiveness in the long term, the difference between post- and follow-up effect size was 0.18 for cognitive and 0.21 for behavioural. Our results further suggest the notion that interventions had small and significant changes in cognitive, affective, and behavioral stigma component.

Future Directions

Future interventions might benefit from adding booster session to strengthen the effectiveness of the initial intervention. Lack of booster session may explain why most interventions consistently have the small effect sizes. Currently, there is a lack of research investigating the affective component of public stigma. Due to the lack of research, it’s hard to derive conclusions about whether the current interventions are effective in reducing affective stigma.

Acknowledgement

I want to thank my supervisor Jennifer Na, who have helped with every step of the meta-analysis, and Dr Amori Mikami, who made it possible.

Stigma Outcome	Hedge’s G (Post-)	Hedge’s G (Follow-Up)
Cognitive	0.48	0.30
Affective	0.28	0.20
Behavioral	0.54	0.33
Sample Characteristics		
Age	27.12 (3 unreported)	
Gender	59.91% Female	
Continent	North America 33.33%; Asia 23.80 %; Australia 23.80%; Europe 19.04%	
Design characteristics		
Time of measure	Post 3.25 days; Follow-up 86 days	
Randomizati on method	Randomized 57.6%; Cluster Randomized 38.09%; Convenience Sampling= 4.76%	
Control type	Waitlist 28.57%; No Intervention 47.6%; Treatment as usual 14.28%; Active. Control 4.67%; Unreported 4.76%	
Intervention Characteristics		
Duration	6.7 hours (2 not reported)	
Type	Education 61.90%; Contact 28.57%; Combined 14.28%	
Format	Individual 38.09%; Group 61.90%	
Setting	University 42.85%; Workplace 9.52%; Online 14.28%; School 19.04%; Hospital 4.76%; Unreported 9.52%	

