



WWC Single Study Review

A review of the design and summary of findings for an individual study



January 2016

WWC Review of the Report “A Brief Social-Belonging Intervention Improves Academic and Health Outcomes of Minority Students”¹

The findings from this review do not reflect the full body of research evidence on social-belonging interventions.

What is this study about?

The study authors examined the effects of an intervention aimed at bolstering freshman college students’ sense of social belonging and reducing student perceptions of social isolation on academic achievement. In the intervention group, students reviewed narratives provided by the researcher that purportedly described the experiences of upper-level students at the same selective university attended by the participating students. The narratives were intended to persuade students to attribute adversity to common and transient aspects of transitioning to college, rather than something unique to themselves or their ethnic group. Additional activities (i.e., writing an essay and creating a video testimonial) were employed to help students internalize the message. The intervention was expected to be particularly beneficial for Black students, who may perceive more social isolation in predominantly White colleges.

Ninety-two undergraduate students at a selective university volunteered to participate in the study and were randomly assigned to either the intervention condition (25 Black, 25 White) or the comparison condition (24 Black, 18 White) during the spring term of their freshman year.

Students in the intervention condition received the intervention in the research lab, which lasted about 1 hour. Students in the comparison condition also

reviewed narratives putatively written by upper-level students, but these narratives focused on topics unrelated to social belonging.

Study authors reported the impact of the intervention on cumulative grade point averages (GPAs) obtained at the end of the spring term of the students’ senior year, 3 years after the intervention.²

Features of the Social-Belonging Intervention

The intervention aimed to lessen psychological perceptions of social threat on campus by framing social adversity as temporary and common among students of all backgrounds. Students in the intervention group were provided with specific narratives from the researchers that were purportedly survey responses about the college experiences of upper-level students at the university. Participating students read the narratives, which encouraged students to attribute adversity to common and transient aspects of transitioning to college, rather than something unique to themselves or their ethnic group. To help students internalize the message, participants were asked to write essays on how their personal experiences were reflected in the surveys and give a video testimonial of their experiences. The total time of the intervention was approximately 1 hour. Study authors expected the intervention to be more beneficial for Black students, who were a numeric minority at the selective institution where the study took place and who may have been more likely to experience social isolation.

What did the study find?

The effect of the social belonging intervention on cumulative senior year GPAs was substantively important but not statistically significant for the overall sample of students.³ However, the study authors reported that there was a statistically significant positive effect on GPAs for Black students in the intervention condition, but not for White students. These findings were confirmed by the WWC. See Appendices C and D for more information about the findings from this study.

WWC Rating

The research described in this report meets WWC group design standards without reservations

This study is a well-executed randomized trial with low levels of student attrition.

Appendix A: Study details

Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes of minority students. *Science*, 331(6023), 1447–1451. doi:10.1126/science.1198364

Additional source:

Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology*, 92(1), 82–96.

Setting	The study took place at a selective university in the United States where Black students are a numeric minority.
Study sample	The students were in their second semester of their first year of postsecondary education in a selective college in the United States. In particular, the study focused on Black students and the effects of the intervention on this specific subgroup. Ninety-two students volunteered and were randomly assigned to conditions (50 intervention, 42 comparison). The final analytic sample was comprised of 37 Black students (19 intervention, 18 comparison) and 33 White students (20 intervention, 13 comparison).
Intervention group	The intervention aimed to lessen students' psychological perceptions of social threat on campus by framing social adversity as common and transient. Students in the intervention group read narratives from the researchers that purportedly described the social experiences of upper-level students at the university. The narratives encouraged students to attribute adversity to common and transient aspects of transitioning to college, rather than something unique to themselves or their ethnic group. The researchers used several steps to encourage the students to internalize the message, including having the students write an essay about their own experiences and give a video testimonial for future students. The total time of the intervention was approximately 1 hour.
Comparison group	The comparison participants also reported to the lab and were involved in similar procedures. However, the narratives these students received were unrelated to social belonging. The process for these students also took about 1 hour.
Outcomes and measurement	The study examined academic achievement as evaluated by cumulative student grade point averages (GPAs) collected from the university registrar with the permission of the students. For a more detailed description of this outcome measure, see Appendix B.
Support for implementation	Information is not available about the implementation or costs of the social-belonging intervention.
Reason for review	Several federal grant funding programs require that funding applications be supported by evidence of effectiveness based on WWC standards. This study was identified for review by the WWC because it was cited by a grant applicant.

Appendix B: Outcome measure for the academic achievement domain

Academic achievement

<i>Cumulative grade point average (GPA)</i>	Student GPAs were obtained from the university with the permission of the participating students. Study authors use first term freshman year GPAs as covariates in their primary analysis, which examined cumulative GPAs at the end of the students' senior years, 3 years after the intervention.
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Table Notes: The study also reports on survey results related to student health and well-being; these outcomes do not fit within any of the outcome domains specified as eligible in the review protocol. The study also reports on the proportion of students within the top or bottom 25% of the class; this outcome does not fall within an eligible outcome domain specified in the protocol.

Appendix C: Study findings for the academic achievement domain

Domain and outcome measure	Study sample	Sample size	Mean (standard deviation)		WWC calculations			p-value
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	
Academic achievement								
<i>Cumulative GPA</i>	Aggregate sample	70 students	3.55 (0.38)	3.48 (0.34)	0.07	0.27	+11	.26
Domain average for academic achievement						0.27	+11	Not statistically significant

Table Notes: For mean difference, effect size, and improvement index values reported in the table, a positive number favors the intervention group and a negative number favors the comparison group. The effect size is a standardized measure of the effect of an intervention on individual outcomes, representing the average change expected for all individuals who are given the intervention (measured in standard deviations of the outcome measure). The improvement index is an alternate presentation of the effect size, reflecting the change in an average individual's percentile rank that can be expected if the individual is given the intervention. The statistical significance of the study's domain average was determined by the WWC. Some statistics may not sum as expected due to rounding.

Study Notes: No corrections for clustering or multiple comparisons were needed. The effect size reported in the table was computed using information provided by the authors and employed a difference-in-differences approach, whereby the baseline GPA was subtracted from the cumulative GPA for each group before computing the mean difference (see the WWC Procedures and Standards Handbook, version 3.0). The p-value presented here was computed by the WWC. This study is characterized as having a substantively important positive effect because the mean effect is positive and not statistically significant, but is substantively important. The WWC considers an effect size greater than 0.25 standard deviations to be substantively important. For more information, please refer to the WWC Procedures and Standards Handbook (version 3.0), p. 26.

Appendix D: Supplemental findings for the academic achievement domain

Domain and outcome measure	Study sample	Sample size	Mean (standard deviation)		WWC calculations			p-value
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	
Academic achievement								
<i>Cumulative GPA</i>	Black students	37 students	3.49 (0.42)	3.34 (0.38)	0.15	0.68	+25	.01
<i>Cumulative GPA</i>	White students	33 students	3.64 (0.31)	3.61 (0.24)	0.03	-0.34	-13	.34

Table Notes: The supplemental findings presented in this table are additional findings that meet WWC design standards with or without reservations, but do not factor into the determination of the study rating. For mean difference, effect size, and improvement index values reported in the table, a positive number favors the intervention group and a negative number favors the comparison group. The effect size is a standardized measure of the effect of an intervention on individual outcomes, representing the average change expected for all individuals who are given the intervention (measured in standard deviations of the outcome measure). The improvement index is an alternate presentation of the effect size, reflecting the change in an average individual's percentile rank that can be expected if the individual is given the intervention. Some statistics may not sum as expected due to rounding.

Study Notes: No corrections for clustering or multiple comparisons were needed. The effect sizes reported in the table were computed using information provided by the authors and employed a difference-in-differences approach, whereby the baseline GPA was subtracted from the cumulative GPA for each group before computing the mean difference (see the WWC Procedures and Standards Handbook, version 3.0). The p-value for the Black subgroup was reported by the authors. The p-value for the White subgroup was computed by the WWC.

Endnotes

¹ Single study reviews examine evidence published in a study (supplemented, if necessary, by information obtained directly from the authors) to assess whether the study design meets WWC group design standards. The review reports the WWC's assessment of whether the study meets WWC group design standards and summarizes the study findings following WWC conventions for reporting evidence on effectiveness. This study was reviewed using the review protocol for Individual Studies in the Postsecondary Education topic area (version 3.1). The WWC rating applies only to the study outcomes that were eligible for review under this topic area. The reported analyses in this SSR are only for those eligible outcomes that either met WWC group design standards without reservations or met WWC group design standards with reservations, and do not necessarily apply to all results presented in the study.

² There were several outcomes included in the study that are not described in this WWC report. See the table notes in Appendix B for more information.

³ The effect size and statistical significance corresponding to the effect of the intervention on cumulative GPA for the aggregate sample were computed by the WWC using information supplied by the authors.

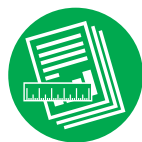
Recommended Citation

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Glossary of Terms

Attrition	Attrition occurs when an outcome variable is not available for all participants initially assigned to the intervention and comparison groups. The WWC considers the total attrition rate and the difference in attrition rates across groups within a study.
Clustering adjustment	If intervention assignment is made at a cluster level and the analysis is conducted at the student level, the WWC will adjust the statistical significance to account for this mismatch, if necessary.
Confounding factor	A confounding factor is a component of a study that is completely aligned with one of the study conditions, making it impossible to separate how much of the observed effect was due to the intervention and how much was due to the factor.
Design	The design of a study is the method by which intervention and comparison groups were assigned.
Domain	A domain is a group of closely related outcomes.
Effect size	The effect size is a measure of the magnitude of an effect. The WWC uses a standardized measure to facilitate comparisons across studies and outcomes.
Eligibility	A study is eligible for review if it falls within the scope of the review protocol and uses either an experimental or matched comparison group design.
Equivalence	A demonstration that the analytic sample groups are similar on observed characteristics defined in the review area protocol.
Improvement index	Along a percentile distribution of individuals, the improvement index represents the gain or loss of the average individual due to the intervention. As the average individual starts at the 50th percentile, the measure ranges from -50 to +50.
Multiple comparison adjustment	When a study includes multiple outcomes or comparison groups, the WWC will adjust the statistical significance to account for the multiple comparisons, if necessary.
Quasi-experimental design (QED)	A quasi-experimental design (QED) is a research design in which study participants are assigned to intervention and comparison groups through a process that is not random.
Randomized controlled trial (RCT)	A randomized controlled trial (RCT) is an experiment in which eligible study participants are randomly assigned to intervention and comparison groups.
Single-case design (SCD)	A research approach in which an outcome variable is measured repeatedly within and across different conditions that are defined by the presence or absence of an intervention.
Standard deviation	The standard deviation of a measure shows how much variation exists across observations in the sample. A low standard deviation indicates that the observations in the sample tend to be very close to the mean; a high standard deviation indicates that the observations in the sample are spread out over a large range of values.
Statistical significance	Statistical significance is the probability that the difference between groups is a result of chance rather than a real difference between the groups. The WWC labels a finding statistically significant if the likelihood that the difference is due to chance is less than 5% ($p < .05$).
Substantively important	A substantively important finding is one that has an effect size of 0.25 or greater, regardless of statistical significance.

Please see the [WWC Procedures and Standards Handbook \(version 3.0\)](#) for additional details.



Intervention
Report



Practice
Guide



Quick
Review



Single Study
Review

A **single study review** of an individual study includes the WWC's assessment of the quality of the research design and technical details about the study's design and findings.

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