

Going, Going, Gone? Can Physicians Keep Up-to-Date With Developments in Schizophrenia Via Continuing Medical Education?

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BACKGROUND

To evaluate effects of online continuing medical education (CME) on physician knowledge and confidence around the most recent developments in schizophrenia.



METHODS

PRE-ASSESSMENT



PSYCHIATRISTS

ACTIVITY 1 (N=464)

ACTIVITY 2 (N=720)

ACTIVITY 3 (N=866)

- Psychiatrists participated in 1 or more of 3 online CME activities on various topics in schizophrenia including the most recent understanding of the mechanism of disease (MOD), mechanisms of action (MOA) of emerging treatments, and latest clinical data.^{1,2} The CME formats were a 30-minute video lecture, a 30-minute video discussion, and a 45-minute anthology of video-based interviews.

- Effectiveness was analyzed using 3 multiple-choice and 1 self-efficacy question (5-point Likert-type scale), presented as pre-/post-CME repeated pairs. Activities posted in May and June 2018; data were collected from each for 30 days after launch.

- Participant knowledge and confidence change in pre- to post-CME responses were calculated for each activity.

POST-ASSESSMENT



PSYCHIATRISTS

ACTIVITY 1

ACTIVITY 2

ACTIVITY 3

- Knowledge was reinforced (correct pre- and post-CME), improved (incorrect pre- but correct post-CME), or unaffected (correct pre- but incorrect post-CME).

- McNemar's test assessed changes in responses to knowledge questions from pre- to post-CME.

- Cramer's V effect size was calculated using the change in proportion of learners who answered questions correctly from pre- to post-CME (<0.06 = modest, 0.06-0.15 = noticeable, 0.16-0.26 = considerable, and >0.26 = extensive effect).

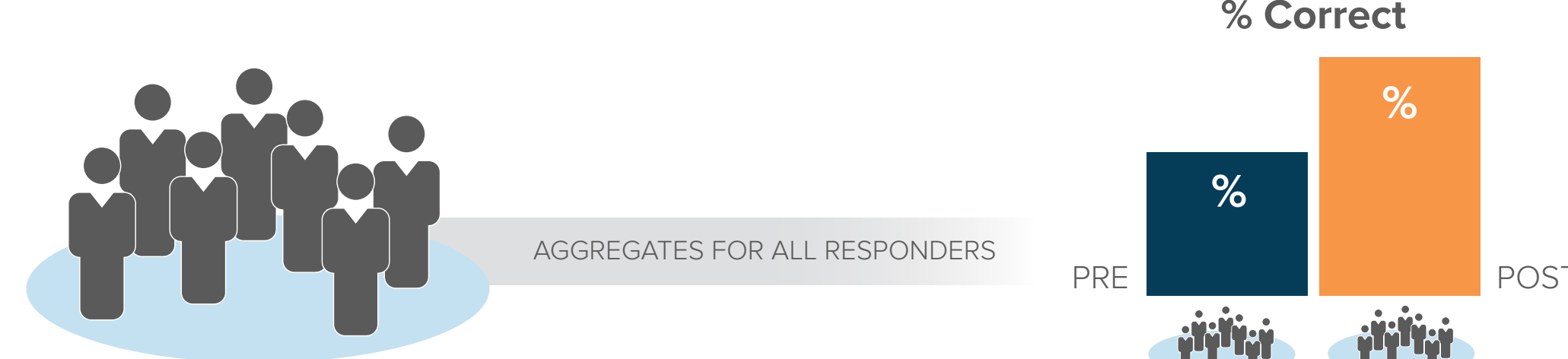
- Paired sample t-tests assessed changes in confidence.

- P values measured significance; P < .05 = statistically significant.

TWO ANALYSES OF THE PRE/POST SAMPLE

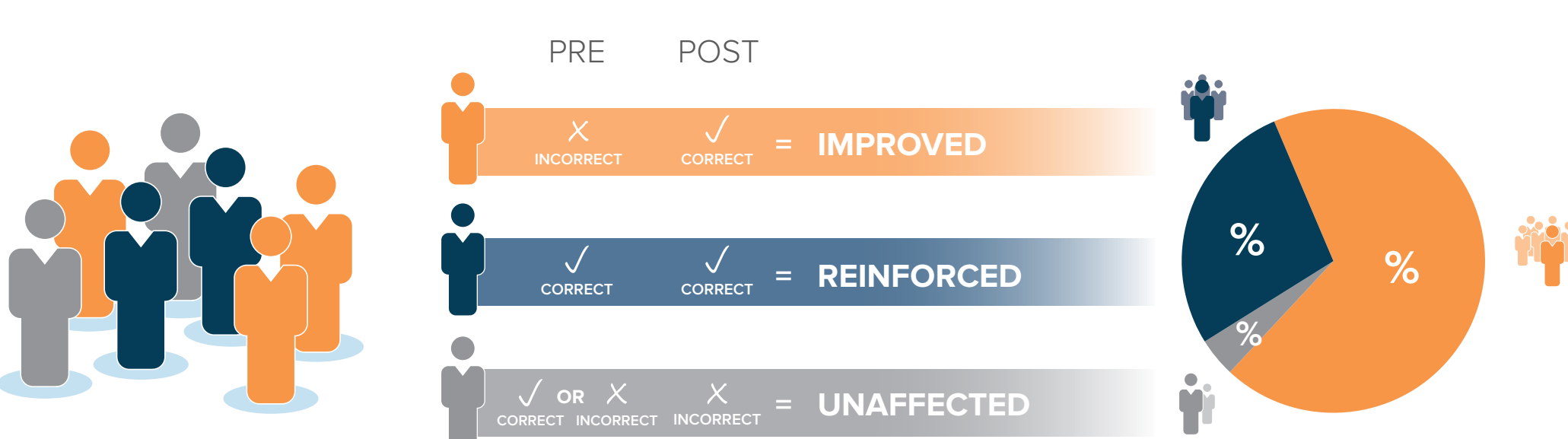
AGGREGATED LEARNING

Overall group tracked pre and posteducation



LINKED LEARNING

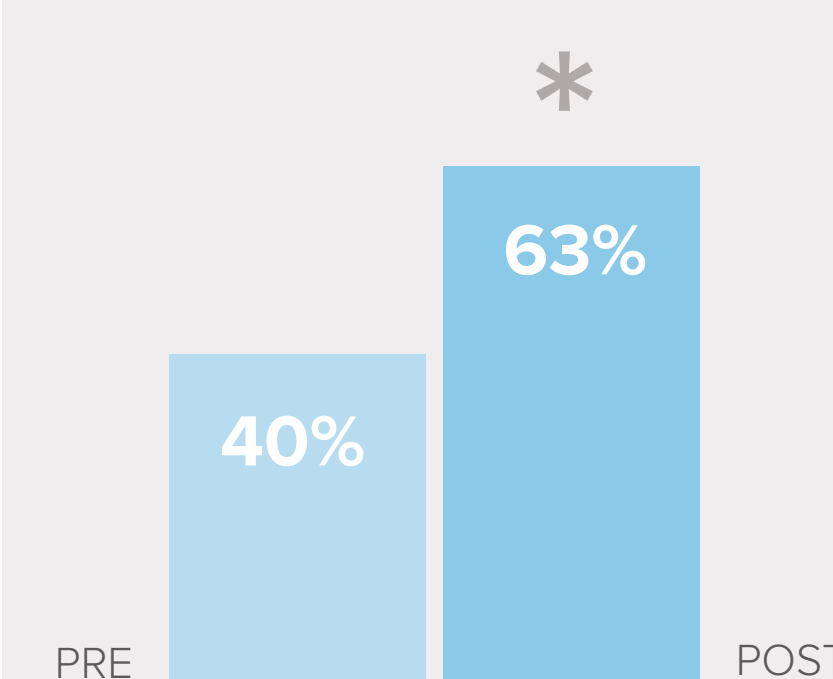
Each individual tracked pre and posteducation



RESULTS

ACTIVITY 1 (N=464)

AVERAGE % OF CORRECT RESPONSES



MCNEMAR'S CHI-SQUARE TEST

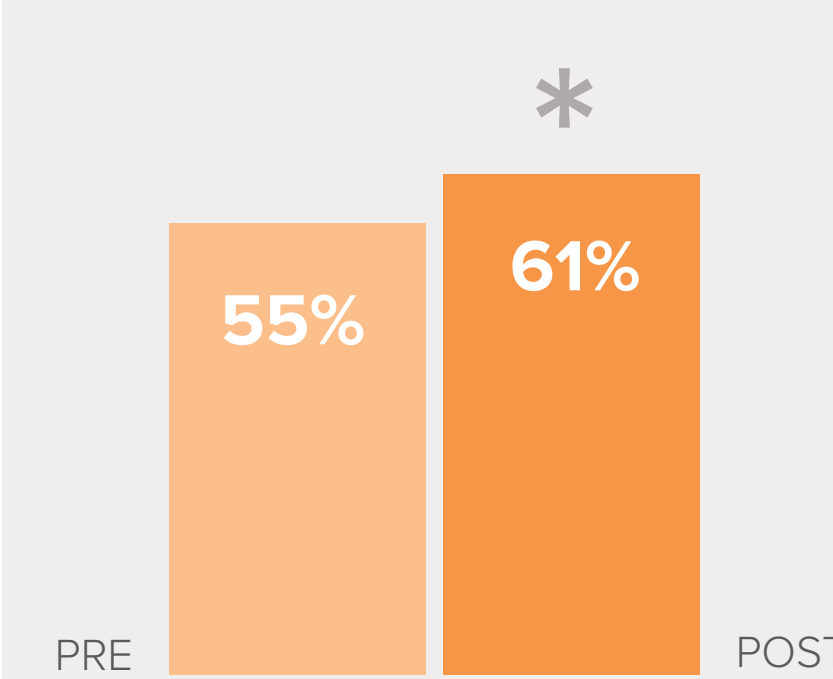
***P < .0001**

CRAMER'S V EFFECT SIZE



ACTIVITY 2 (N=720)

AVERAGE % OF CORRECT RESPONSES



MCNEMAR'S CHI-SQUARE TEST

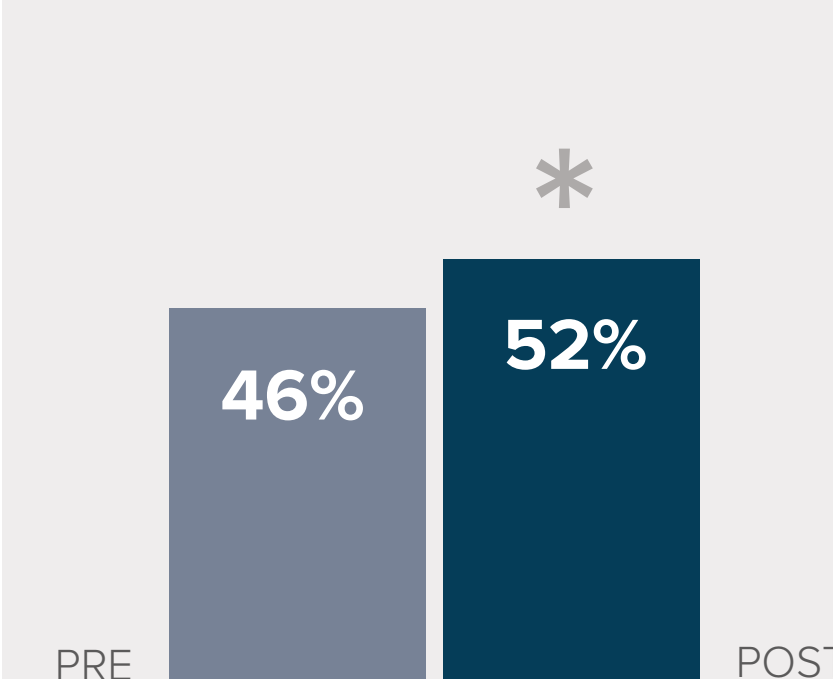
***P < .0001**

CRAMER'S V EFFECT SIZE



ACTIVITY 3 (N=866)

AVERAGE % OF CORRECT RESPONSES



MCNEMAR'S CHI-SQUARE TEST

***P < .0001**

CRAMER'S V EFFECT SIZE

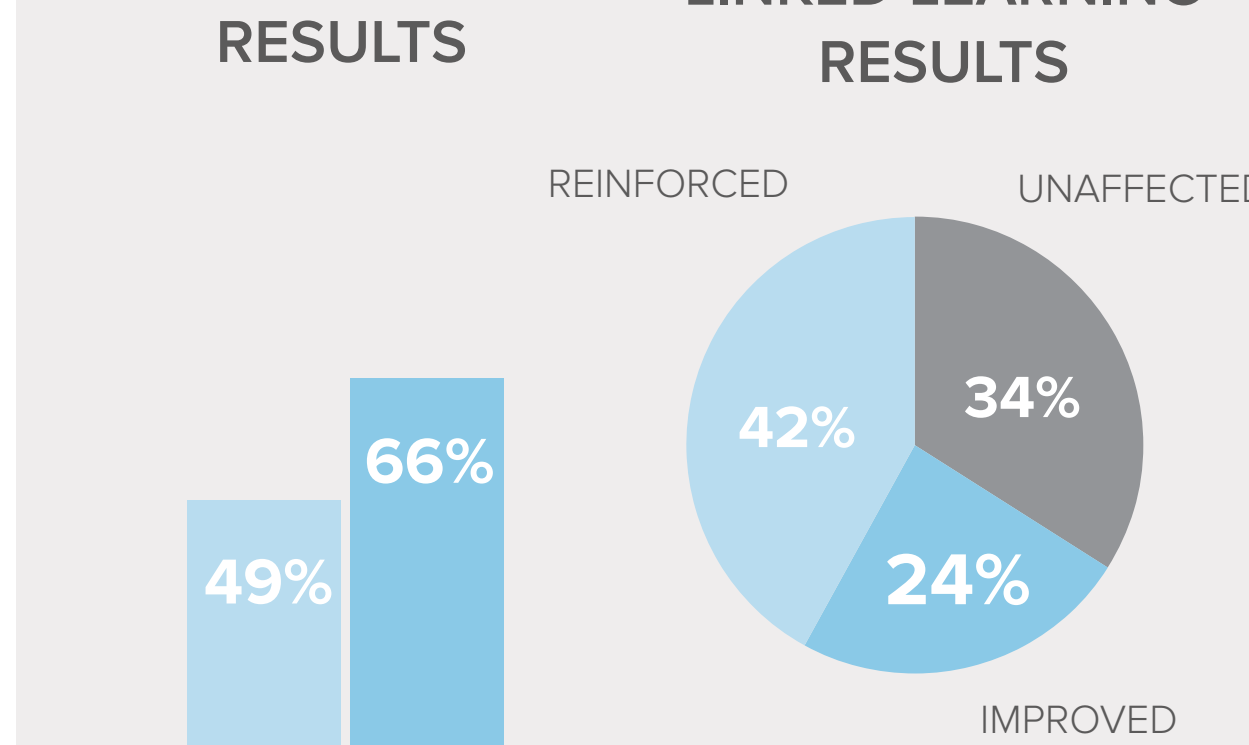


THEME 1 RESULTS – “MECHANISM OF DISEASE”

Related to MOD post-CME, 17% more psychiatrists were knowledgeable about the roles of glutamate signaling (activity 1; P < .001; V=0.167), and 28% were more knowledgeable about the evolution of schizophrenia symptoms (activity 1; P < .001; V=0.284).

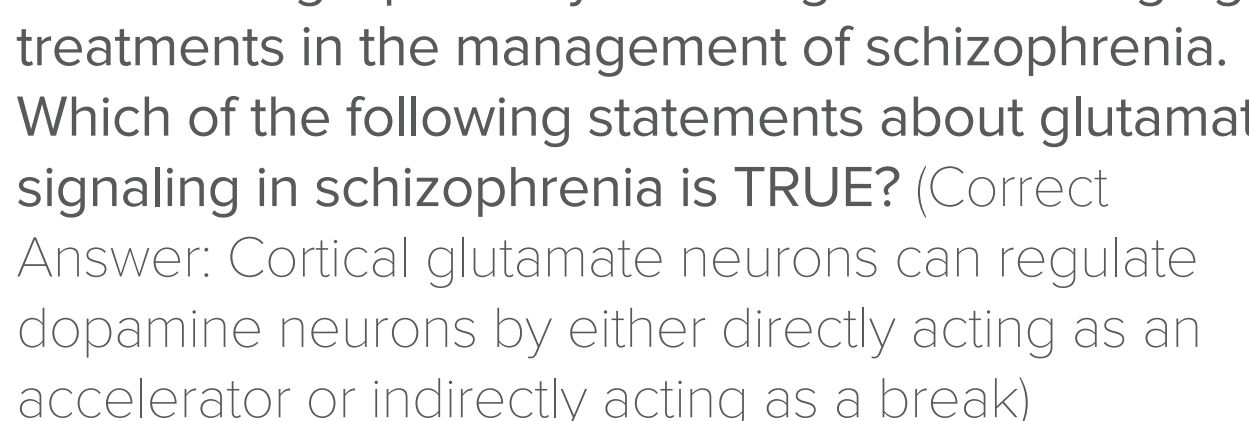
ACTIVITY 1 RESULTS (N=464) SAMPLE QUESTION

AGGREGATED RESULTS



P < .0001; V=.167

LINKED LEARNING RESULTS



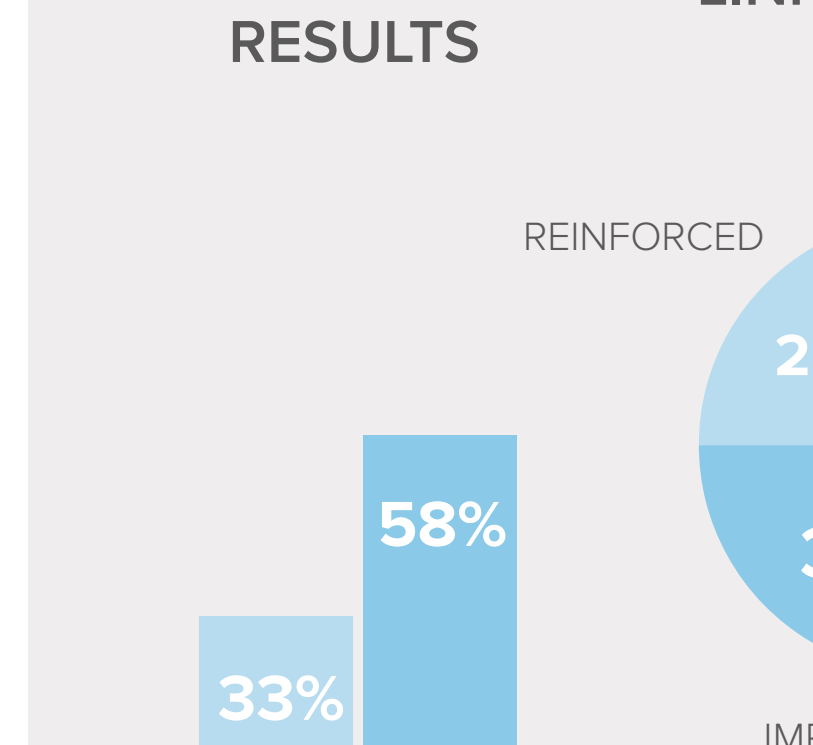
Glutamatergic pathways are targets for emerging treatments in the management of schizophrenia. Which of the following statements about glutamate signaling in schizophrenia is TRUE? (Correct Answer: Cortical glutamate neurons can regulate dopamine neurons by either directly acting as an accelerator or indirectly acting as a break)

THEME 2 RESULTS – “MECHANISM OF ACTION OF EMERGING TREATMENTS”

Related to MOA of emerging treatments post-CME, 25% (activity 1; P < .001; V=0.255) and 10% (activity 2; P = .001; V=0.093) more psychiatrists were knowledgeable, respectively.

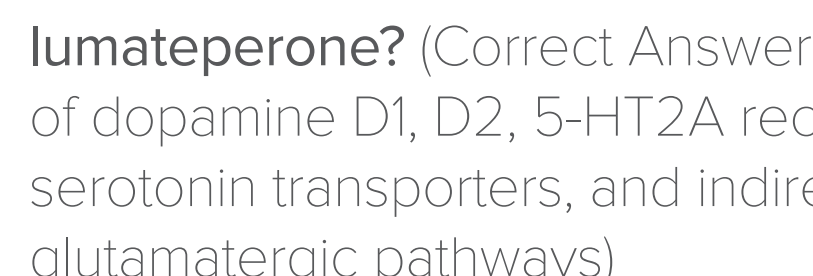
ACTIVITY 1 RESULTS (N=464)

AGGREGATED RESULTS



P < .0001; V=.255

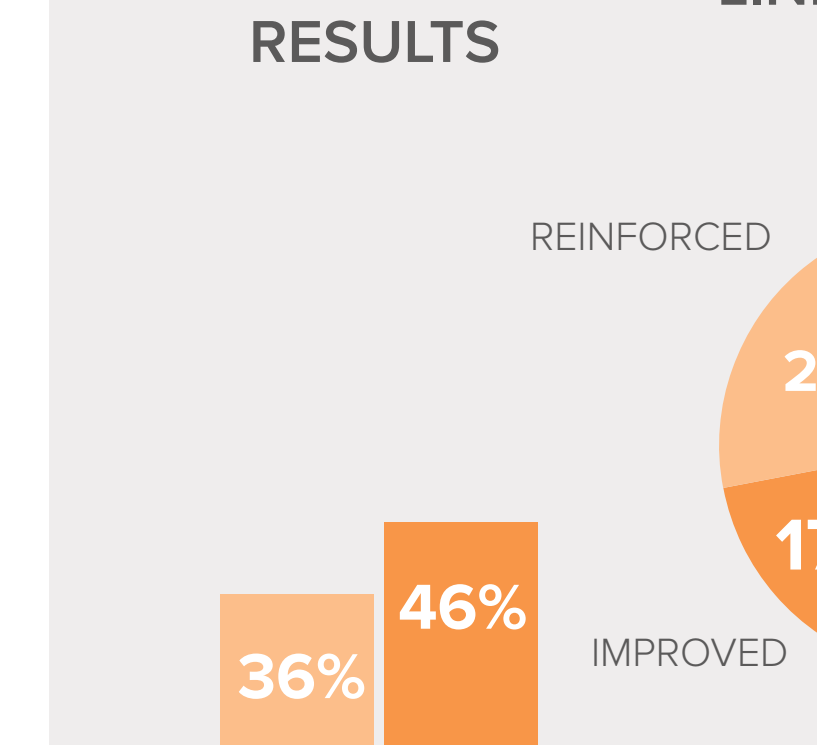
LINKED LEARNING RESULTS



What is the mechanism of action (MOA) of lumateperone? (Correct Answer: Direct modulation of dopamine D1, D2, 5-HT2A receptors, and serotonin transporters, and indirect modulation of glutamatergic pathways)

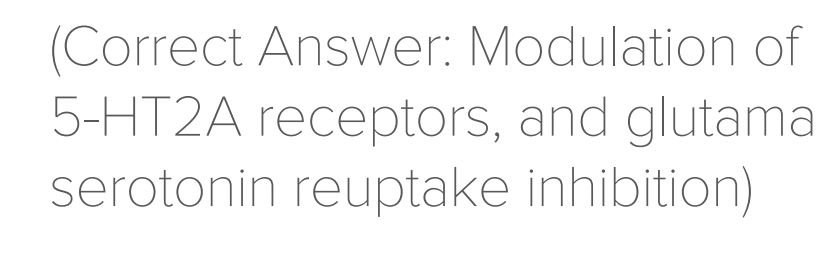
ACTIVITY 2 RESULTS (N=720)

AGGREGATED RESULTS



P = .0004; V=.093

LINKED LEARNING RESULTS



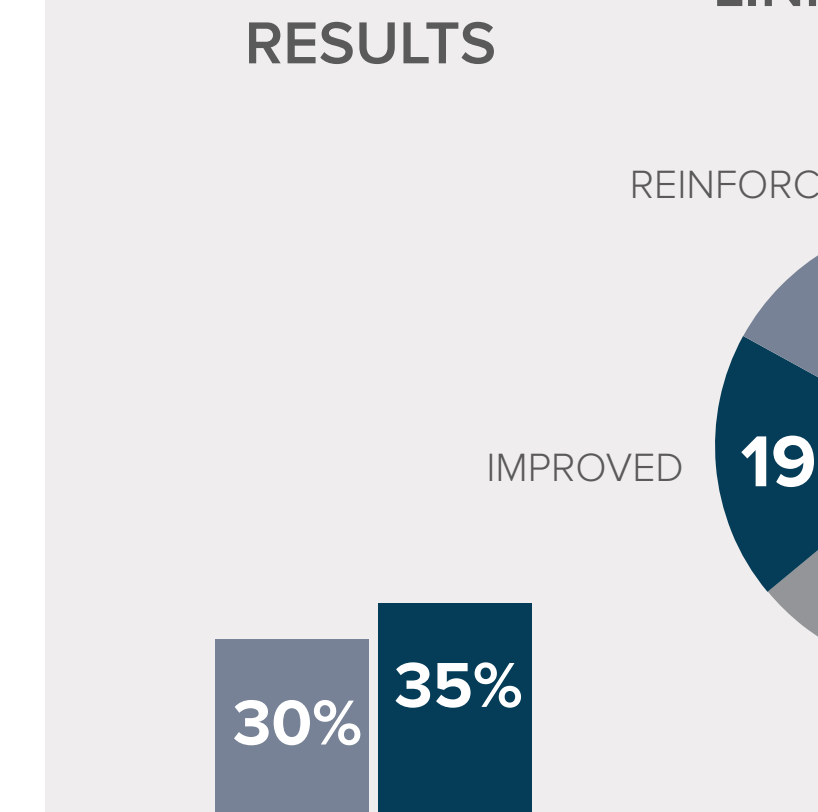
What is the mechanism of action of lumateperone? (Correct Answer: Modulation of dopamine D1, D2, 5-HT2A receptors, and glutamatergic pathways with serotonin reuptake inhibition)

THEME 3 RESULTS – “KNOWLEDGE OF THE LATEST CLINICAL DATA”

Related to the latest clinical data post-CME, 5% more psychiatrists were knowledgeable (activity 3; P = .008; V=0.062)

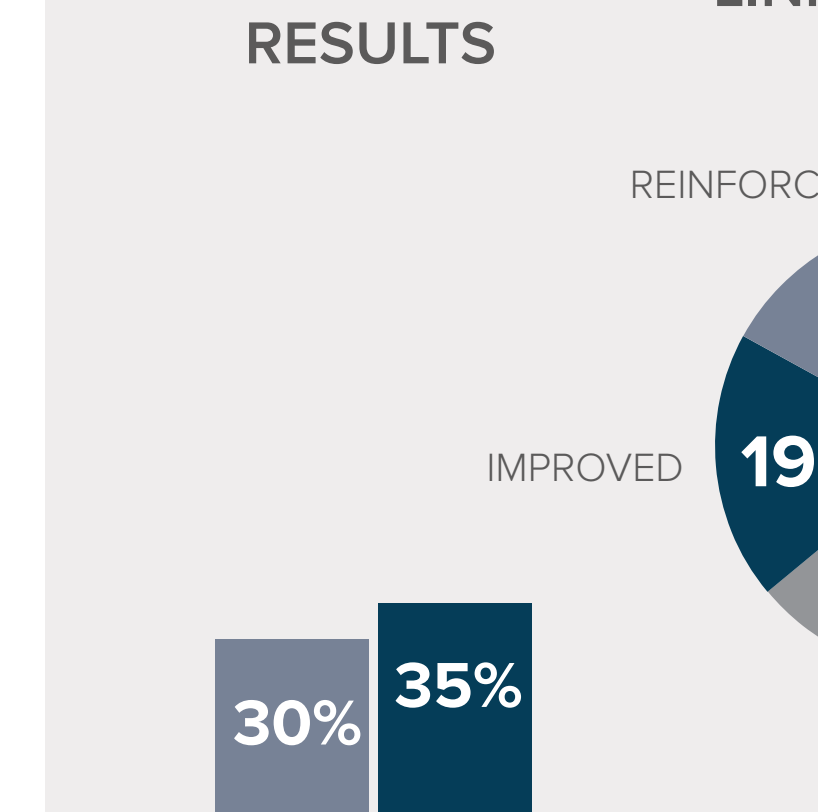
ACTIVITY 3 RESULTS (N=866)

AGGREGATED RESULTS



P = .0089; V=.062

LINKED LEARNING RESULTS



Study 303, an open-label safety switching study with lumateperone, involved patients with schizophrenia being treated with a standard antipsychotic at baseline, then being switched to lumateperone or placebo for 6 weeks, and then being switched back to standard of care. The results of this trial showed which of the following? (Correct Answer: The significant benefits on metabolic parameters with lumateperone were lost after 2 weeks of being switched back to standard of care)

CONCLUSION

A curriculum of online CME activities delivered in various formats to accomplish specific learning objectives may assist psychiatrists to integrate recent developments in schizophrenia into practice as demonstrated by their association with improved knowledge and confidence post-CME. However, residual gaps in both knowledge and confidence in this topic suggest a need for continued education.

ACKNOWLEDGMENTS

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REFERENCES

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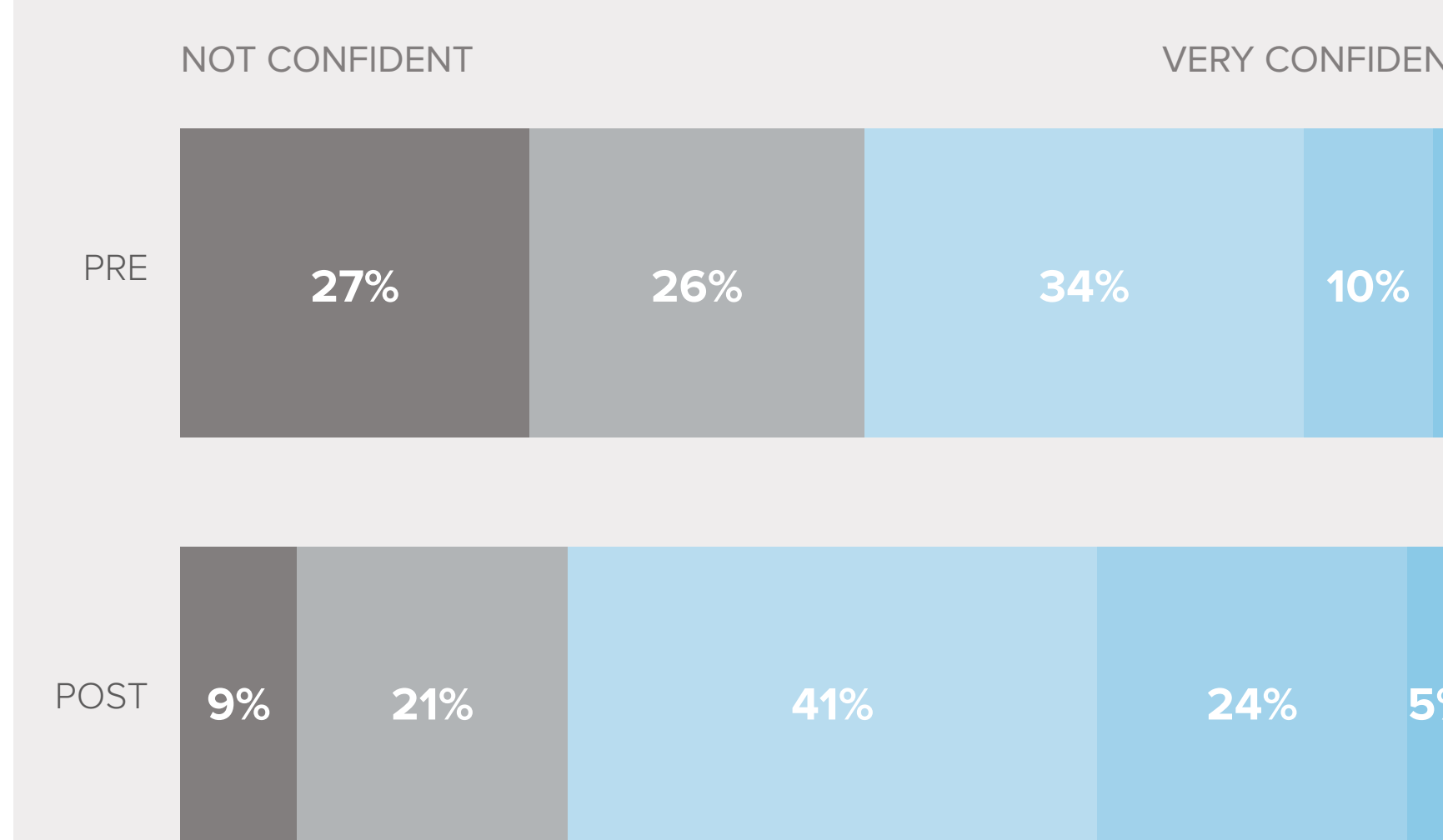


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SELF-EFFICACY RESULTS

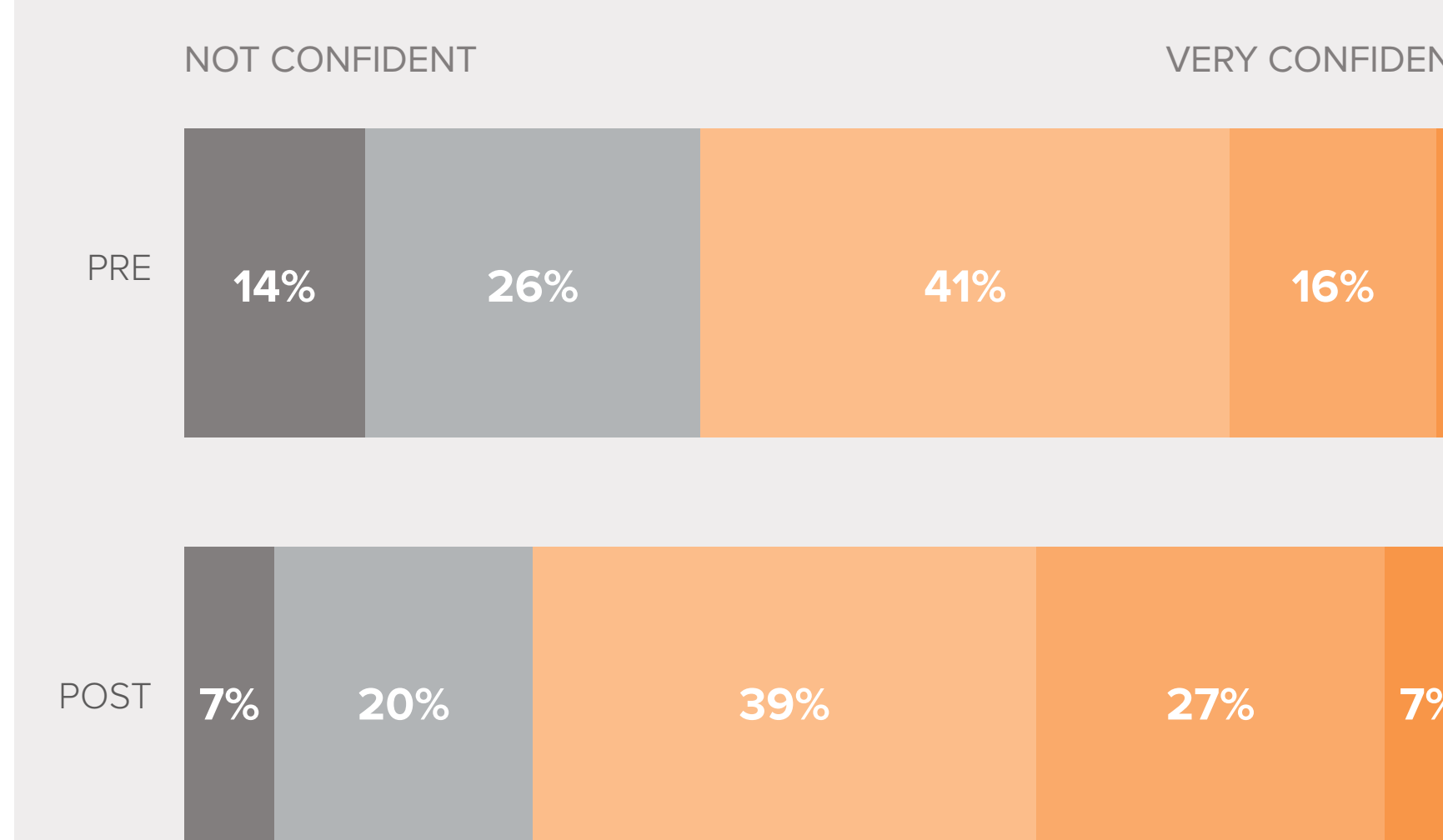
Across the three activities, there was a significant increase in confidence from pre- (M=2.60, SD=1.08) to post- (M=3.04, SD=1.02) CME [n=3561, t(7099)=17.67, P < .001].

ACTIVITY 1 RESULTS (N=464)



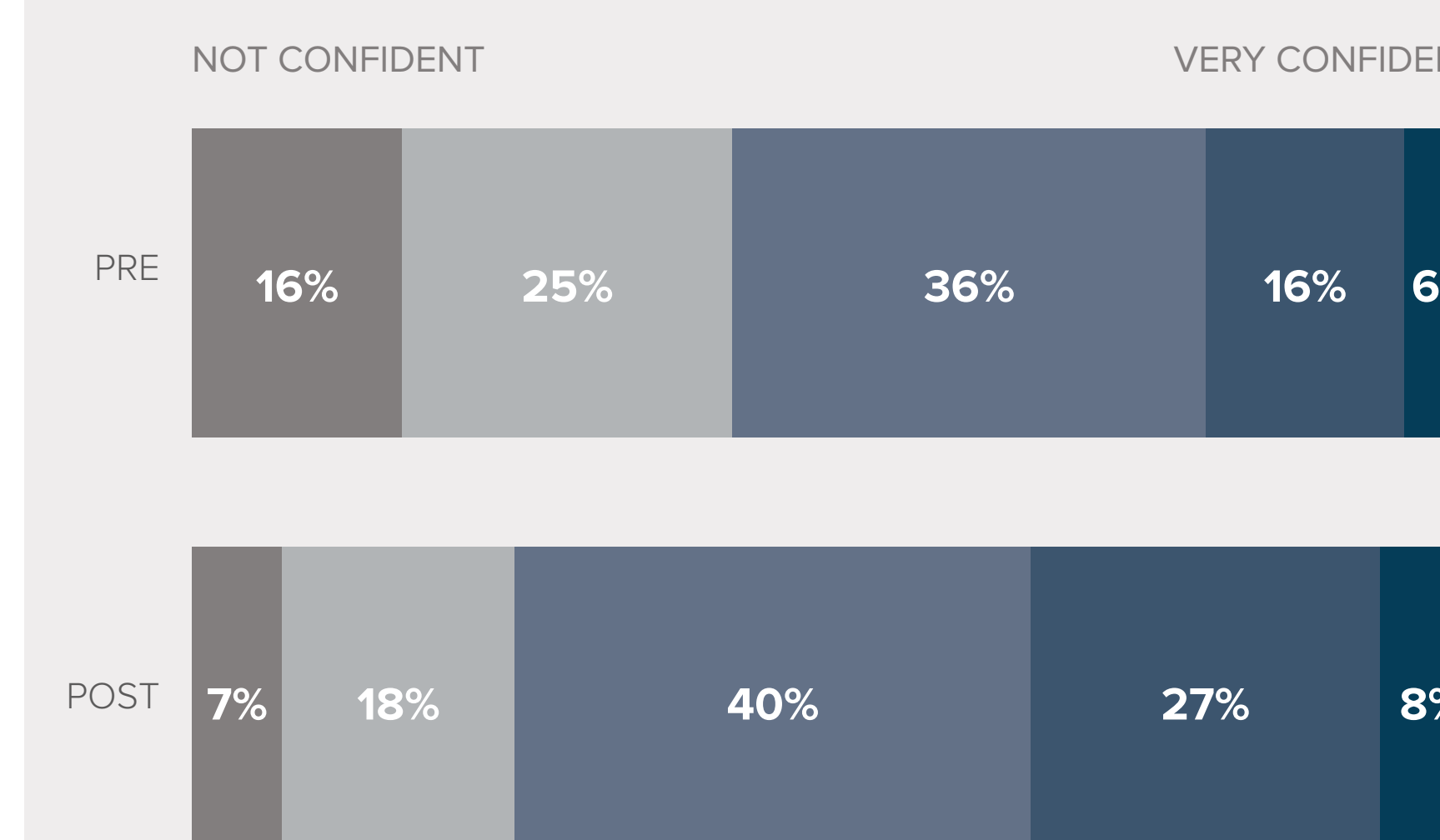
How confident are you in your understanding of the mechanisms of action of emerging treatments in relation to the mechanism of disease in schizophrenia? (Select ranking from 1 [Not confident] to 5 [Very confident])

ACTIVITY 2 RESULTS (N=720)



How confident are you in your understanding of the clinical properties of emerging treatments for schizophrenia? (Select ranking from 1 [Not confident] to 5 [Very confident])

ACTIVITY 3 RESULTS (N=866)



How confident are you in your ability to incorporate new data from clinical trials on new and emerging schizophrenia treatment approaches into your clinical practice? (Select ranking from 1 [Not confident] to 5 [Very confident])