



## Background

Historically there has been a discrepancy between health care available in rural and urban areas. From 2007-2015, rural counties across America saw a greater age-adjusted rate of drug overdose deaths than urban counterparts (Hedegaard et al., 2019). The prevalence of prescription opiate misuse and illicit opioid abuse was found to be significantly higher among rural communities, indicating personnel dealing with rural substance abuse treatment may be ill-prepared for the epidemic the United States currently faces (Havens, et al., 2007). In 2015, the frequency of naloxone administration was 23% higher in rural areas than urban, with the opioid overdose rate being 45% higher in those communities as well (Faul et al., 2015). This study also found that the odds of naloxone administration were significantly higher among Emergency Medical Technician (EMT)-Intermediates than EMT-Basics, suggesting that levels of EMT training may be a relevant aspect of rural naloxone treatment (Faul et al., 2015). Finally, in one study of confidence in treatment of overdoses, 94% of Paramedic providers were somewhat or very confident in their ability to recognize an opioid overdose and treat it successfully and provide follow-up care, while slightly over 50% of EMT-Basic providers felt the same (Kilwein et al., 2019). These studies all touch on various aspects of EMS provider care with overdoses, however, at the time of these studies, EMT-Basics could not legally administer naloxone and therefore were not trained to do so; the current study does not have those limitations in legality or training.

## Objectives

1. To determine how comfortable rural EMS providers feel with treating both opioid overdoses as well as general drug overdoses in the field compared to urban EMS providers.
2. To determine the number of training hours rural providers receive comparative to their urban counterparts.
3. To determine how many experiences rural providers had with secondary doses of Narcan compared to urban providers.

## Materials & Methods

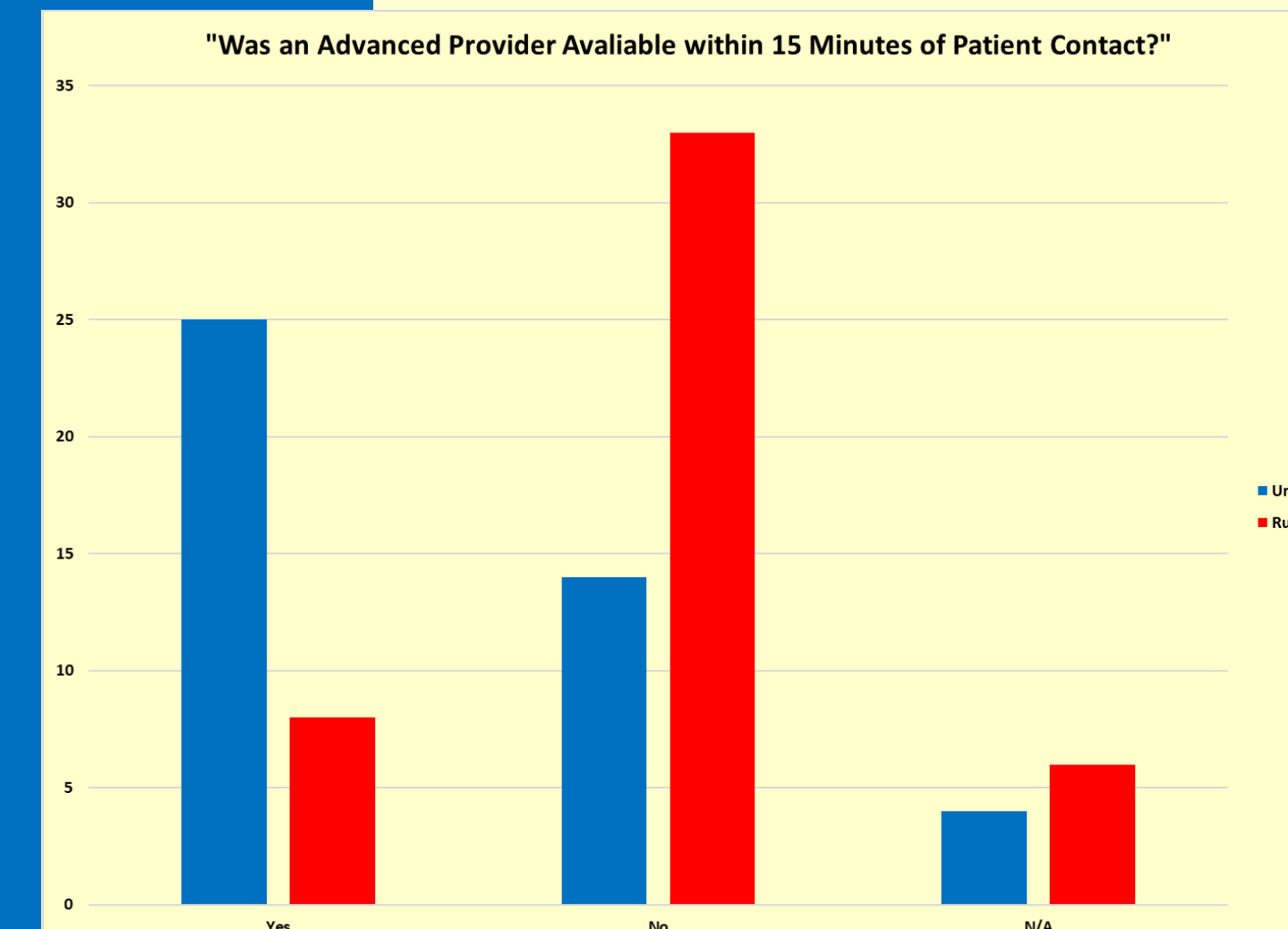
This study is a cross-sectional survey of EMS providers currently practicing in urban and rural Indiana. A total of ninety constituents were surveyed nineteen questions each between the months of November 2020 and March 2021.

**Inclusion Criteria:** Must have EMS certification (Emergency Medical Responder, EMT-Basic, EMT-Intermediate, EMT-Paramedic). Must be currently volunteering or employed in a rural or urban district, and over the age of 18.

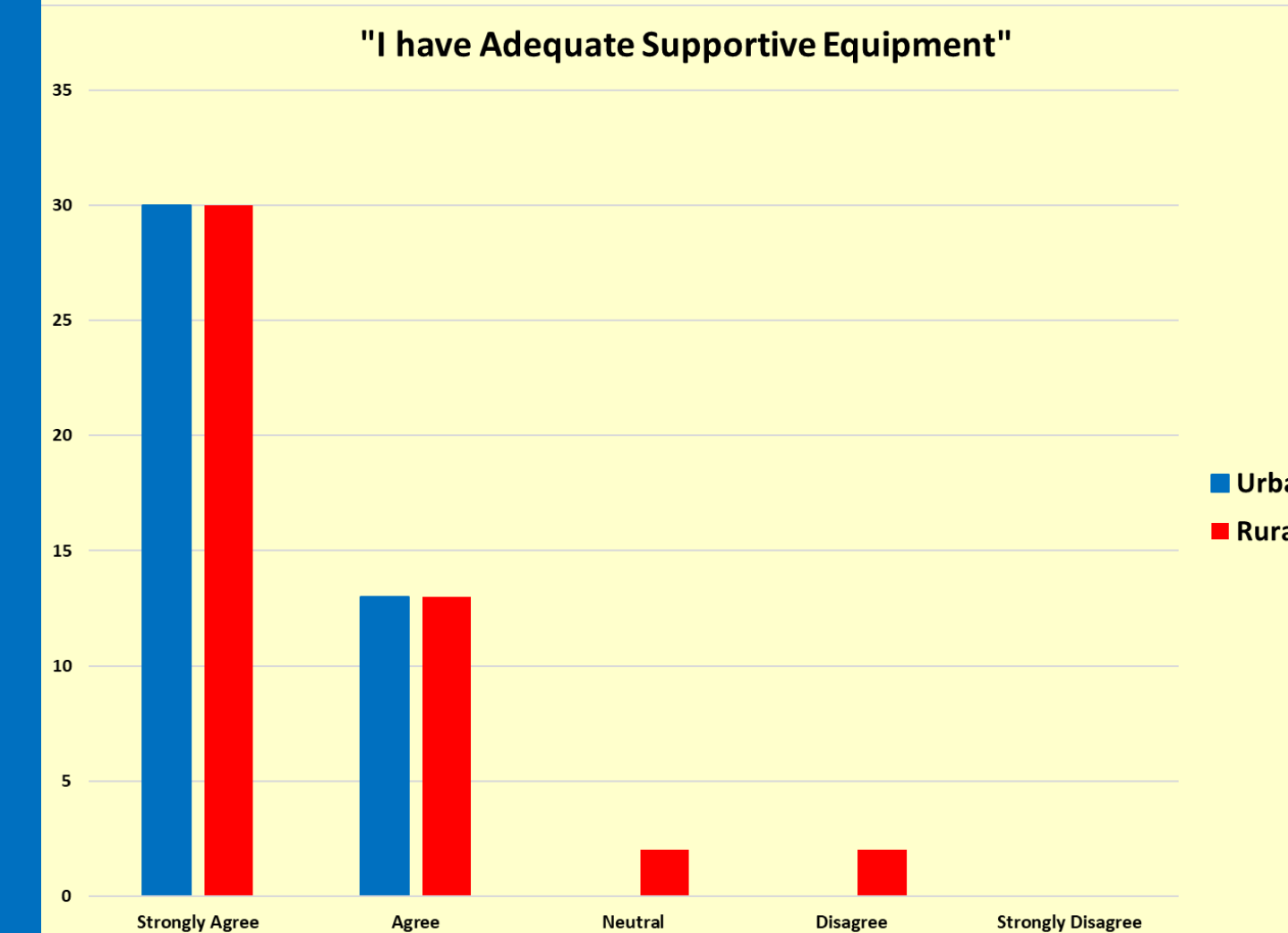
**Design:** surveys on Likert-type, yes/no, and grouped by numbers were assessed with opportunity for further written-in detail as well.

**Analysis:** descriptive analysis, univariate and bivariate analyses were performed

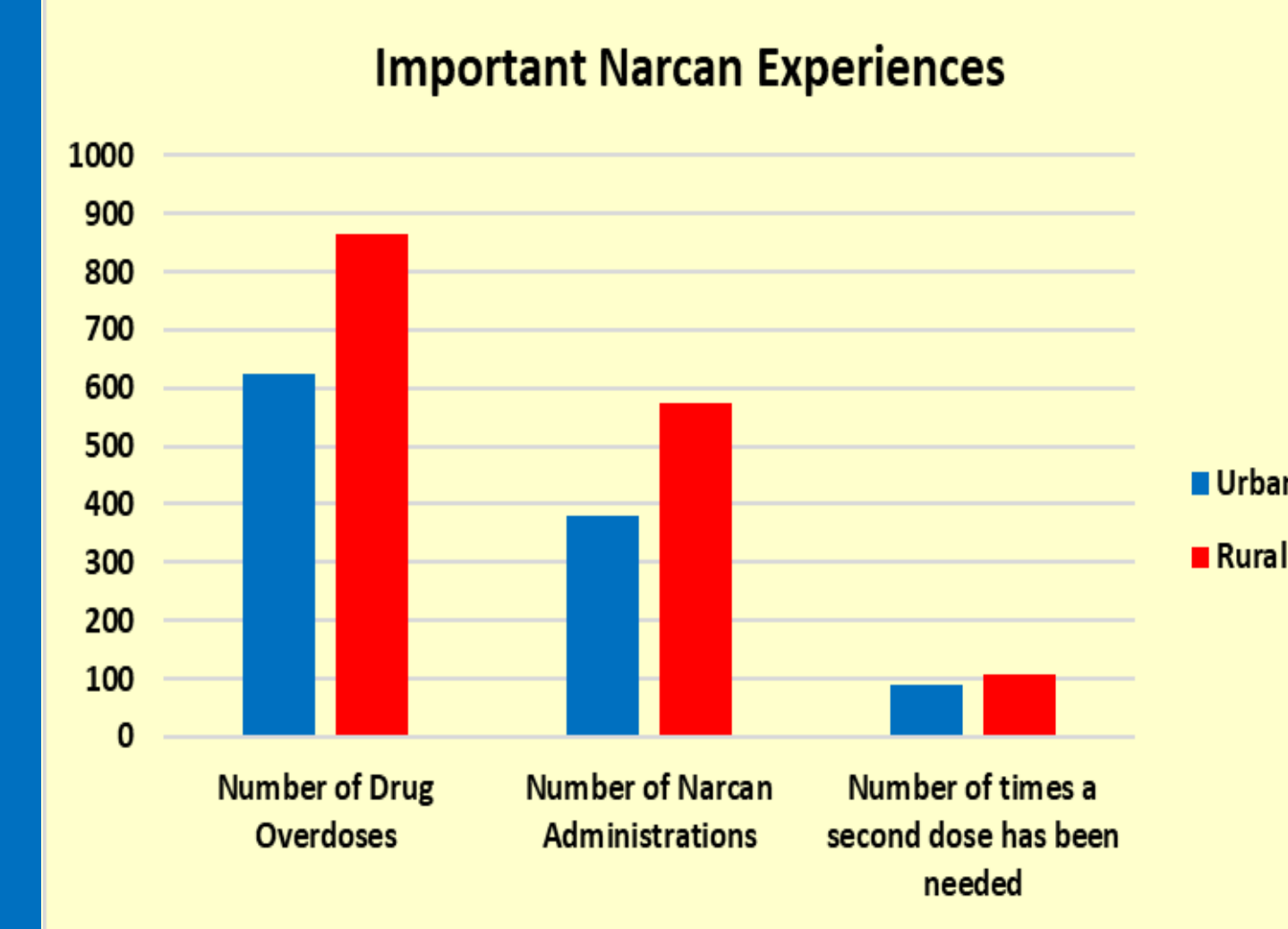
## Results



**Figure 1.** Personal attestation availability of advanced provider within 15 minutes of patient contact. p<0.04.

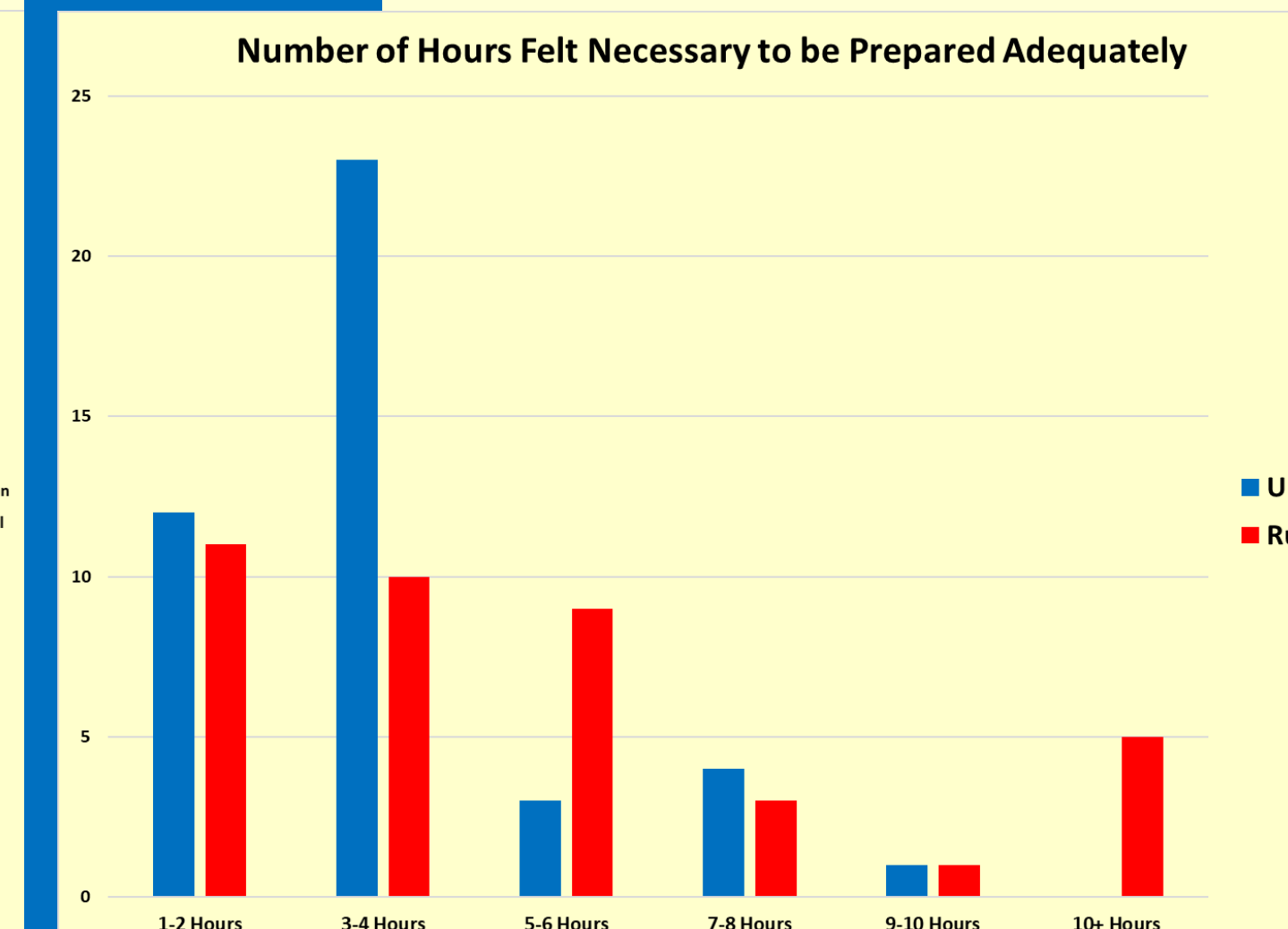


**Figure 3.** EMS provider personal agreement with the title statement. p=0.16

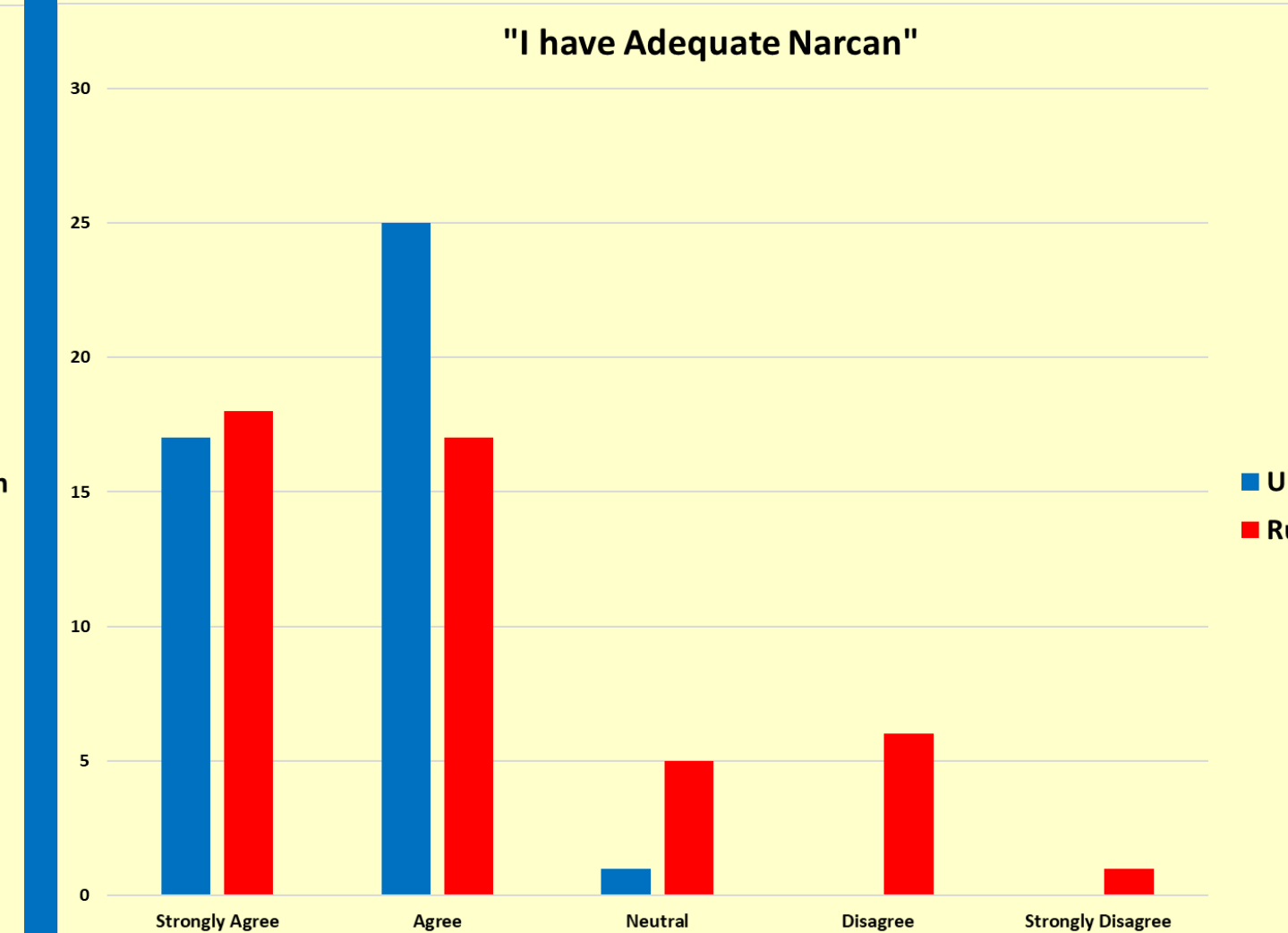


**Figure 5.** EMS provider experiences with Narcan. Notable p values of 0.48, 0.34 & 0.88 respectively.

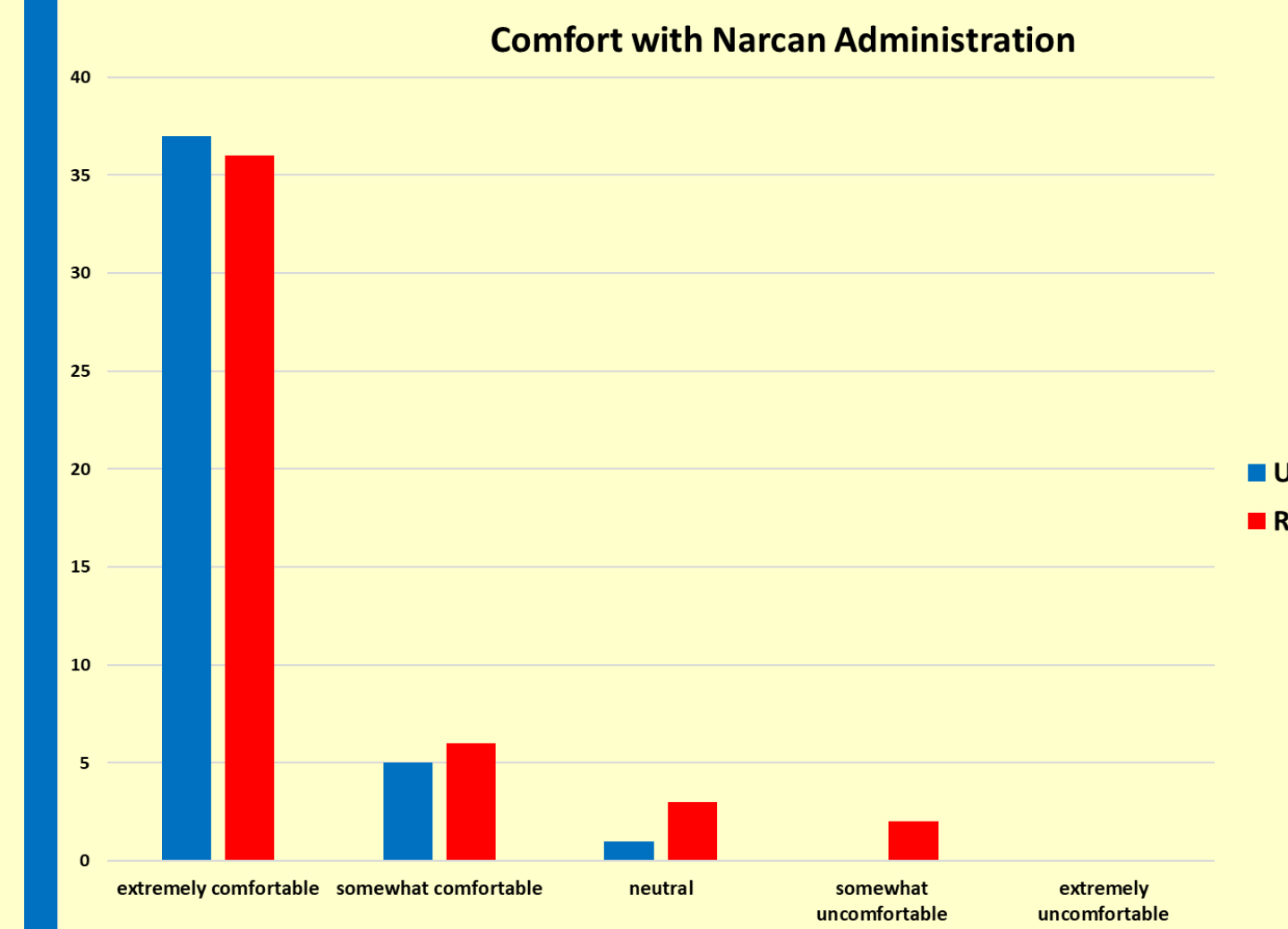
## Results



**Figure 2.** Total number of training hours EMS providers felt were necessary to be adequately prepared for an overdose. p=0.05



**Figure 4.** EMS provider personal agreement with the title statement. p=0.02



**Figure 6.** EMS provider personal comfort level with Narcan (Naloxone) administration. p=0.10

## Conclusions

This study has five findings:

1. As shown in Figure 2, The amount of time rural EMS providers felt was necessary to be prepared for an overdose differed from that of urban EMS providers.
2. As shown in Figure 4, EMS providers in rural areas felt they had adequate amounts of narcan less of the time when compared to urban providers.
3. As shown in Figure 3, Both urban and rural prehospital providers felt they had adequate supportive equipment and were comfortable with overdoses in general with insignificant differences.
4. As shown in Figure 6, Rural EMS providers felt less comfortable with narcan administration, but this was not statistically significant.
5. As shown in Figure 1, The amount of time before an advanced provider significantly differed between rural and urban EMS providers.
  - Regarding Narcan supplies, four rural providers indicated that some departments they had experienced did not carry narcan at all, and two additional interviewees indicated they had exhausted their supply of narcan in the past, leading to insecurities about current supply.
  - As shown in Figure 1, There was a difference found between rural and urban advanced provider time from patient contact, as well as a difference for feeling adequately prepared for an overdose: there may be further correlation to be found directly as well.
  - As shown in Figure 5, no correlations were found thus far on secondary doses of narcan administration. With a p-value of 0.88, it seems that both rural and urban EMS providers see secondary dosing of narcan similarly. This may be an area for future development or potential research.

## Acknowledgements

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## References

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