

Comparative Effectiveness of Sertraline, Fluoxetine vs Escitalopram in USA population with major depressive disorder



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Background & Objective

- As many as 40% patients suffering from depression fail to respond to conventional therapy, which consists of using a single antidepressant agent at an adequate dose and duration¹.
- This study evaluated the trend and effectiveness of the most commonly prescribed Sertraline, Fluoxetine and Escitalopram on psychological distress among various subgroup population based on age, race and sex using a nationally representative sample.

Method

- The Medical Expenditure Panel Survey (MEPS) household component longitudinal data files from panel 17-23 (2012-2019) were used.
- The impact of the medicines on psychological distress was assessed using change in Kessler Index (K6) scores, which were measured only in rounds 2 and 4 of each panel. Changes in K6 scores ≤ 6 were identified as improvement, 7-12 (unchanged) and, > 12 (decline) in psychological distress.
- Multinomial logistic regression was conducted using change in K6 scores as a dependent variable. Independent variables included type of medication, age, gender, and race.

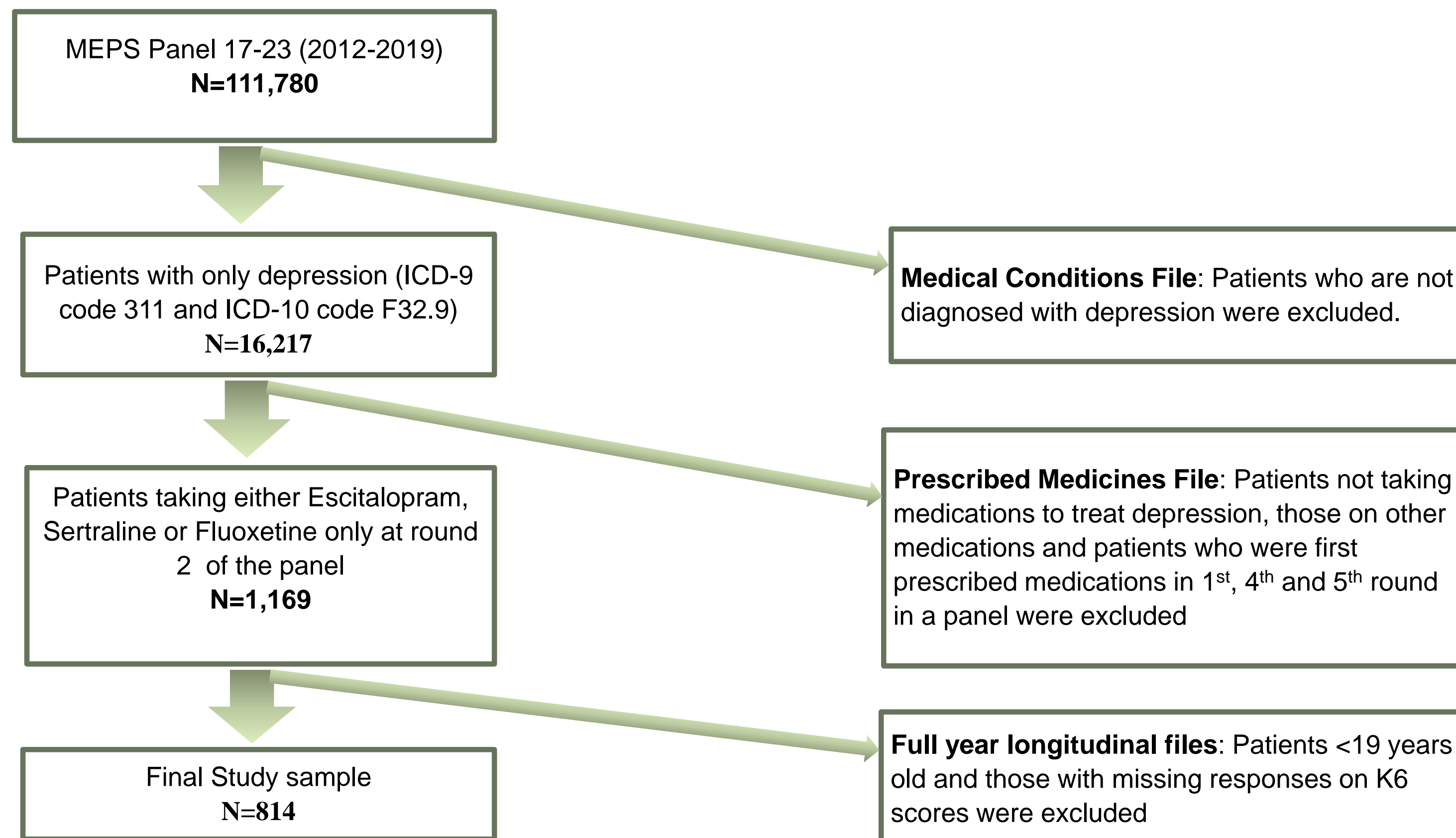


Figure 1: schematic diagram of study participants

Results

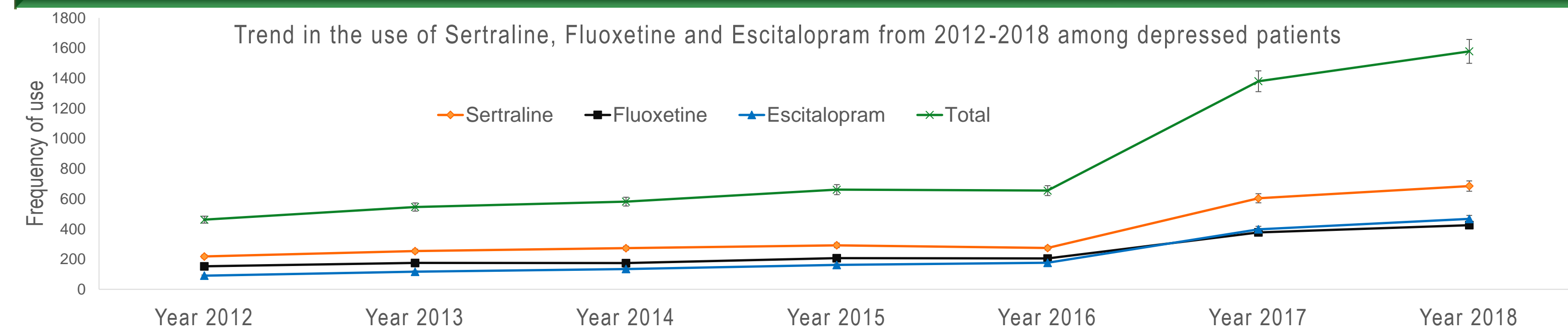


Figure 2

The use of antidepressants among study participants

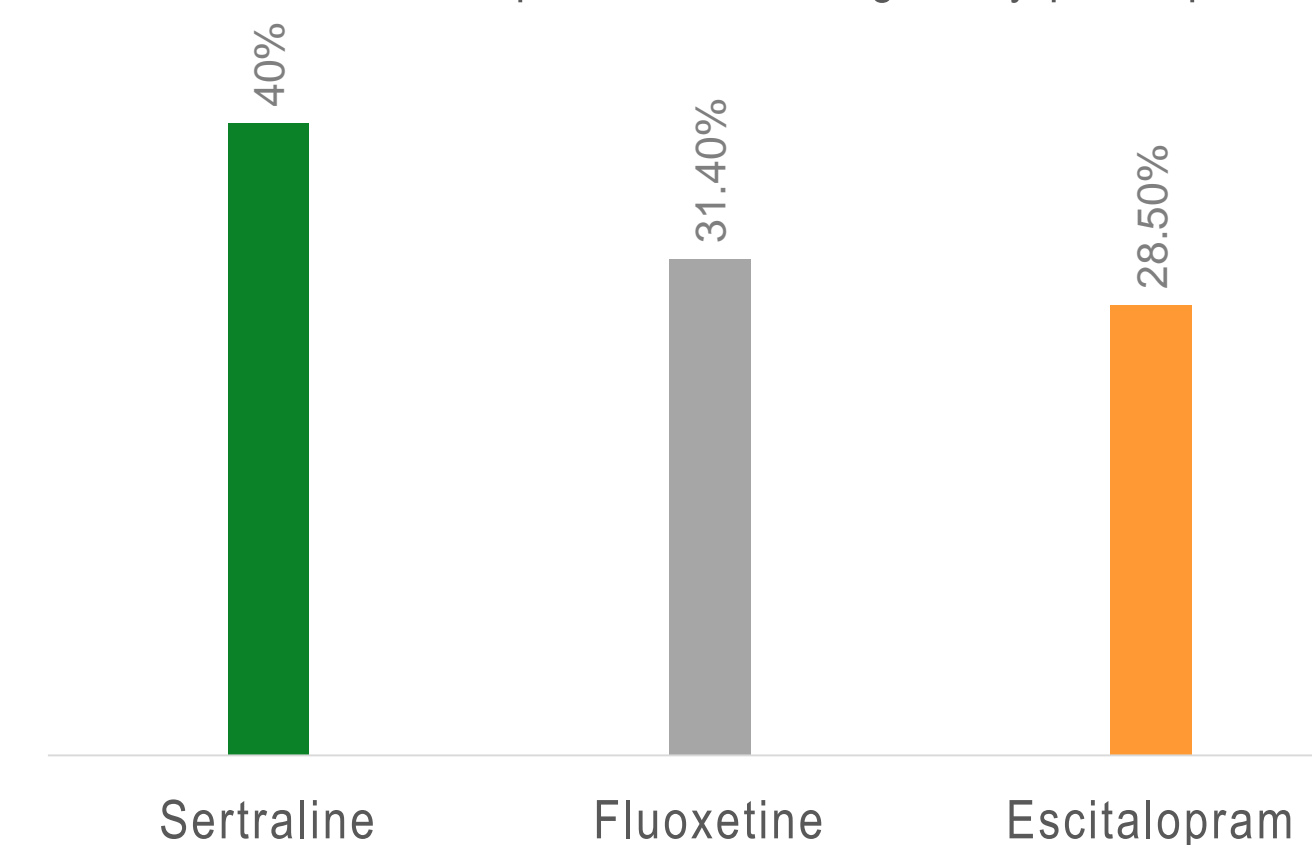


Figure 3

Percentage of participants showing change in K6 scores

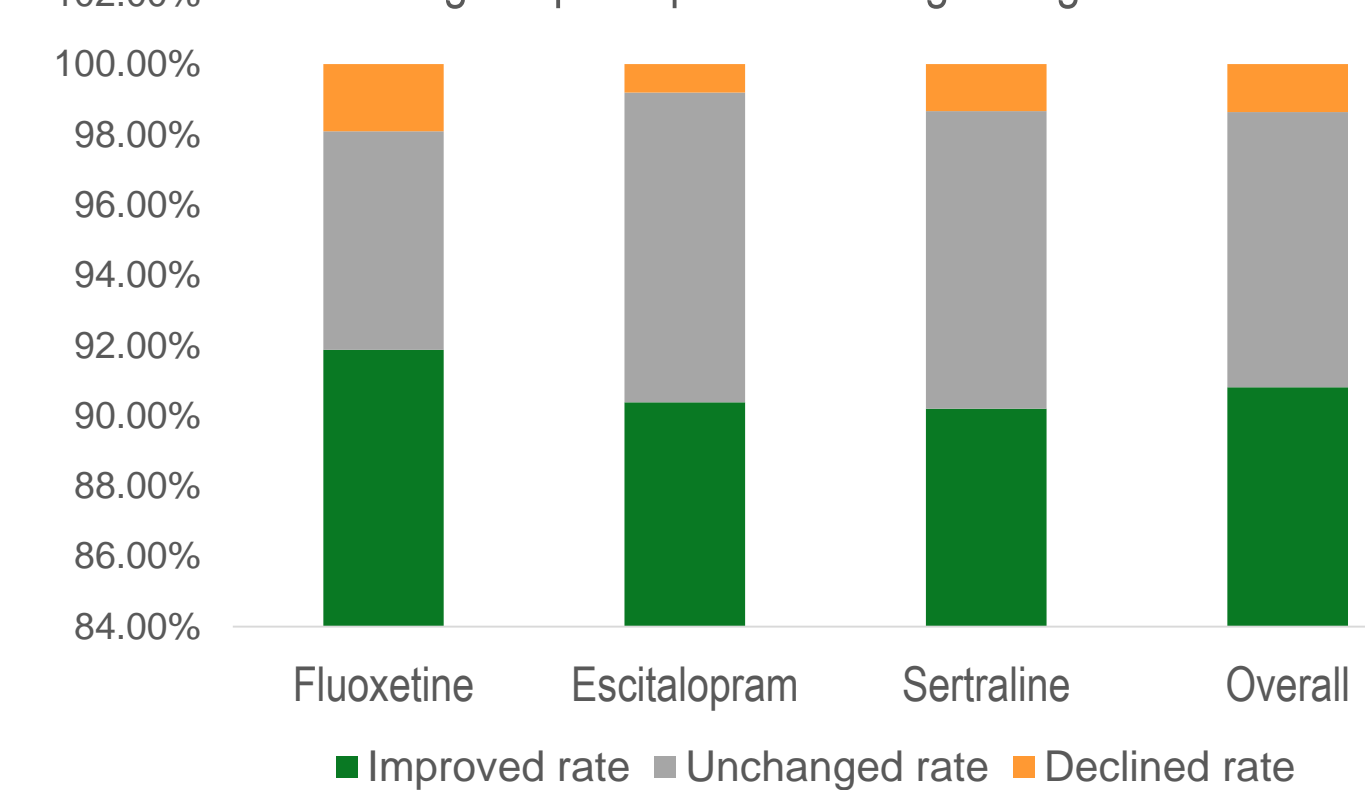


Figure 4

Table 1 Multinomial logistic regression to predict improvement in K6 scores

Category Ref:	Improved		Declined	
	OR (95% CI)	P-value	OR (95% CI)	P-value
Unchanged				
Drug ref: Fluoxetine				
Escitalopram	0.66 (0.021-3.81)	0.247	0.426 (0.12-1.50)	0.185
Sertraline	0.85 (0.06-3.324)	0.631	1.088 (0.28-4.10)	0.901
Age ref: 20-39				
40-59	0.991 (0.09-9.83)	0.994	1.842 (0.54-6.23)	0.325
60-80	0.662 (0.05-7.92)	0.744	0.93 (0.293-2.97)	0.906
Race ref: white				
Black	5.32 (2.67-33.30)	0.016	8.79 (1.09-70.30)	0.040
American Indian	6.22 (0.33-116.3)	0.221	1.50 (1.66-1.35)	0.00
Asian	5.31 (0.22-125.7)	0.300	0.59 (0.068-5.16)	0.638
Multiple race	1.80 (0.356-9.09)	0.476	1.64 (4.70-5.74)	0.00

Conclusion & Future work

All the medications effectively improved psychological distress, with Fluoxetine having the highest improvement rate. While Sertraline and Escitalopram were less likely to improve psychological distress than Fluoxetine, result was statistically insignificant possibly because of smaller sample size. Further study is needed to assess the comparative effectiveness and health-care utilization of these medications.

References

1. Antidepressant Use Among Persons Aged 12 and Over: United States, 2011–2014. (2017). Centers for Disease Control and Prevention. Retrieved October 11, 2021 <https://www.cdc.gov/nchs/products/databriefs/db283.htm>
2. Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., Rush, A. J., Walters, E. E., & Wang, P. S. (2003). The Epidemiology of Major Depressive Disorder. *JAMA*, 289(23), 3095. <https://doi.org/10.1001/jama.289.23.3095>