Clinical Registry of Rural Oral Health Disparities and Outcomes

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Background

The oral health status of populations in rural communities has been found to be statistically lower, even after adjusting for predisposing factors such as socioeconomic variables and dental treatment needs[1]. Geographical location can play a significant role in the inequality of general and oral health outcomes in rural-urban populations[1]. The objective of this project is to build a registry to examine the oral health outcomes of the subjects and identify any disparities in rural populations. As a secondary objective, this study aims to determine if the registry is representative of the entire ECU patient population. Subjects are selected based on availability and desire to participate, and no monetary incentive is offered. Saliva samples are collected from subjects for future molecular analysis.

Methods

This registry is designed to encompass all of the ECU SoDM patients of ages 18+ who volunteer to be included. Planned enrollment is 20,000 subjects across all the SLC's in North Carolina. Participants are asked to provide a saliva sample to be added to the clinical registry. Patients who attended appointments annually for 3+ years were categorized as "Routine Care," while patients whose initial appointment was within the last 2 years were considered "New Patients," and any others were categorized as "Emergency Only." To determine the reliability of the data, the registry's current population demographics were compared to the demographics of ECU SoDM's comprehensive patient database from 2011 to 2020[3].

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Results

Table 1. Type of care received by patients within specific demographics.

| Demographic Variable	Routine Care	Emergency Only	New Patients	TOTAL
Age				
18-30	1 (7%)	2 (14%)	11 (79%)	14
31-45	3 (20%)	4 27%	8 (53%)	15
46-60	15 (8%)	5 (42%)	6 (50%)	12
61-75	15 (46%)	8 (24%)	10 (30%)	33
76+	11 (73%)	1 (7%)	3 (20%)	15
Gender				
Male	12 (31%)	11 (28%)	16 (41%)	39
Female	19 (38%)	9 (18%)	22 (44%)	50
Income Level				
≤20,000	0 (0%)	0 (0%)	10 (100%)	10
≥20,000	31 (40%)	20 (25%)	28 (35%)	79
Race				
Black	1 (5%)	9 (45%)	10 (50%)	20
White	26 (47%)	9 (16%)	20 (37%)	55
Latino	0 (0%)	0 (0%)	6 (100%)	6
Mixed/Other	1 (50%)	0 (0%)	1 (50%)	2
Undisclosed	3 (50%)	2 (33%)	1 (17%)	6
Geographical Area				
Rural	13 (32%)	10 (25%)	17 (43%)	40
Urban	18 (37%)	10 (21%)	21 (43%)	49
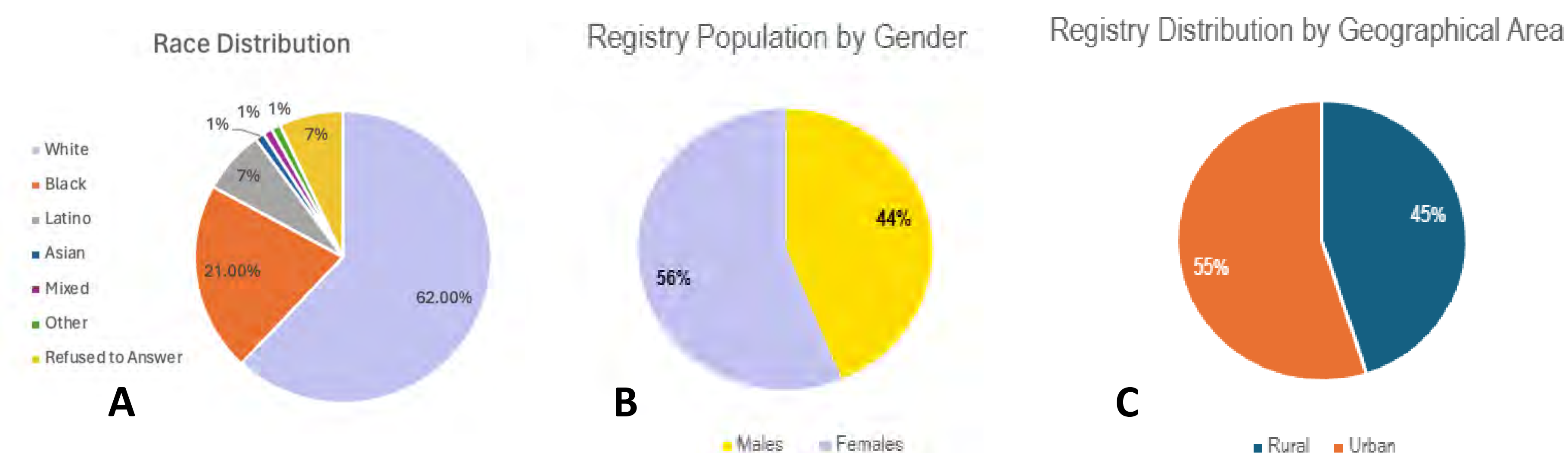
Figure 1. Breakdown of the current registry population by racial background (A), by gender (B), and by geographical area (C).
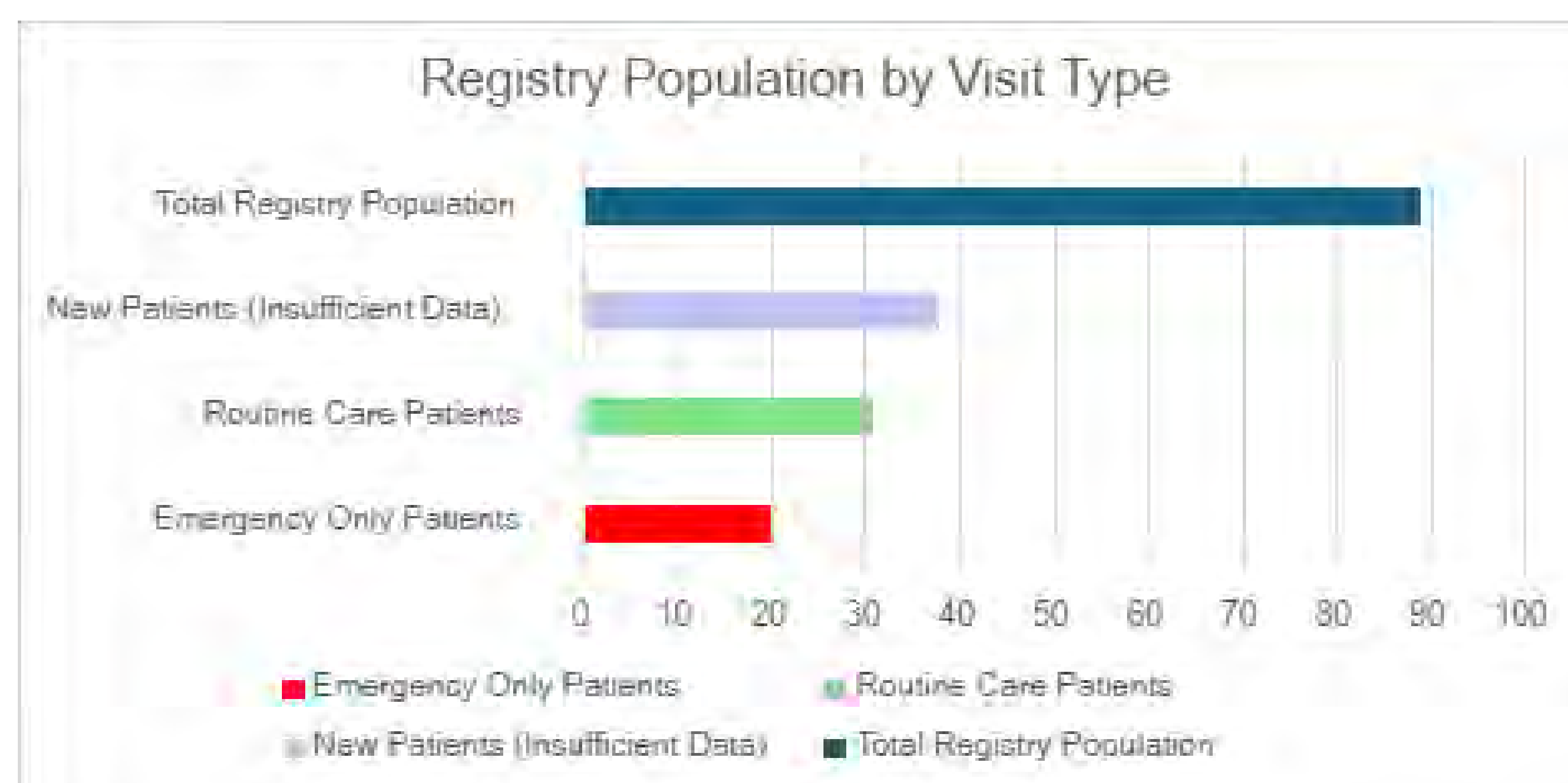

Figure 2. A breakdown of the current registry population categorized by patient visit type.

Discussion

The comprehensive ECU SoDM 2011-2020 database had a total of 26,710 patients of which 41% were male and 59% were female. The registry's total of 89 patients is comprised of 44% female and 56% male participants showing a similar distribution by gender (p=0.58). The 2011-2020 database had a ratio of 61% White and 21% Black patients, which is strikingly congruent with the ratio in the registry's population (62% White and 21% Black, p=0.78)[3]. The demographics of Greenville, NC from the 2022 census were 53% Female and 47% Male, with a race distribution of 52% White and 36% Black[4]. While the distribution is similar to the 2011-2020 database and the registry, it also highlights a potential racial disparity in access to dental care.

Conclusions

There is data that suggests that men are less likely than women to seek help from health professionals[2]. This trend is present in this study showing that males (52%) attend routine dental care at a lower rate than their female counterparts (68%), although not statistically different (p=0.25). Race showed a stark contrast with Blacks less likely to attend routine care than Whites (5% vs. 47%, p=0.0004). Another factor that shows a trend in low rates of routine care is the geographical area of the subjects. Only 13 (32%) of rural subjects attend routine care, compared to 18 (37%) of their urban counterparts (p=0.57). Overall, the registry is a good representation of the ECU SoDM population.

References

[1] Gaber A, Galarneau C, Feine JS, Emami E. Rural-urban disparity in oral health-related quality of life. *Community Dent Oral Epidemiol*. 2018; 46: 132–142. https://doi.org/10.1111/cdoe.12344
[2] Addis ME, Mahalik JR. Men, masculinity, and the contexts of help seeking. Am Psychol. 2003 Jan;58(1):5-14. doi: 10.1037/0003-066x.58.1.5. PMID: 12674814.
[3] Pendleton M, Moss ME, Wu Q, Tempel R, Garcia R, Al-Dajani M. Payment Methods and Demographics Influence Patterns of Dental Service Utilization. J Public Health Manag Pract. 2023 Nov-Dec 01;29(6):929-935. doi: 10.1097/PHH.0000000000001774. Epub 2023 Jun 6. PMID: 37290126; PMCID: PMC10549891.
[4] *Census profile: Greenville, NC metro area*. Census Reporter. (n.d.-b). https://censusreporter.org/profiles/31000US24780-greenville-nc-metro-area/