

Peer Review File

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Reviewer A Comment

Comment A1: Race is limited to black or white. Does this had an impact on the analysis, as this is likely convenient sample? As we know, Hispanics and other minorities has decreased outcomes. Could authors consider this as a limitation?

Reply A1: 1st Question- Does this have an impact on the analysis, as this is likely convenient sample? Answer: Because we did not include other races and Hispanics due to small numbers of patients, the findings only apply to black and white patients. We did not do any sampling. All eligible patients in the NCDB database were included. Because the majority of high-volume academic research programs are included in the NCDB, the findings are generalizable

On page 13, Lines 311-316, we have added the following “The limitation of race to black or white due to the small sample size for other races in the rural area may influence the generality of the findings to the black (N=1,127) and white (N=11,823) population.

2nd Question- As we know, Hispanics and other minorities has decreased outcomes. Could authors consider this as a limitation? Answer: We did not include Hispanics and other minorities due to small sample size. We have added this as one of the limitations.

Comment A2. Does the difference in the number of patients in whites (N=11823) and blacks (1127) have any effect? If so, please explain in the paper

Reply A2: we have added the following comment on **page 13, lines 314-316**, “It is less likely that the difference in the number of patients in whites and blacks has any effect on the findings. The hazard ratios of Black vs. White patients are close to 1.00 and 95% CIs are very narrow, indicating good precision in the estimates.”

Comment A3: It may be worthwhile to investigate the same question in community cancer centers.

Reply A3: We did investigate the same question in community cancer programs and did not find differences in OS between blacks and whites (see newly added Table 4).” We have included the following statement on page8, lines 190-193, **Table 4 has been added on page 21.**

Comment A4: Please include in the discussion about the role of any prospective study in the future.

Reply A4: We have added the following on **page 15, lines 339-341**; “We plan to explore whether the failure to rescue at low volume centers is associated with the improved outcomes from all Academic Research Programs with high volumes.”

Reviewer B Comments

Comment B1: Is it possible to also include low-volume centers and to perform sub-group analysis and in this way compare outcomes between low and higher volume centers? Currently

we assume that the higher OS for AA is seen because of surgery in high-volume / ARP's but we do not know because we only have information on OS in low-volume centers from other studies.
Reply B1: On **page 8, lines 190-193**, we added the following “We have performed analyses of low-volume center and at facility type level. We found there was no significance difference in survival between racial groups treated at low volume (≤ 10) in Community Cancer Program or Comprehensive Community Cancer Program facility type (Table 3) and at each facility type (Table 4).”

Table 3. Hazard Ratios and 95% CIs for Race/Ethnicity at

Volume ≤ 10 and Facility type in Community Cancer Program or Comprehensive Community Cancer Program				
Variables	Unadjusted Model		Adjusted Model	
	Hazard Ratio (95% CI)	p-value	Hazard Ratio (95% CI)	p-value
Race				
White	0.992 (0.921-1.068)	0.8244	0.977 (0.903-1.057)	0.5601
Black	1.000		1.000	

Table 4. Hazard Ratios and 95% CI for Race/Ethnicity Stratified by Facility Type

Race	Unadjusted Model		Adjusted Model	
	Hazard Ratio (95% CI)	p-value	Hazard Ratio (95% CI)	p-value
All Facilities				
White	1.040 (0.9979-1.084)	0.0676	1.005 (0.960-1.052)	0.8328
Black	1.000		1.000	
Community Cancer Program				
White	0.889 (0.738-1.070)	0.2137	0.900 (0.728-1.113)	0.3292
Black	1.000		1.000	
Comprehensive Community Cancer Program				
White	1.020 (0.952-1.093)	0.5708	0.980 (0.910-1.056)	0.5924
Black	1.000		1.000	
Academic/Research Program				
White	1.057 (1.001-1.117)	0.0470	1.024 (0.964-1.088)	0.4382
Black	1.000		1.000	

Comment B2: Methods: Check the amount of factors included in the analysis with the amount of events. Currently many factors are studied increasing the risk of multiple testing.

Reply B2. The reviewer points out a common statistical challenge of multiple regression models. We have added the following limitation on **page 14, lines 329-331**; Finally, testing many predictors may result in a multiple testing problem introducing in Type I errors.

Comment B3: Results section: KM curve: please include numbers at risk in this figure (major)

Reply B3: The at-risk numbers have been added in **Figure 1 on page 16**.

Comment B4: Please try to rephrase this results section in general, and summarize information in a table. Only point out the important findings in the text. Currently it is a very difficult section to read.

Reply B4: On pages 7-10, lines 168-230; the results section has been revised. On pages 19-32, Table 2 provides the information leading the percent risk for each predictor

Reviewer C Comments

Comment C1: There are just repeats and redundancy between the Introduction and Discussion sections, citing the same references.

Reply C1: We acknowledge the reviewer comments but emphasize that this was the first study, to our knowledge, attempting to integrate important surgical references in this manuscript to buttress our message.

Comment C2: This study demonstrated a “reverse” disparity. What were the causes of the results? Probably because the age was younger and there were more females in the AA cohort and more. The authors should provide more discussion also considering previous discussions in the previous reports.

Reply C2: Although the data can be interpreted as “reversed disparity” it is possible that a sex by treatment bias is present. We have added this in the limitation section.

Comment C3: In Table 2 after adjusting, the highest HR is observed in the Stage and Grade. Did these factors contribute to the OS difference before adjusting?

Reply C3: This was discussed on page 9, lines 221-225; “Pathologic stage 2 disease have a 2.54 times the risk of dying compared to those stage I disease, and patients with stage 3 disease have a 3.45 times the risk of dying compared to those with stage I disease. Compared to well-differentiated tumors, those with moderately differentiated tumors are 2.64 times more likely to die, while those with poorly/undifferentiated tumors are 3.58 times more likely to die.”

Comment C4: There are several limitations in this study. One of them might be the difference of cohort size between the AAs and Whites. Didn't it influence the statistical analysis?

Reply C4: The reason that race is limited to black or white because the sample size is too small for other races in the rural area. This will influence the generality of the findings to the black and white population. On page 13, Lines 311-316, we have added the following “The limitation of race to black or white due to the small sample size for other races in the rural area may influence the generality of the findings to the black (N=1,127) and white (N=11,823) population. We have also added the following comment in the conclusion on page 15, lines 343-345; “We plan to explore whether the failure to rescue at low volume centers is associated with the improved outcomes from all Academic Research Programs with high volumes.”

Reviewer D Comments

Comment D1: I do think that data on the type of adjuvant or neoadjuvant chemotherapy is needed for the study to determine if there was a difference amongst the two groups as it is standard treatment modality for patients to receive some form of chemotherapy. The study lacks from having this information on what is the common practice of the site to give neoadjuvant

chemotherapy or adjuvant chemotherapy, what type of chemotherapy, was the duration of chemotherapy completed, did patients receive chemotherapy. What were the specifics amongst these two groups regarding these factors. The authors state no difference in chemotherapy but what was this therapy was it chemoradiation which they mention several times but data surrounding chemotherapy is seldom mentioned and is a treatment modality amongst these patients more so than chemoradiation. This should be further clarified for the study.

Reply D1: We have added the following on **page 14 lines 324-327**; finally, an interesting and unresolved question in this study is whether an ethnic difference exists between patients receiving neoadjuvant versus adjuvant therapy. We could not address this question as the database utilized for this study provides information on the receipt of chemotherapy or radiation therapy only.

Comment D2: In addition, does their hospital offer any indigent types of programs to where patients could get treatment at cost to the hospital? Was this a factor as to why those uninsured received treatment. Did Medicaid at the time of study cover these expenses for patients?

Reply D2: Unfortunately, the NCDB does not collect data on any indigent types of programs or specifics expenses covered.