

Shaving Waivers in the United States Air Force and Their Impact on Promotions of Black/African-American Members

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ABSTRACT

Introduction:

Regulations of the United States Air Force (USAF) prohibit male members from growing beards. Shaving waivers can be issued to airmen who are not able to shave due to various medical conditions such as pseudofolliculitis barbae, a condition that predominantly affects Blacks/African-Americans. Beard growth has been anecdotally associated with a negative impact on career progression. This study sought to establish if shaving waivers are associated with delays in promotion and, if present, if this association leads to racial bias.

Materials and Methods:

An online survey that collected information relating to shaving waivers and demographic data was emailed to all air force male members at 12 randomly selected air force bases. Generalized linear models were conducted to test the waiver group difference in promotion time controlling for rank and the covariates of race/ethnicity, level of education, professional military education completion, and disciplinary action.

Results:

A total of 51,703 survey invitations were emailed to members, and 10,383 complete responses were received (20.08% response rate). The demographics of the study cohort closely matched that of the USAF. Shaving waivers were associated with a longer time to promotion ($P = .0003$). The interaction between race and waiver status was not significant, indicating that shaving waivers are associated with a similarly longer time to promotion in individuals of all races. However, 64.18% of those in the waiver group were Black/African-American despite only being 12.85% of the study cohort.

Conclusions:

This study found an association between shaving waivers and delayed promotions. The majority of the waiver group was Black/African-American, which may lead to a racially discriminatory effect of the male grooming standards of the USAF.

INTRODUCTION

Regulations of the United States Air Force (USAF) prohibit beard growth for male members in order to promote a clean, professional appearance, with some exemptions made for religious accommodations. In addition, beard growth can interfere with the seal of a gas mask, oxygen masks used by

aircrews or ground crews, and medical respirators. A member may receive a shaving waiver to allow for some degree of beard growth if they have a medical condition that precludes close shaving, the most prevalent reason being pseudofolliculitis barbae (PFB).

Pseudofolliculitis barbae is a foreign body reaction to a tightly curled hair shaft that has grown back into the skin. The resulting granulomatous inflammatory response leads to a firm and indurated papule, typically seen on the face and neck. Further shaving will traumatize these lesions, causing them to grow larger and more painful, possibly even leading to scarring. This condition can appear in a person of any ethnicity but is predominantly seen in Blacks/African-Americans.¹⁻³ Pseudofolliculitis barbae does not typically respond to topical medications or different shaving techniques owing to its pathophysiology, and spontaneous resolution over time is unlikely. An effective management of PFB is to allow the hair shaft to grow out, leading to it curl away from the skin and become long enough that it no longer has the stiffness required to perforate into the skin.

Male beard growth beyond that allowed by USAF regulation can cast members in a negative light as it can be

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considered unprofessional. The Special Duty Catalog Guide⁴ specifically states that members on a shaving waiver will not be allowed into the Honor Guard. This guide also requires members to maintain the “highest levels of professionalism and personal appearance” for other highly sought-after duties such as recruiting, military training instructor, and the Thunderbirds demonstration team. This has, anecdotally, been used to exclude members with shaving waivers from these fields, all of which are high profile and can lead to faster promotion.

Conditions that aid promotion in the USAF include job performance, leadership skills, physical fitness, completion of professional military education (PME), and level of education (associate degree, bachelor's degree, etc.). Conditions that can negatively affect promotion rate include disciplinary actions such as letters of reprimand or legal punishment under the Uniform Code of Military Justice.

A previous pilot study of a small group of USAF male members showed that a large number of those who had been on a shaving waiver felt discriminated against, but the study was not adequately powered to detect a difference in time to promotion.⁵ Black/African-American members made up the largest proportion of waiver holders in that study (68.44%). Given the USAF's recent study of racial disparities within the service, we conducted this study in a broader setting to determine if being on a shaving waiver is associated with longer times to promotion and whether this is associated with race/ethnicity.

METHODS

This survey (**Fig. S1**) was approved as exempt research by the Institutional Review Board at the 59th Medical Wing at JBSA—Lackland, TX. It consisted of questions regarding age, military rank, years of active duty service, whether the respondent had ever been on a shaving profile and for how long, Fitzpatrick skin type, race/ethnicity, level of education, disciplinary action(s), completion of PME, intention to complete a 20+ year career, and (for respondents indicating that they were ever on a shaving waiver) any perceptions of a negative impact on career progression. The Air Force Survey Office distributed the survey via electronic mail (email) to active duty male members at 12 randomly selected USAF bases around the world. Survey participation was voluntary and each invitee was limited to only one survey attempt owing to the required use of each individual's Common Access Card as stipulated by the hosting website. No personally identifiable information was recorded or provided to the research team.

The online digital survey was open to responses for a total of 32 days (November 9, 2020 to December 11, 2020) from the initial email contact. A single reminder email was sent out to the same group at the halfway point of the study.

Data Analysis—Demographic characteristics were compared between the waiver and no-waiver groups using either chi-square test (frequency) or *t*-test (mean). Time to current rank (in days) was calculated as the difference between their

most recent promotion date and their total days of service (years of service $\times$ 365 – [today's date – date of promotion to current rank]). Surveys were excluded if the respondent indicated that they were not an active duty air force male, had less than one year on a shaving waiver, or if the equation used to calculate time to current rank yielded a negative number. A generalized linear model (GLM) with a Gamma distribution and log-link was conducted to test the waiver group difference in promotion time controlling for rank and the confounding factors (i.e., race/ethnicity, level of education, PME, and disciplinary action). To test for association between race/ethnicity and promotion time, the initial GLM was run without shaving waiver status included and this was also done with the no-waiver group. To examine the cumulative effect of shaving waivers, GLMs controlling for the confounding factors were run for only the shaving waiver group per rank. Significance was set to $P < .05$. Statistical analyses were performed using SAS version 9.4 (Statistical Analysis Software, Cary, NC).

Finally, we assessed whether the association between shaving waivers and promotion time varied by race. To do so, we ran two GLMs with Gamma distribution and log-link with or without an interaction between race and shaving waiver status and compared these models using an analysis of variance. This analysis was run in R 4-0-2.⁶

RESULTS

Survey participation—Survey invitations were sent to 53,371 email addresses. About 1,668 invitations were not delivered either due to full inboxes or invalid email addresses, resulting in 51,703 individuals receiving the survey invitation. A total of 10,383 unique individuals completed the survey—a 20.08% response rate. The exclusion criteria removed 1,044 surveys, which resulted in 9,339 surveys being used in the analysis: 8,200 members who have never been on a waiver (no-waiver group) and 1,139 who have ever been on a waiver for at least one year at some point during their career (waiver group). Certain races/ethnicities in the cohort were combined for the analysis due to low numbers of respondents. Native Hawaiian, Other Pacific Islander, Native American, and Native Alaskan were combined and designated as “Other.” Those who preferred to not provide their race/ethnicity were designated as “Unknown.”

Demographic Characteristics—There were significant differences in demographic characteristics between the no-waiver group and the waiver group (**Table I**). The waiver group was composed of 94.47% enlisted and 5.53% officer while the no-waiver group was 72.11% enlisted and 27.89% officer. The majority of the waiver group was Black/African-American (64.18%) despite this group constituting only 12.85% of the cohort. About 76.38% of the no-waiver group was White. The waiver group had a greater rate of disciplinary action (18.96%) compared to the no-waiver group (11.45%) ($P < .0001$). The demographic makeup of the study

TABLE I. Demographic Characteristics of Survey Participants ($N = 9,339$)

	No waiver ($n = 8,200$)	Waiver ($n = 1,139$)	Totals ($n = 9,339$)	<i>P</i> value
Age (Mean, SD)	32.62 (7.41)	31.91 (5.78)	32.53 (7.24)	.002
Years of service (Mean, SD)	11.17 (6.78)	11.27 (5.85)	11.18 (6.67)	.61
Years on waiver (<i>n</i> , %)				
1-2 years	N/A	340 (29.85)		
3-4 years	N/A	240 (21.07)		
5-6 years	N/A	164 (14.4)		
7-8 years	N/A	90 (7.9)		
> 8 years	N/A	305 (26.78)		
Education (<i>n</i> , %)				<.0001
High school diploma	2,040 (24.88)	297 (26.08)	2,337 (25.02)	
Associate degree	2,390 (29.15)	446 (39.16)	2,836 (30.37)	
Bachelor's degree	1,832 (22.34)	282 (24.76)	2,114 (22.64)	
Master's degree	1,597 (19.48)	109 (9.57)	1,706 (18.27)	
Doctorate	341 (4.16)	5 (0.44)	346 (3.7)	
Race/Ethnicity (<i>n</i> , %)				<.0001
Asian	383 (4.67)	11 (0.97)	394 (4.22)	
Black	469 (5.72)	731 (64.18)	1,200 (12.85)	
Hispanic	190 (2.32)	23 (2.02)	213 (2.28)	
White	6,263 (76.38)	267 (23.44)	6,530 (69.92)	
Other	86 (1.05)	6 (0.53)	92 (0.99)	
Unknown	809 (9.87)	101 (8.87)	910 (9.74)	
Completed PME (<i>n</i> , %)				.012
Yes	7,087 (86.43)	1,015 (89.11)	8,102 (86.75)	
No	1,113 (13.57)	124 (10.89)	1,237 (13.25)	
Rank status (<i>n</i> , %)				<.0001
Enlisted	5,913 (72.12)	1,076 (94.47)	6,989 (74.84)	
Officer	2,286 (27.88)	63 (5.53)	2,349 (25.16)	
Disciplinary action (<i>n</i> , %)				<.0001
Yes	939 (11.45)	216 (18.96)	1,155 (12.37)	
No	7,261 (88.55)	923 (81.04)	8,184 (87.63)	

Abbreviations: PME, professional military education; N/A, not applicable.

cohort very closely reflected that of the USAF in general (Table S1).⁷

Differences in time to promotion—Shaving waivers were associated with a significantly longer time to promotion compared to the no-waiver group ($P = .0003$) (Table S2). Several additional analyses were performed to evaluate the association of race/ethnicity with time to promotion. Figure 1 shows the differences in model coefficients for race/ethnicity when shaving waiver status is included and excluded from a model predicting time to promotion; race/ethnicity loses significance when shaving waiver status is included in the model, indicating that race alone is not associated with longer time to promotion. We then compared two GLMs with and without an interaction between race and waiver status (including the confounding factors of race/ethnicity, level of education, PME, and disciplinary action). This interaction was not significant (analysis of variance, $P = .39$), indicating that shaving waivers are associated with a similarly longer time to promotion in individuals of all races. Finally, a GLM predicting time to current rank in the no-waiver group while controlling for rank and the confounding factors found that the races/ethnicities of Other ($P = .04$) and Unknown ($P = .04$) were associated with a longer time to promotion compared to

White members; no significant difference for Black/African-Americans was found ($P = .45$) compared to White members (Table S3).

Cumulative time on a shaving waiver was associated with a progressively longer time to promotion. For the ranks of E-5 and E-6 (the ranks with at least 8 years of service as well as the most responses received), we found that having been on a shaving waiver for greater than 8 years was associated with a statistically significant longer time to promote to that rank compared to lesser amounts of time on a shaving waiver (Fig. 2 and Table S4). In addition, the proportion of members in the waiver group (ever on a waiver for at least one year) peaked at E-5 for enlisted and O-3 for officers and then steadily declined. Among the respondents in the senior ranks of O-6 to O-10 there were 2 in the waiver group (0.17%) vs. 201 in the no-waiver group (2.5%).

Perceptions of shaving waivers—We also queried the respondents in the waiver group about their perceptions of being on a shaving waiver. Four hundred and thirty-seven (38.36%) of the respondents in the waiver group indicated that they perceived that it had a negative impact on their career. When asked to select from a list of potential impacts, 320 (73.23%) indicated that they perceived that they were

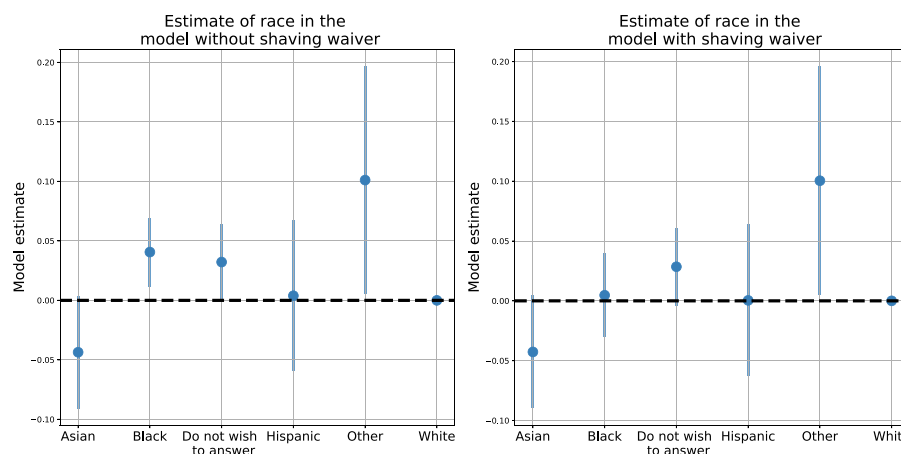


FIGURE 1. Coefficient plot showing GLM estimates and 95% confidence intervals of the effect of race/ethnicity on time to current rank based on a GLM including rank, level of education, completion of professional military education, and disciplinary action. A. Without shaving waiver status included. B. With shaving waiver status included. Black/African-American race loses its significance when shaving waiver status is included. Abbreviation: GLM, Generalized linear model.

excluded from leadership opportunities and 219 (50.11%) perceived that it impacted earning awards. There was no significant difference between groups in the proportion of members wanting to complete a 20+-year career in the USAF (83.41% for no-waiver group vs. 85.07% for waiver group; $P = 0.156$).

DISCUSSION

This analysis of 9,339 surveys from active duty male USAF members at 12 randomly selected bases found that shaving waivers were associated with longer times to promotion. The lack of significant interaction between shaving waiver status and race/ethnicity indicated that shaving waivers are associated with an equivalent negative impact for members of all races. Black/African-Americans members, despite being only 12.85% of the study cohort, constituted 64.18% of the shaving waiver group; a difference that is likely due to the high prevalence of PFB which often can only be managed with a shaving waiver. This uneven racial distribution of shaving waivers caused a disproportionately negative effect on Black/African-American members. The exact prevalence and racial distribution of shaving waivers in the USAF are not known, but given that past study⁵ of this issue has found a similar racial distribution (and our cohort is nearly identical to the USAF in general⁷), it is expected that this ratio would not change significantly given a larger or different study population within the USAF.

Although we were able to exclude Black/African-American race as an independent negative predictor of time to promotion, the groups “Other” and “Unknown” did have a negative association with promotion time independent of shaving waiver status and all other covariates. Given the small numbers in the “Other” group, and the unknown nature of the “Unknown” group, it is difficult to make conclusions or recommendations based on these data, but it does warrant further study.

There are several reasons for the male grooming standards of the USAF, with the need for consistent and adequate gas mask seal often cited as the chief reason. Hair growth can interfere with a gas mask seal, thereby leaving someone vulnerable to exposure to chemical or biologic agents. There are conflicting published reports from the civilian sector with regard to the impact of facial hair on P2/N95 fit testing,^{8,9} and none that we are aware of evaluating facial hair impact on military gas mask fit. We recommend further study of gas mask and respirator fit testing with facial hair in the military population to clarify this.

For many PFB patients, allowing at least a short beard is often the only treatment option, as the condition does not usually respond to medications or changes in shaving technique. Other treatment options include laser hair removal and chemical depilatories, but both have their limitations. Laser hair removal is safe and effective, but many members are reticent to undergo a relatively uncomfortable treatment that could permanently alter their ability to grow facial hair. In addition, this modality is not universally available at all military treatment facilities (TriCare does pay for off-base care for this, but it can still be difficult for some members to attain this service). Chemical depilatories are effective as well, but the irritant reaction that they often cause can be too severe for regular use.

In addition to the detrimental association with promotion rate, there are several other ways members on shaving waivers are disenfranchised. As mentioned previously, they are often deemed ineligible for high-profile positions and duties. Given the racial distribution of waivers, this may have an unintended discriminatory effect by limiting the opportunities that these members are offered. Based on the evidence showing an increasingly negative association with the time spent on shaving waivers, as well as the decreasing proportion of members ever on a waiver in higher ranks, we speculate that these

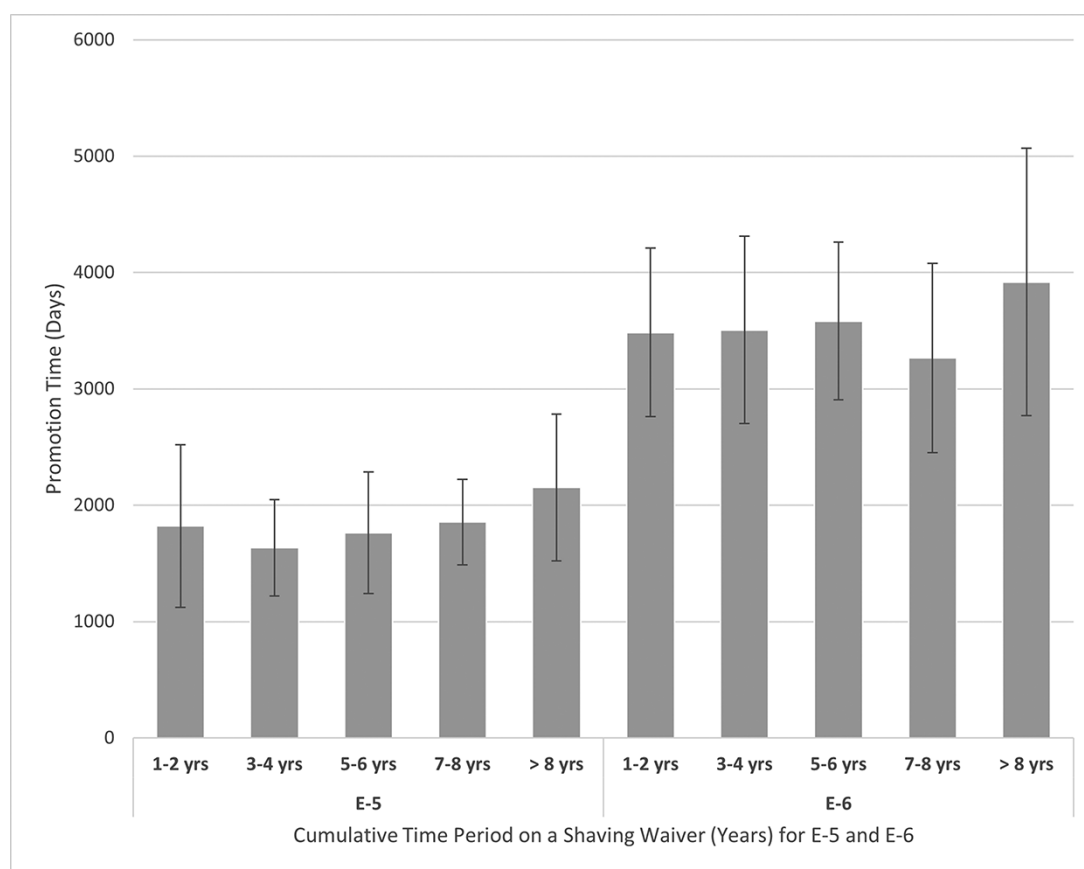


FIGURE 2. Promotion time by rank and cumulative years on a shaving waiver for E-5 and E-6 (ranks with the highest number of responses). Those on a waiver for more than 8 years took longer to promote than those on a waiver for shorter periods of time. All categories with $P < .05$ except for E-6 on a waiver for 5-6 years ($P = .126$).

members, irrespective of race/ethnicity, may perceive this bias against shaving waivers and choose to leave the service earlier.

An unexpected result of the data collected was the significantly larger rate of disciplinary actions reported in the waiver group. As we controlled for disciplinary action in our overall analysis of time to promotion, we will not discuss this issue further, but do recommend that this be the subject of future research to understand the cause of this association.

In addition to the negative impacts on members, the grooming standards also generate a significant expense in medical visits. Between March of 2017 and February of 2019, there were 36,309 office visits USAF-wide that included the international classification of disease, 10th revision (ICD-10) code for PFB (L73), costing \$9,754,827 (internal data). Although PFB may have been a minor portion of some of those visits, this number indicates that shaving issues add a large burden to the military health system.

There were several limitations to our study. The response rate for this survey was only 20.08%, which may limit its generalizability. However, evidence shows that email surveys typically receive lower response rates than mail-based surveys (20% vs. 40% or more), but have similar substantive

results.¹⁰ Also, because our large cohort of 9,339 respondents was nearly identical in demographics to the overall USAF, we are confident that our findings are generalizable within the USAF. Response bias may have also been an issue given the subject of study, and we attempted to minimize this by giving the survey the banal title of “United States Air Force Shaving Survey” and by only allowing a single submission per respondent. Because of how we calculated time to current rank by only knowing the number of years of service the member had, the time to their current rank is not precise data. We did this as we assumed that members would readily know this information and felt that this was the best balance of precision and survey participation that we could achieve. We also do not know when the confounding factors such as level of education and disciplinary actions occurred; those that occurred earlier in a member’s career would be expected to have a higher impact on their promotions. Lastly, our data only included a small portion of the USAF (approximately 4% of all male USAF members). These limitations, and those inherent to survey-based studies, could be overcome in future studies by drawing directly from electronic personnel systems that could include the entire USAF or even the entire Department of Defense.

CONCLUSIONS

This study found that shaving waivers were associated with a significantly longer time to promotion in the USAF and that Black/African-American members were disproportionately affected by this. The results of this study are especially relevant right now as the USAF recently released a report entitled “Independent Racial Disparity Review,”¹¹ where racial bias was found in several areas of the USAF including promotions. However, the report noted that no causation could be ascribed to this disparity without further research. We hope that the findings of this study shed light on this issue by showing that the promotion system is not necessarily inherently racially biased, but instead biased against the presence of facial hair which will likely always affect the promotions of Blacks/African-Americans disproportionately because of the relatively higher need for shaving waivers in this population. In order to refute or substantiate these findings, we argue that wider study of this issue is warranted. If substantiated, then the benefits of the grooming standards, as defined in Air Force Instruction 36-2903, should be re-evaluated in the context of these findings.

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SUPPLEMENTARY MATERIAL

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CONFLICT OF INTEREST STATEMENT

None declared.

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