Transforming NIH Academic Trial Culture

Impact of Race on Attrition of Women Faculty at a Research-Oriented Medical School

Perelman School of Medicine, UNIVERSITY of PENNSYLVANIA

FOCUS ON HEALTH & LEADERSHIP FOR WOMEN

Alyssa F. Westring, Rebecca M. Speck, Mary D. Sammel, Patricia Scott, Lucy W. Tuton, Emily Conant, Jeane Ann Grisso, Stephanie Abbuhl

The NIH-TAC Trial

Overview: A cluster-randomized trial of a 3 year intervention at the Perelman School of Medicine to enhance the institutional culture, increase academic productivity, and improve job satisfaction for women assistant professors

A multi-faceted intervention targeted 3 critical levels
- **Senior Leadership** provided oversight and input
- **Department/Division Task Forces** provided customized, local interventions to target unit-specific needs
- **Women Assistant Professors** participated in: Total Leadership & Manuscript Writing Workshops
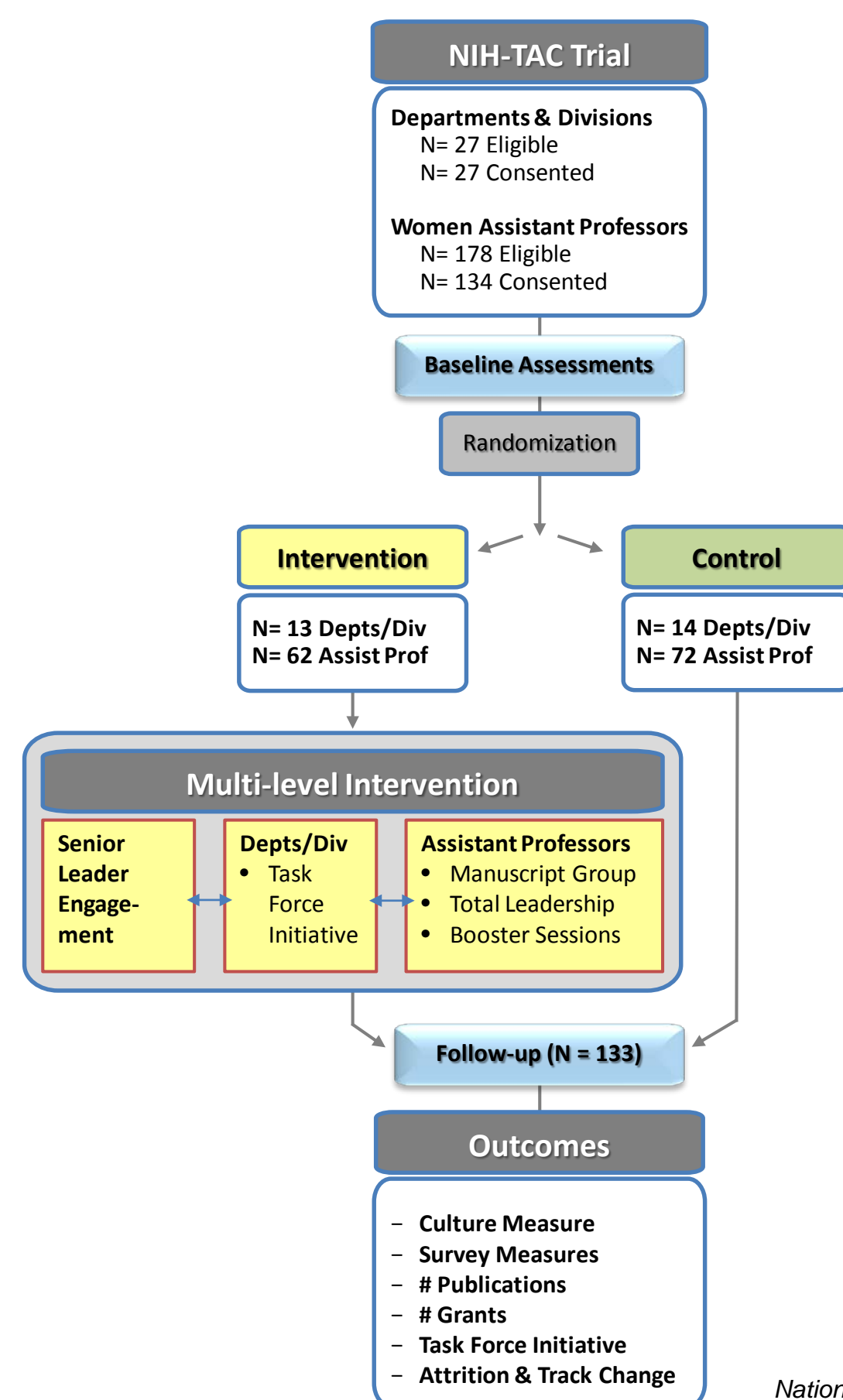
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Study Aims

Background: In senior academic ranks and leadership positions, the representation of women falls short of their male counterparts. Little attention has been paid to the fact that under-represented minority (URM) women experience additional bias or "double jeopardy" associated with *both* their race and gender. It is important to understand factors associated with the career trajectories of women assistant professors.

Purpose: To identify factors associated with attrition among women faculty at an elite school of medicine over a three year period

Methods

- Departments/divisions with at least three women assistant professors (N = 27 depts/divs) were randomly assigned to intervention versus control groups

- Baseline (2010) and follow up (2013) data were obtained by questionnaire from 133 women assistant professors

- Baseline (2010) measures included: Age, marital & parental status, race, core self-evaluations, work hours

- Follow-Up (2013) measures included departure from institution

Table 1. Participant Characteristics by Race (N = 131)

	URM N= 15 11.5%	White N= 79 60.3%	Asian N= 37 28.2%	p
Left Institution[a]	6 (40.0)	9 (11.4)	6 (16.2)	0.02
Unmarried[a]	2 (13.3)	13 (16.5)	5 (13.5)	0.90
At least 1 Child at Home[a]	11 (73.3)	62 (78.5)	25 (67.6)	0.45
Track[a]				0.55
Clinician Educator	13 (86.7)	54 (68.4)	25 (67.6)	
Research	2 (13.3)	13 (16.5)	6 (16.2)	
Tenure	0 (0)	12 (15.2)	6 (16.2)	
Part time[a]	1 (6.7)	4 (5.1)	1 (2.7)	0.84
Time as Asst. Prof.[a]				0.25
< 3 Years	5 (33.3)	36 (45.6)	18 (48.7)	
3-6 Years	8 (53.3)	23 (29.1)	8 (21.6)	
>6 years	2 (13.3)	20 (25.3)	11 (29.7)	
Age [b]	40.5 (1.37)	41.06 (.58)	40.97 (.88)	0.91
Work Hours [b]	56.00 (2.45)	59.13 (1.10)	61.33 (1.61)	0.28
Core Self-evaluations [b,c]	3.43 (.14)	3.45 (.06)	3.29 (0.90)	0.34

N = 131   P-value based on one-way ANOVA.
[a] Number (Percentage)   [b] Mean (SD)
[c] Scale of 12 items rated on a 5-point scale from 1 (Strongly Disagree) to 5 (Strongly Agree)

Analyses

A generalized linear multivariable model was employed to estimate the risk of attrition

- Generalized estimating equations accounted for clustering by departments/divisions

- Analyses controlled for years in rank, a confounding variable

- Risk factors include race, marital status and core self-evaluation (CSE)

Summary Results

Over a period of 3 years:

21 women (16% of the cohort) left the institution

- URM women were > 3x more likely to leave than White women

- Unmarried women were 3x more likely to leave than married women

- Women with higher core self-evaluations were less likely to leave

- There was no difference in attrition between the intervention and control groups

Table 2. Risk Factors Associated with Attrition[a]

	Risk Ratio(95% CI)	p
Race (White = Comparison)		
URM	3.30 (1.38 – 7.91)	0.007
Asian	1.67 (0.75 – 3.74)	0.210
Marital Status (Married = Comparison)		
Unmarried	3.03 (1.24 – 7.37)	0.015
Core Self-Evaluations[b]	0.43 (0.22 – 0.86)	0.017
Time as Asst. Prof. (<3 Years = Comparison)		
3-6 Years	1.30 (0.51 – 3.28)	0.580
>6 Years	0.15 (0.02 – 1.28)	0.083

[a] Generalized linear multivariable model estimating the risk of attrition using generalized estimating equations to account for the clustering by departments/divisions.
[b] Scale of 12 items rated on a 5-point scale from 1 (Strongly Disagree) to 5 (Strongly Agree)

Conclusions

During a 3-year longitudinal study, 16% of women assistant professors left the university. URM women were greater than three times more likely than White women to leave their faculty positions at a research-oriented medical institution. While unmarried women and those with less positive core self-evaluation were also more likely to leave, these results were independent of the race effects. Understanding the intersection been gender and race on the retention and advancement of women faculty is critical to developing, implementing, and evaluating strategies to increase diversity.