RESEARCH

Pharmacy Faculty Retirement at Colleges and Schools of Pharmacy in the United States and Canada

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Objectives. To examine the work-related activities of full-time faculty members 55 years of age and older; to describe the retirement plans and perceptions of these faculty members; and to examine the factors, perceptions, or conditions that might influence the retirement decision.

Methods. Pharmacy faculty members aged 55 years and older in the United States and Canada were invited to participate in an online survey regarding their perceptions on issues related to their retirement planning behavior.

Results. Four hundred eighty-eight faculty members completed the survey instrument. The typical respondent worked 50 hours per week on work-related activities, was active in teaching and service, and had published an average of 5 refereed papers during the previous 36 months. The number of articles published was positively related to the respondent's target retirement age. The average anticipated retirement age was 66.6 years, and most respondents participated in a defined benefit plan. The majority would revise their target retirement age downwards if conditions were favorable.

Conclusion. The primary factors that influence the pharmacy faculty retirement decision include financial status, academic productivity, and higher order needs such as the opportunity to participate in meaningful activities. These findings can be used by administrators in strategic planning related to attracting and retaining quality faculty members.

Keywords: retirement, career, survey, faculty

INTRODUCTION

Colleges and schools of pharmacy in the United States have experienced explosive growth during the past 11 years.¹ Between fall 2000 and fall 2011, the number of US pharmacy colleges and schools increased from 82 to 123 (115 fully accredited or in candidate status and 9 that were in pre-candidate status). A pharmacy task force on factors that influence the pharmacy faculty workforce reported that colleges and schools of pharmacy will need 1,200 additional faculty members between 2008 and 2018 due to a continued expansion of new and existing pharmacy programs, faculty retirements, and unfilled positions.² Approximately 40% of pharmacy faculty members were 50 years of age or older in 2008. The age at which a faculty member retires may be influenced by several factors, including financial considerations, medical insurance accessibility, age, health, perceptions of organizational value, and spousal influence.³⁻⁵

There is a significant body of literature regarding factors surrounding faculty retirement.⁴⁻¹² These investigations

fall into 1 of 3 categories: those that are national in scope; those that pertain to the retirement behaviors of 1 institution; and those that are discipline or job specific. Several studies focused on legislation passed on January 1, 1994, that eliminated mandatory retirement for tenured faculty members (Public Law 99-592, 1986). For example, Ashenfelter and Card used member survey data obtained from the Teachers Insurance Annuity Association-College Retirement Equity Fund (TIAA-CREF) to conclude that abolishing mandatory retirement had no significant effect on the number of retirements among faculty members under the age of 70 years.¹² However, significantly fewer faculty members aged 70 and 71 years retired after mandatory retirement was abolished than before it was abolished. The limitation of this investigation is that the survey results were based on TIAA-CREF participants, which are defined contribution plan participants (as opposed to defined benefit plan participants). Defined contribution plans are historically more prevalent at private universities and entail faculty members contributing to a 403b plan.^{10,11,13} Faculty members' institutions usually contribute a percentage of the faculty member's salary to the plan. For example, a university might contribute 8% of a faculty member's salary if he or she contributes 5%.

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Some institutions require no faculty contribution to participate in their 403b plan. In these plans, the faculty member takes the investment risk and his or her final accumulation is based on both asset allocation performance and financial capital market returns over one's academic career. A defined benefit plan, on the other hand, rewards longevity at one or more institutions within a particular state. For example, a faculty member with 30 years of service at an institution may receive a lifetime annuity, with some inflation protection, that is based on an average of one's highest 3 to 5 years of earnings multiplied by a percentage per year of service.

There are benefits and costs to both the defined contribution plan and the defined benefit plan. The defined benefit plan is less risky in the sense that the investment risk is taken by the institution or state and contractually specifies what the recipient's benefit will be based on income and years of service. Defined benefit programs have a vesting period (sometimes as many as 10 years) and reward longevity at the institution (ie, "golden handcuffs"). If a faculty member leaves the institution before becoming vested, he or she is penalized. On the other hand, the defined contribution plan gives faculty members more flexibility in the sense that they are usually immediately vested and can move from one institution to another without being penalized. If their portfolio does well, there could be a greater amount of money at retirement. If it does not, there is likely to be less.

Clark and Ghent used yearly data collected from 1984 to 2001 from faculty members 58 years and older at the University of North Carolina (UNC) to determine the impact of the abolition of mandatory retirement on actual retirement.¹⁰ The difference between this investigation and that by Ashenfelter and Card is that approximately 71% of the UNC sample participated in the state's defined benefit plan. Despite the differences in retirement plans in the 2 studies, Clark and Ghent's study results corroborated those of Ashenfelter and Card by showing a sharp decline in the frequency of UNC faculty retirements at age 70 years and above after the elimination of mandatory retirement.^{10,12}

Lozier and colleagues studied 18 factors that might influence retirement decisions among faculty members (eg, more family time, retirement benefits, working conditions, health) and found that the 2 most important ones were overall financial status and eligibility for full retirement benefits.⁷ The authors found that the income replacement value of a faculty member's retirement plan was important in deciding when to retire with average retirement age more than 2 years lower for public defined-benefit retirees than for private school defined-contribution retirees (63.1 years vs 65.4 years). Bahrami and colleagues

looked at several factors that might impact the retirement decision of faculty members, including the end of mandatory retirement, early retirement incentives, health status, and perceived adequacy of retirement income, and found that the latter was significantly related to the decision to retire.⁴

Kim examined whether declining research productivity resulted in earlier retirement of faculty members at the University of California.⁹ Kim found that faculty members who published fewer research papers than their peers during the 3 and 15 years prior to the announcement of a voluntary early retirement programs were more likely to retire early. An explanation for this behavior has its roots in human capital theory, which posits that workers will make human capital investments if the perceived present value of the investment is greater than the cost of the investment.¹⁴ Applying this theory to early retirement, Kim argued that faculty members who publish papers later in their careers (and assuming a positive relationship between research productivity and future earnings) can expect future monetary and nonmonetary rewards and therefore are less likely than their less-productive peers to retire early.⁹

Faculty members have a self-interest to retire at the most optimal time for them. Administrators' interest in faculty retirement comes from a strategic planning perspective as they work to attract and retain quality faculty members.⁶ Because there is no mandatory retirement in academia, the decision to retire is usually up to the faculty member.

The goals of the present descriptive investigation were threefold. First, we examined the work-related activities of full-time faculty members 55 years of age and older. Next, we describe the retirement plans and perceptions of these faculty members, including the age at which they plan to retire, the amount of income replacement they think they need in retirement, the retirement plan(s) they have at work, and the important factors that influence their retirement plans. Finally, an examination is done regarding what factors, perceptions, or conditions might influence the retirement decision using projected retirement age as the dependent variable.

METHODS

Institutional review board approval was received for this project. A list of all full-time faculty members 55 years and over at private and public colleges and schools of pharmacy in the United States and Canada, as well as in Puerto Rico and Kuwait, was obtained from the American Association of Colleges of Pharmacy (AACP). The database included the names, e-mail addresses, academic title, and birthdates of 1,642 faculty members.

A survey instrument was developed based on previous investigations regarding factors that might influence faculty retirement decisions.^{3-6,11} A cover letter and survey instrument was e-mailed to the sample. The cover letter assured participants that their responses were anonymous and asked those willing to participate to click a link and complete the online survey instrument. The survey instrument was active from April 4, 2011, to June 2, 2011. During this time, the original mailing and 3 reminders were sent to all faculty members on the AACP list. SPSS version 16 (SPSS, Chicago, IL) was used to test various descriptive and statistical relationships at a *p* value of 0.05.

The first objective was to examine the work-related activities of full-time faculty members aged 55 years and older. Descriptive statistics were used to examine this. The second objective was to describe the retirement plans, their perceptions regarding the age at which they plan to retire, the amount of income replacement they think they need in retirement, the retirement plan(s) they have at work, and the important factors that influence their retirement plans. Descriptive statistics were used to assess this.

The third objective was to examine relationships between factors, perceptions, or conditions that might influence the target retirement age. The descriptive design of this investigation did not allow for statistical testing of this or many other potential predictors of target retirement age. However, we were able to test several relationships using student *t* tests, one-way ANOVAs, and multiple regression analysis.

RESULTS

Eighty-four of the 1,642 e-mail invitations sent were undeliverable (e-mail not working or rejected by the server). Twenty-seven recipients replied that they were not eligible to participate. Of the remaining 1,531 members in the sample, 488 (32%) participated in the survey. To assess nonresponse bias, we used a methodological procedure recommended by Churchill.¹⁵ The procedure examines the distinctiveness of early and late respondents on variables of interest. By keeping track of those who responded to the initial mailing and subsequent reminders, the means of the variables of interest can be calculated and then compared among the different subgroups to determine whether the subgroups are significantly different, based on the degree of difficulty in securing a response.¹⁵ If significant differences are not evident, one may conclude that nonresponders are not systematically different from responders. Based on our results, nonresponse bias was not evident in this sample.

Demographics of the sample respondents are given in Table 1. The mean respondent age was 60 years, and the

mean anticipated retirement age was 66.6 years. The majority of respondents had achieved the rank of professor, while most of the respondents had a PhD degree rather than a PharmD degree. The majority of respondents had over 25 years of service at their institution, earned in the \$100,000 to \$125,000 range, and had a household income in the \$125,000 to \$150,000 range. Respondents from public colleges and schools of pharmacy outnumbered those from private ones by an almost 2-to-1 margin, and approximately 43% held administrative appointments. In addition, most of the respondents were tenured, and 63% expected to receive an inheritance during the next 10 years of \$5,000 or less, while 12% expected to receive greater than \$100,000.

Respondents 55 years and older worked approximately 50 hours per week in the areas of teaching, scholarship, and service (Table 2). In a typical work week, respondents dedicated approximately 14 hours to teaching-related activities, 13 hours to scholarship activities, 9 hours to service, 12 hours to administration, and the remainder to consulting and other activities. The only significant differences between the work activities of those in private vs. public colleges and schools of pharmacy was the

Table 1. Demographics of Sample Respondents to a Pharmacy Education Survey Regarding Retirement Planning

Variable	Respondents, No. ^a (%)
Gender	
Male	330 (75.2)
Female	109 (24.8)
Degree	
PhD	262 (66.7)
PharmD	131 (33.3)
Rank	
Instructor	14 (3.1)
Assistant Professor	33 (7.4)
Associate Professor	117 (26.3)
Professor	281 (63.1)
Tenure Status	
Tenure	317 (74.4)
Non-tenure	109 (25.8)
Years at present institution	
0-5	59 (13.3)
6-10	87 (10.1)
11-15	54 (11.2)
16-20	50 (12.1)
21-25	45 (19.6)
Over 25	150 (33.7)
Institution	
Public	285 (64)
Private	160 (36)

^a Does not add up to 488 due to missing data

number of hours dedicated to scholarship, where the respondents from public colleges and schools spent an average of 15 hours per week on scholarship compared to 10 hours per week spent by faculty members of private colleges and schools.

During the 36 months prior to completing the survey instrument, respondents produced on average: 1 scholarly article in an edited book; 5 scholarly refereed articles; 1.7 scholarly non-refereed articles; 3.5 paper presentations at conferences; 3.8 refereed abstracts or posters; and 1.9 grants. Faculty members at public colleges and schools produced more in each of the above categories than their colleagues at private colleges and schools. However, the difference was significant at the 0.05 alpha level in only 2 categories: scholarly articles in edited books, and scholarly non-refereed articles.

The majority of respondents (64%) stated that their institutions offered defined benefit plans, while the balance offered only defined contribution plans. Approximately 6% stated that their institutions offered additional retirement plans, such as a 457b plan, which is a nonqualified plan that allows state workers to defer part of their income. Almost 30% of respondents stated that their institution did not contribute to social security on their behalf. The majority of respondents stated they need 51% to 70% of their final year's salary in retirement to maintain their living standard. Approximately 60% of the respondents stated that they would consider retiring earlier than their target retirement date if conditions were right. Almost 70% of those that would consider earlier retirement than their stated target listed increased financial security as the major condition, followed by health status, health insurance accessibility, job satisfaction, and family considerations.

Respondents were asked to rank in order from most to least important the factors that influence their retirement plans. These factors were based on a review of the literature pertaining to faculty retirement.^{3-6,10,11} The mean rank order of the relative importance of retirement factor

influences were as follows: obtaining the income replacement deemed necessary to maintain one's standard of living, the opportunity to participate in meaningful activities, reduced job satisfaction, becoming less effective at work, declining health, support from significant other, and loss of status at work.

Student *t* tests and one-way ANOVAs revealed that tenure status, type of institution (public or private), gender, academic rank, terminal degree, household income, and institutional income were not significantly related to respondents' target retirement age. However, using multiple regression analysis, we found that there was a significant positive relationship between target retirement age and number of scholarly refereed articles written ($p < 0.001$). This suggests that the more scholarly activity late in a faculty member's career, the more likely the faculty member is to postpone retirement.

DISCUSSION

This study described the work-related activities of pharmacy faculty members aged 55 years and over. In a typical week, faculty members spent similar amounts of time on teaching, scholarship, and service. Perhaps because their institution's mission may more strongly emphasize scholarship activities, faculty members at public colleges and schools of pharmacy spent more time on scholarship than faculty members at private colleges and schools of pharmacy (average of 15 hours per week vs. 10 hours).

The target retirement age of our respondents was 66.6 years. Respondents indicated that they would need 51% to 70% of their final year's salary to maintain their standard of living, which is often referred to as "the replacement rate in retirement." The replacement rate at retirement is a much discussed topic among the financial services industry, with suggested rates ranging from under 50% of one's final salary to well over 100%.¹⁶⁻¹⁸ Determining the amount of money needed in retirement necessitates the use of assumptions that are uncertain ie, no one knows what the inflation rates, financial asset returns, or individual circumstances (eg, health status) will be in the future.

Despite the uncertainties related to the replacement rate needed in retirement, faculty members can make some reasonable conjectures to come up with an adequate replacement rate that will likely allow them to maintain their standard of living in retirement. Certain expenses will decrease in retirement. For example, retirees will not be paying social security and Medicare taxes, commuting costs, or work-related expenses. As retirees no longer need to save for retirement, that money would be available for living expenses. In addition, children may be independent and not need the support of the retiree. However, other expenses such as those related to health care, travel, and

Table 2. Work-Related Activities of Sample Respondents to a Pharmacy Faculty Survey Regarding Retirement Planning

Variable	No. ^a	Mean (SD)	Median
Hours worked per week	451	50.2 (11.2)	50
Teaching	445	14.4 (9.9)	12
Scholarship	439	13.2 (12.1)	10
SOP service	431	5.6 (5.0)	5
Institutional service	278	3.1 (3.6)	2
Administration	417	12.3 (13.3)	6
Professional development	380	2.6 (2.9)	2
Consulting	333	1.5 (3.3)	0
Other	188	1.7 (7.8)	0

^a Does not add up to 488 due to missing data

hobbies may increase. It is critical that pre-retirees track their expenditures prior to retirement so that they can get a sense of what their expenses are. Then, they can assess whether these expenses will likely increase or decrease in retirement. When making projections, pre-retirees must include an inflation adjustment or their standard of living will decline over time.

Many respondents would consider an earlier target retirement age if conditions were right. The condition most cited as necessary to do so was increased financial security. Financial security was also the most important factor that influences retirement planning. This corroborates the finding in previous investigations that financial factors were paramount in the retirement decision-making process of faculty members.^{4,7} Other work-related factors deemed to be important to retirement planning were higher-order needs such as the opportunity to participate in work that is meaningful and job satisfaction.¹⁹ Less important factors included loss of status among colleagues and emotional support from the respondent's significant other.

Unlike previous studies which showed that faculty members from private universities retired later than those from public universities, our data did not indicate this relationship.^{7,11} This investigation showed no significant differences between the target retirement ages of public and private school faculty. Although speculative, the great recession of 2008 has resulted in many public faculty pre-retirees delaying their retirement due to financial circumstances, and fear of possible state budget cuts that might impact state retiree and health benefits.

We found that scholarship productivity as measured by scholarly refereed articles was a significant predictor of when a faculty member retires, which supports Kim and Becker's human capital theory, ie, faculty members may postpone retirement so as to receive the pecuniary and non-pecuniary rewards for scholarship productivity.^{9,14}

This investigation was subject to several limitations. The response rate was less than optimal. Despite the efforts given to maximize response rates and the method used to assess nonresponse bias, we cannot be sure that those who did not respond to the survey invitation were not significantly different from those who responded. Also, the research design did not allow for cause and effect testing. Some of the respondents may not have understood the financial terms used in the survey instrument, eg, defined benefit vs. defined contribution plan. In addition, there may have been some confusion over some of the scholarship categories, eg, definition of a scholarly article in a book vs. a scholarly refereed article. If respondents were confused over some of the terms used in the survey instrument, the accuracy of some findings may be suspect. Also, 19 of the original 1,642 members of the sampling

frame were from Kuwait and Puerto Rico and any of those faculty members who participated may have given significantly different responses than those given by respondents from the United States and Canada due to social, cultural, academic, and economic differences between these countries.

There are several avenues for future research including comparing the retirement readiness, perceptions, and salient factors of pharmacy faculty members with those of other professional faculty members. Another avenue would be to survey emeritus faculty members and examine the actual experiences of retired faculty members in colleges and schools of pharmacy.

CONCLUSION

This is the first investigation to examine the work-related activities of faculty members 55 years and older primarily in US and Canadian colleges and schools of pharmacy and how those might relate to retirement decisions. This study also identified faculty members' institutional retirement plan offerings and looked at salient factors that might impact their retirement decision making. Finally, this investigation reported possible predictors and non-predictors of the target retirement age of pharmacy faculty members. This information can be used by administrators for strategic planning related to attracting and retaining quality faculty members.

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