RESEARCH ARTICLE

The Determinants of Nursing Turnover: A Multi-Year Analysis

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Abstract

Using cross section random surveys (2008, 2010, 2012, 2014, and 2016) of 7,000 nurses in California, we examine the influence of nursing demographics and four groups of self-reported determinants of nursing career-choice decisions: FAMILY CONCERNS (childcare, other family concerns, moving, and non-job illness), ECON (salary and benefits), STRESS (job stress, job illness, other job dissatisfaction, nurse job dissatisfaction, and lay off concerns), and OTHER group (travel, another occupation, and school).

For nurses leaving for at least one year of absence and then returning to nursing, the FAMILY CONCERNS were consistently rated most important by nurses, followed by a distant second by the equivalent STRESS and OTHER group influencers. The ECON group rated least important.

The nurses permanently leaving the health care profession, FAMILY CONCERNS were once again rated most important during the first three years of our sample (2008, 2010, 2012), but then faded as STRESS and OTHER factors took over in relative importance.

Keywords: nursing attrition, job stress, job burnout, family concerns, child care

I. Introduction

The nursing workforce is characterized by chronic shortages that only disappear during economic recessions. The shortages occur in large part because nurses of labor force age leave nursing jobs for other occupations or leave the labor force for family reasons. The shortages disappear when the loss of non-health jobs to nurses and/or the loss of income from other household members lead nurses to return to healthcare. The high levels of turnover greatly reduce the efficiency of the nursing labor market and impose significant costs on both employers and the nurses. Nurses who get burned out frequently lose motivation, feel isolated, and find it very difficult to balance the many demanding uses of their time. Besides their own frustrations, burnout at work and unfulfilled tasks at home, nurses often eventually leave their position. This not only disrupts patient care, but nurse turnover is associated with significant costs (e.g. lack of adequate patient care, unfilled vacancies, training and orientations, etc.).[1]

Nurse turnover studies either emphasize the private costs and benefits to health care providers, or to personal factors that incentivize nurses to enter or leave health care. The private cost studies are a much smaller literature that finds the costs of nursing turnover exceeds its benefits,[2-7] but ignore the opportunity costs of turnover to the nurses. The larger, personal incentives literature ignores health care provider's turnover costs/benefits, but places nurse turnover into implicit economic models of home/market production, emphasizing nurses' self-reported turnover intentions. Both strands of the literature need to be integrated to understand the full costs of turnover.

Most analyses of nursing turnover analyze the impact of on-the-job stress on nurses' intent to leave. The job-stress (adverse job working conditions) turnover-literature is relatively large.[4,8-40]

These studies find that increased job stress increases nurses' intent to leave his/her position or the profession, depending upon the implicit measure of turnover.

A few studies consider the effects of economic incentives (*ECON*) on turnover.[10-11,31,39,41-43] Intents to leave typically fall as wages or fringe benefits increase, but the effect is sometimes small and not always statistically significant. Least common are studies that analyze the effect of family considerations on intents to leave.[4,10,17,34,39,41,44] See Hayes et al. (2012) for a partial summary of many of these papers.[45]

This article contributes to the turnover literature in three ways. First, unlike most turnover studies we analyze the correlates of actual turnover rather than intent to leave. Second, turnover is not consistently defined across studies. Sometimes, turnover means temporary leaves or transfers; sometimes it means a permanent departure from the profession. We include nurses with temporary absences, ending in a return to work; nurses with permanent departures (up to sampling date) of less than five years, and nurses with permanent departures of five years or more. Third, while some studies either focus only on socio-demographics or factors like job stress or family considerations, we include the full set of potential influences on turnover in multivariate models.

II. Data and Methods

The California State Board of Nursing Survey (CSBRN) is a repeated cross section of approximately 10,000 registered nurses (RNs) randomly sampled biannually in 2008, 2010, 2012, 2014 and 2016. The response rate is approximately 55-60 percent.[46] Nurses working in nursing and nurses who left nursing but retained active licenses are included.

Nurses report the dates on which they last worked in nursing so the durations of absences are not limited to the survey period. We divide actual departures into temporary absences with an observable return to work and long term absences further divided into absences of less than 5 years and absences of 5 years or more. The five year criterion was selected based on the fact that more than two-thirds of the nurses who returned to work did so in less than five years.

The group of nurses with ongoing absences of less than five years is, therefore, an indeterminate mixture of nurses who will return to work and nurses who will exhibit longer-term absences, including permanent withdrawals from nursing. Nurses with ongoing absences of five years or more are disproportionately more likely to be permanent withdrawals from the nursing workforce.

Nurses in each year ranked the importance of different reasons for their absences using the following scale: 1=not important, 2=somewhat important, 3=important, 4=very important. The ratings were responses to the following questions: nurses who left nursing for at least one year, but returned by the interview date were asked:

> *"How important are each of the following reasons you stopped working as a registered nurse for a period of more than one year?"*

Nurses who left nursing and did not return by the interview date were asked:

"How important were each of the following factors in your decision to leave nursing?"

A review of the nursing turnover literature (some of which is cited in the introduction) suggested the following groups of nurses' concerns. The *FAMILY* group includes *childcare, moving, non-job illness and other family concerns*. The *ECON* group includes the *salaries* and *fringe benefits* that together measure nurses' compensation for working. The *STRESS* group includes non-monetary attributes of the workplace environment, namely *job stress, job illness, other job dissatisfaction, nurse job dissatisfaction*, and *concern over potential layoffs*. The *OTHER* group includes *travel to work, another occupation* and *school*. The sociodemographic characteristics include: nurses' *age, experience, race, gender, marital status*, and *presence of children*.

$$Factor\_rating_{i(j)} = \beta_1 + Groups_{i(j)}\gamma + \beta_2 Sociodemographics_{i(j)} + \varepsilon_{i(j)} \quad (1)$$

The outcome variable "*Factor_rating*" in equation (1) is the importance that the *i*th nurse gives for the *j*th factor listed in Table 1. That is, it is the relative importance of each factor *j* (say a childcare rating of 4) for individual *i* (say by nurse Saundra) is regressed on dummy (1,0) variables for groups such as FAMILY. Hence, γ measures the relative importance of each group relative to the omitted ECON group. If all groups matter equally to all nurses, then $= 0$. The differential size and statistical significance of γ is a measure of its importance. Clustering of standard errors at the individual nurse level adjusts for non-independence of responses for a given nurse, so statistical significance is measured relative to other nurses' responses.

Nurses who are absent but not returned to work are ranked the importance of a set of characteristics that would influence them to return to work. The 1(not important) to 4(very important) ranking is applied to: *childcare, flexible hours, physical demands, higher salary, retirement benefits, management support, other nurse support, nurse to patient ratio, non-nurse support, mentoring program, my health is better.*

The analysis data set is limited to 7,000 RNs who return to work after an absence of one or more years and nurses who left nursing and had not returned at interview. Two sets of results are presented for each group of nurses, namely: the rankings of each reason for leaving nursing and estimated multivariate models that include the reasons for leaving (family, stress etc.) plus nurses' sociodemographic characteristics. The descriptive data provide the specific reasons for leaving nursing but the product of the number of reasons and number of years of data is quite large, so we focus on the four most important reasons in each year. The problem is overcome by the multivariate models that use variables representing groups of related reasons. Thus, the multivariate models, which also include sociodemographic characteristics, provide a more complete but less specific overview of all of the influences on decisions to leave nursing.

Temporary absentees had completed their spells of absence, offering the opportunity to analyze the effects of different characteristics on the durations of their absences. The multivariate duration model summarizes the estimates across years for the sake of brevity, adding dummy variables to measure how the effects differ among years.

Table 1. The Importance of Different Reasons for Leaving Nursing Jobs: Temporary Absences: Nurses Absent for at Least One Year But Returning to Work by Time of Interview

Average Ranking (1=least important,…,4=most important):	2008 means	2010 Means	2012 Means	2014 Means	2016 Means
Childcare	**3.49**	**3.55**	**3.57**	**2.85**	**2.65**
Other family concerns	**3.13**	**3.24**	**3.32**	**2.41**	**2.40**
Moving	**2.93**	**3.00**	**2.88**	**2.09**	**1.97**
Job stress	**2.77**	**2.64**	**2.53**	**1.66**	**1.72**
Job illness	2.32	2.04	2.00	1.35	1.35
Non-job illness	2.47	2.09	2.02	1.39	1.45
Salary	2.40	2.11	2.04	1.34	1.47
Benefits	2.02	1.73	1.74	1.21	1.25
Other job dissatisfaction	2.47	2.44	2.36	1.51	1.42
Nurse job dissatisfaction	2.50	2.22	2.18	1.48	1.45
Travel	2.24	2.12	2.08	1.43	1.32
Another occupation	2.64	2.55	2.52	1.55	1.51
School	2.53	2.49	2.23	1.47	1.43
Concerns over Potential Layoffs	2.03	1.82	1.98	1.24	1.20

Notes: Source—CBRN Survey, mean value of importance of reasons for leaving nursing jobs. Bold numbers are the three most important reasons in each year. **Bold numbers** represent the 4 most important reasons.

III. Results

Temporary Absences: Absent for at Least One Year, then Returning

Descriptive Data

Nurses' rankings of the importance of the reasons for leaving nursing jobs are described in Table 1. As noted, the reasons are ranked by importance from 1 *(least important)* to 4 *(most important)*. Many reasons ranked quite closely to one another over time but to simplify our discussion, we focus on the four most highly ranked reasons in each survey year.

The same four reasons are ranked as most important, relative to all other reasons, in the years 2008 through 2014. The reasons are*: childcare, other family concerns, moving and job stress. Moving* suggests that a nurse moved to a different location and returned to a different nursing job after the move was completed. Because nursing is mostly a female profession, temporary absences due to childcare or caring for another adult are more likely than among male nurses. *Job Stress*, however, is often cited as a reason for intent to leave a nursing job and, as we will discuss, it is also a pervasive feature of long term absences.

Multivariate Estimates

The results of multivariate equation (1), where the *j*th factor importance score of individual *i* is regressed on the grouped reasons (Family, Stress etc.) and nurses' socio-demographics are described in Table 2. Being Non-Hispanic White is the only socio-demographic characteristic that is significant in multiple years (except 2016). Non-Hispanic whites are less likely to temporarily leave nursing than other ethnic groups. The only other significant demographic characteristics is being Hispanic, which has a positive effect in the year 2012.

The effects of the grouped reasons are measured relative to the omitted group (*ECON*). In 2008, for example, *FAMILY* response is nearly a full point higher (.944) than an *ECON* response. Indeed, salaries and benefits are less important than any of the other reasons for leaving nursing jobs.

Table 2. Temporary Absences: Importance tests holding Nurses socio-demographic characteristics constant: Dependent variables are a Figure 1 factor-ranking j for individual RN i, *F(i.j)*

Variables	2008	2010	2012	2014	2016
Intercept	2.663***	1.827***	2.324***	1.322***	1.606***
FAMILY CONCERNS	0.944***	1.213***	1.220***	0.919***	0.761***
STRESS	0.288***	0.375***	0.332***	0.174***	0.071*
OTHER	0.327***	0.461***	0.367***	0.210***	0.081*
female	0.142	0.095	0.196	0.061	0.033
married	0.096	0.227	0.225*	0.040	0.011
never married	-0.038	0.359**	0.214	0.107	0.088
age	-0.004	0.002	-0.009	0.000	-0.002
child YN	-0.090	0.177*	-0.118	-0.028	-0.068
black	-0.065	0.232	-0.002	-0.089	-0.060
Hispanic	-0.164	-0.129	0.612**	-0.177	NA
Non-Hispanic white	-0.365***	-0.362***	-0.235*	-0.135**	-0.085
Observations (#Clusters)	3164 (631)	3497 (690)	2990 (594)	5998 (508)	5334 (381)
Categorical Importance	67.72***	107.17***	102.39***	172.49***	96.40***
Same Response	87.30***	118.02***	115.04***	167.77***	106.39***
ECON=OTHER	20.67***	45.01***	28.03***	37.98***	3.90

Notes: All tests (t-tests, and joint tests) were made with clustered errors (for each individual nurse), OLS regressions with robust standard errors yielded roughly the same result. Statistical significance levels: ***=significant at the 1 percent level; **=significant at the 5 percent level; *=significant at the 10 percent level. Dummy variables (0,1) for the "grouping" variables are defined as follows: FAMILY=1 in the regression if for individual *i* it is factor rating *j* pertaining to childcare, other family concerns, moving, or non-job illness; STRESS=1 if the (*i*,*j*) response factor is job stress, job illness, other job dissatisfaction, nurse job dissatisfaction, or laid off; ECON=1 if the (*i*,*j*) response factor is salary, or benefits; OTHER=1 if the (*i*,*j*) response factor is travel; another occupation, or school. The joint-test statistics in the last three rows are described in the statistical appendix.

Determinants of Absence Durations

The results of regressing the duration of absences and log-duration of absences on the means of each response group are described in Table 3. We pool the data across the years for brevity, adding dummy variables for year specific effects and converting group ratings to mean values. The mean for the FAMILY factor rating is calculated, for example, by summing the rankings (1-4) for *childcare*, *other family concerns*, *moving*, or *non-job illness* for each nurse and dividing by four. Since we include the means of the groups, rather than dummy (1,0) variables, we can include the *ECON* variable in our analysis.

A year coefficient represents the difference between the average duration of absences in a year and the average duration in the 2016 baseline year, all else equal. Comparisons of the year coefficients show that absences were longer than in 2016 by as much as 74 percent in 2008, 2010, and 2012. In 2014, absences were 25 percent shorter. The effects of the grouped variables (FAMILY, OTHER, STRESS, ECON) are statistically significant, with responses statistically different from each other. The effects of the grouped variables are also relatively large. A unit increase in the *FAMILY* or *OTHER* variables lengthens absences by 6.2 percent or 7.4 percent, respectively. A unit increase in the *STRESS* variable, on the other hand, decreases duration almost by 7.8 percent. The influence of the *ECON* group is not statistically significant.

Table 3. Temporary Absences: Influences on Durations of Absences

	Duration		Log(Duration)	
Variables	Coeff	t-statistics	Coeff	t-statistics
Intercept	-1.650	-1.97**	-0.035	-0.23
FAMILY CONCERNS	0.322	2.18**	0.062	2.30**
STRESS	-0.406	-2.40**	-0.078	-2.59***
OTHER	0.402	2.34**	0.074	2.63***
ECON	-0.192	-1.47	-0.028	-1.31
female	0.409	1.13	0.114	1.61
married	-0.332	-1.12	-0.071	-1.43
never married	-0.747	1.85*	-0.195	-2.57**
age	0.101	9.63***	0.018	9.80***
child present (1,0)	-0.382	1.74*	-0.095	-2.43**
Black	-0.530	1.17	-0.039	-0.43
Hispanic	-0.716	1.22	-0.081	-0.69
Non-Hispanic white	-0.015	0.05	0.035	0.62
yr2008	0.738	1.42	0.104	0.98
yr2010	0.655	1.14	0.105	0.92
yr2012	0.792	1.35	0.119	1.03
yr2014	-0.245	0.50	-0.052	-0.53
R-square	0.0863		0.1041	
Number of observations	1706		1683	
groups, joint	15.68***		18.46***	
Same group Responses	14.82***		18.04***	
FAMILY=OTHER	0.09		0.07	
STRESS=ECON	0.77		1.24	

Notes: All specifications contained year fixed effects as indicated, with robust standard errors reported throughout (and for joint chi-square tests in the last three lines). Statistical significance levels: ***=significant at the 1 percent level; **= 5 percent level; *= the 10 percent level. The joint-test statistics in the last four rows are described in the statistical appendix.

It is important to remember that the groups represent reasons for leaving. Thus, estimated durations are shorter for persons who cited stress as an important reason for leaving, while persons who cited family reasons have relatively longer absences. This does not imply that increased levels of stress shorten absences, but rather that family obligations and childcare were likely to require longer absences than relief from job related stress, which would stop the moment a nurse left a nursing job.

The socio-demographic estimates are more direct measures of the effect of a characteristic than the variables representing reasons for leaving. Absences are shorter by almost 20 percent for *never married* nurses (the -.195 coefficient in the log-duration model), reflecting the fact that single persons cannot rely on the earnings of a spouse. Each year of *age* lengthens absences by 1.8 percent. The presence of children in a nurse's household is estimated to decrease time off from nursing by 9.5 percent but this apparently counterintuitive result is likely caused by the correlation between the *presence of a child* variable and the *childcare* component of the FAMILY group.

B. Long Term Absences

Descriptive Data

The descriptive data for nurses with ongoing absences of less than 5 years are described in Table 4a. Results for nurses with five or more years of absences are described in Table 4b. The group with less than five year absences but without a return to work, includes nurses who will return to work and nurses who have permanently withdrawn from nursing but the relative size of the two sets of nurses is

unknown. Since the likelihood of returns to work is very low after five or more years of absence, we assume that nurses who have permanently withdrawn from nursing account for a large share of the nurses absent for five or more years.

Table 4a. The Importance of Reasons for Leaving Nursing Jobs: Long Term Absences: Nurses absent for less than five years without return

Average Rating (1=least,…,4=most):	2008 means	2010 Means	2012 Means	2014 Means	2016 Means
Childcare	**3.16**	2.56	2.20	1.36	1.30
Other family concerns	2.56	**2.88**	**2.62**	**1.65**	**1.58**
Moving	**2.87**	2.55	2.42	1.45	1.39
Job stress	2.38	**3.07**	**2.98**	**2.08**	**2.09**
Job illness	**3.13**	2.52	2.25	1.46	1.31
Non-job illness	2.78	**2.69**	**2.48**	1.47	1.49
Salary	**2.85**	2.14	2.31	1.51	**1.57**
Benefits	2.25	1.98	2.10	1.39	1.37
Other job dissatisfaction	2.16	**2.80**	**2.76**	**1.86**	**1.82**
Nurse job dissatisfaction	2.47	2.18	2.37	**1.60**	1.52
Travel	2.26	2.07	2.12	1.38	1.38
Another occupation	2.16	2.17	2.06	1.28	1.27
School	2.84	NA	1.84	1.17	1.18
Concern with Layoffs	1.99	2.55	2.34	1.29	1.21

Notes: Source—CBRN Nursing Survey. . Statistical significance levels: ***=significant at the 1 percent level; **= the 5 percent level; *= the 10 percent level mean value of importance. **Bold numbers** represent the 4 most important reasons.

Table 4b. The Importance of Reasons for Leaving Nursing Jobs: Long Term Absences: Nurses absent for five or more years without return

Average Rating (1=least,…,4=most):	2008 means	2010 Means	2012 Means	2014 Means	2016 Means
Childcare	**2.73**	**2.94**	**2.59**	**1.60**	1.54
Other family concerns	**3.04**	**2.93**	**2.81**	**1.77**	**1.80**
Moving	**3.01**	2.48	2.00	1.25	1.42
Job stress	2.68	**2.69**	**2.65**	**1.82**	**1.93**
Job illness	**2.89**	2.19	2.32	1.38	1.38
Non-job illness	2.22	2.38	2.39	1.41	1.43
Salary	2.38	2.16	2.27	1.47	1.53
Benefits	2.34	1.77	2.08	1.29	1.36
Other job dissatisfaction	2.59	**2.57**	2.53	1.57	**1.75**
Nurse job dissatisfaction	2.54	2.11	2.34	1.46	**1.59**
Travel	2.26	1.89	1.98	1.24	1.38
Another occupation	2.01	2.51	**2.54**	**1.62**	1.56
School	2.69	NA	1.93	1.23	1.20
Concern with Layoffs	1.84	1.64	1.35	1.07	1.09

Notes: Source—CBRN Nursing Survey. **Bold numbers** represent the 4 most important reasons.

In every year, the four most important reasons for departures among temporary absentees are *Childcare, Other family concerns, job stress* and m*oving.* There is more variation in the four most important reasons among the less than five year absentees namely: *Other family concerns* and *job stress* (except 2008*); Other job dissatisfaction* (except 2008), *Non-job illness*

(2010,2012), *Nurse job satisfaction* (2014) *Childcare* (2008), and *job illness* (2008).

The four most important reasons cited by nurses with five or more years of ongoing absences are: *Other family concerns (all years)*, C*hildcare* (except 2016), J*ob stress* (except 2008), *Other job dissatisfaction* (2010, 2016), *Another occupation* (2012, 2014) *Nurse job dissatisfaction* (2016).

In summary, *Other family concerns* and *job stress* are the most pervasive reasons for leaving nursing jobs among the three different types of absentees. There are considerable differences in the other important reasons among the three types of absentees.

Multivariate Results

The multivariate results for the two groups of long term absentees differ from both the temporary results (Table 2) and between themselves.(Tables 5a &5b) The temporary results show three groups as significant and positive in each year, namely: FAMILY, STRESS and OTHER, although the latter two are significant only at the10% level.

Among nurses with less than five year absences, not one of the three groups is significant in every year and the size effects of the significant variables vary widely (Table 5a). STRESS is significant and positive in all years except 2008; FAMILY is significant and positive in 2008-2012 but insignificant in remaining years. OTHER is significant and negative only in 2008-2010. *Age*, which was not a significant influence among temporary absentees was significant and negative in all years but 2008.

The longer term absentee results are somewhat more consistent with the temporary absentee estimates than with the less than 5-year absentees, with consistently positive, significant estimates in all years for FAMILY and STRESS. The similarities end there, however, since OTHER is only significant in 2016 and the results for *Age* are similar to the less than 5-year absentees. The other differences include two years in which *Black* is significant and negative and *Hispanic* is significant and positive in two different years.

Table 5a. The Importance of Reasons for Leaving Nursing Jobs: Long Term Absences: Nurses absent for less than five years without return holding socio-demographic characteristics constant

Variables	2008	2010	2012	2014	2016
Intercept	2.670***	2.899***	3.640***	2.566***	2.408***
FAMILY CONCERNS	0.410***	0.600***	0.228**	0.029	-0.030
STRESS	0.031	0.622***	0.371***	0.206***	0.118***
OTHER	-0.025	0.058	-0.219**	-0.173***	-0.197***
female	0.445**	-0.113	0.013	-0.011	-0.061
married	0.087	-0.096	0.103	0.128**	0.018
never married	0.176	0.055	-0.067	-0.076	-0.079
Age	0.001	-0.006*	-0.017***	-0.013***	-0.013***
Child present (1,0)	-0.253**	0.114	-0.067	-0.112**	-0.031
Black	0.003	-0.192	0.223	-0.157	-0.077
Hispanic	0.521**	-0.255	-0.015	0.002	0.070
Non-Hispanic white	-0.315**	-0.450***	-0.512***	-0.161**	-0.050
Observ (#Clusters)	2020(330)	2344(479)	1950(425)	6678(501)	5334(397)
Categorical Import	20.65***	86.35***	45.03***	75.25***	28.38***
Same Response	25.75***	45.05***	50.79***	101.19***	68.59***
ECON=OTHER	1.22	86.51***	54.87***	95.07***	66.22***

Notes: Dependent variables are factor-ranking j for individual RN i, *F(i.j),* All tests (t-tests, and joint tests) were made with clustered errors (for each individual nurse), Statistical significance levels: ***=significant at the 1 percent level; **=the 5 percent level; *= the 10 percent level. The joint-test statistics in the last three rows are described in the statistical appendix.

Table 5b. The Importance of Reasons for Leaving Nursing Jobs: Long Term Absences: Nurses absent for less five years or more without return, holding socio-demographic characteristics constant

Variables	2008	2010	2012	2014	2016
Intercept	2.108***	3.434***	2.050***	2.138***	2.641***
FAMILY CONCERNS	0.451***	0.754***	0.321***	0.129***	0.089*
STRESS	0.163**	0.400***	0.204***	0.069*	0.102**
OTHER	0.004	0.247***	0.040	-0.014	-0.072
Female	-0.115	0.057	0.330	0.116	0.044
Married	0.038	0.047	-0.129	-0.015	0.124*
Never married	0.025	-0.160	0.049	0.097	-0.068
Age	0.002	-0.018***	-0.001	-0.012***	-0.018***
Child Present	0.112	-0.049	0.249*	0.006	-0.004
Black	-0.318	-0.633*	-0.203	-0.206*	-0.347**
Hispanic	0.724***	-0.339	0.998***	-0.054	0.039
Non-Hispanic white	0.049	-0.422***	-0.209	-0.142&=*	-0.095
Observations (#Clusters)	2181(361)	2164(411)	1695(362)	5058(378)	3528(252)
Categorical Importance	27.66***	53.34***	13.73***	12.79***	14.93***
Same Response	24.38***	31.07***	7.60**	10.85***	14.35***
ECON=OTHER	11.50***	26.22***	10.12***	6.08**	14.32***

Notes: Dependent variables are factor-ranking j for individual RN i, *F(i.j).*All tests (t-tests, and joint tests) were made with clustered errors (for each individual nurse). Statistical significance levels: ***=significant at the 1 percent level; **= the 5 percent level; *= t the 10 percent level.

These patterns are consistent with an increasingly important response associated with the omitted baseline grouping, *ECON*—against which all these other groupings are measured. *ECON* factors (salary and wages) are a much more important reason for long term absences than for temporary absences. Simply put, *ECON* and *STRESS* are much more important reasons for long term absences than *FAMILY* or *OTHER* influences, which were relatively more important in Tables 1 through 3 for the temporary absentees.

Return to Work?

The relative and increasing importance of the ECON and STRESS groups for long term absences is confirmed by nurses' rankings of characteristics that would encourage them to return to work, again on a 1 (least important) to 4 (most important) scale. (Tables 6a&b) These year-by-year responses confirm our analysis of the relative importance of *STRESS* and *ECON* factors in Tables 5a &5b. Though the factors given in Tables 6a&6b do not match all those given in Table 1, note the relatively lower valued response *childcare* support and *my health is better*, and the very high—and consistent demand for job- associated support—for *flexible hours* (the highest valued factor in every year), *management support*, *nurse to patient ratio*, *non-nurse support*, and *mentoring program*.

In summary, the factors influencing permanent absences suggest different motivations among long term absentees than among nurses who returned to work. FAMILY was once again rated most important during the first three years of our sample (2008, 2010, 2012), but then faded as STRESS and OTHER factors took over in relative importance in 2014 and 2016. The changes that would be most influential in getting nurses to return to work were flexible hours, non-nurse support, mentoring programs, and management support, listed ahead of higher salaries and retirement benefits in importance.

Table 6a. Nurses that Quit: What Would Get Them Back— LESS THAN 5 YEARS sample

Average Rating (1=least,…,4=most):	2008 means	2010 Means	2012 Means	2014 Means	2016 Means
Child care	1.50	1.83	1.67	1.22	1.23
Flexible hours	**3.30**	**3.48**	**3.37**	**2.84**	**3.13**
Physical demand	2.78	3.07	2.98	2.45	2.33
Higher salary	2.89	2.79	2.58	2.16	2.66
Retirement benefits	2.79	2.93	2.74	2.09	2.49
Management support	**3.11**	**3.51**	**3.32**	**2.69**	**3.31**
Other nurse support	2.84	3.05	**3.20**	2.45	2.78
Nurse to patient ratio	**3.06**	**3.37**	**3.20**	**2.78**	**3.05**
Non-nurse support	**3.20**	**3.39**	**3.36**	**2.76**	**3.23**
Mentoring program	2.94	3.12	3.00	2.54	2.52
My health is better	2.86	3.06	3.02	2.03	2.16

Notes: Source—BRN Nursing Survey, mean value of importance of characteristics that would influence nurses return to the nursing profession. Original scale: 1 (least important) to 4 (most important).

Table 6b. Nurses that Quit: What Would Get Them Back— 5 YEARS OR MORE sample

Average Rating (1=least,…,4=most):	2008 means	2010 Means	2012 Means	2014 Means	2016 Means
Child care	1.59	1.75	1.71	1.19	1.13
Flexible hours	**3.37**	**3.50**	**3.42**	**3.13**	**3.03**
Physical demand	2.90	2.79	2.99	2.30	2.32
Higher salary	2.98	2.91	2.86	2.33	2.35
Retirement benefits	2.96	2.83	2.72	2.22	2.23
Management support	3.19	3.24	3.21	2.51	2.82
Other nurse support	3.04	3.06	3.01	2.36	2.85
Nurse to patient ratio	**3.27**	**3.39**	**3.45**	2.64	2.95
Non-nurse support	3.22	3.38	3.27	**2.69**	**3.02**
Mentoring program	**3.40**	**3.55**	**3.54**	**3.05**	**3.07**
My health is better	2.77	2.67	2.88	1.87	1.72

Notes: Source—BRN Nursing Survey, mean value of importance of various sociodemographic and economic variables that would influence nurses return to the nursing profession. Original scale: 1 (least important) to 4 (most important).

IV. Discussion

Our results clearly indicate the that nurses temporarily absent from nursing and perhaps anticipating a return (from recent moves, childcare, or family illness) place very different weights on job factors (*ECON*, *STRESS*) over non-work, family factors (*FAMILY*, *OTHER*) than nurses with long term absences. Family factors predominate for the temporary absentees while STRESS and wages are more important for long term absences.

This differential response between temporary absentees and nurses with long term absences complicates turnover analysis. First, strategies designed to reduce attrition, burnout and turnover should target the problems rated most highly by the nurses and the problems appear to be different in several ways. Strategies need to select from among the important problems, those most easily corrected. In most occupations, increases in wages and fringe benefits are effective means of employee retention. Yet, salary and benefits are typically ranked more much less important than many other influences by both the temporary and long term absentees. The size effects for the long term

absentees suggest, however, that the influence of economic incentives increased over the survey years. The reason for these changes may be found in the fact that the survey data include the recession years of 2007-2009.

Nursing is changing but remains primarily a female occupation and many female nurses are second earners in their households. They are also the family member most likely to be responsible for child care, the care of elderly parents and other dependent household members. These characteristics are reflected in the predominance of *childcare* and/or *other family concerns* among the 4 most important of reasons for departures for all three groups of nurses in most or all of the five survey years.

Employers may have relatively little leverage in offsetting the family related issues that occur outside the workplace and so must focus on workplace characteristics. The single most important reason for job departures that relate to the workplace is *job stress*

Second, coming back to social costs of nursing turnover discussed briefly at the beginning of the paper, how do we weight the externalities in our turnover social cost calculus: do we give more weight to the FAMILY/OTHER factors associated with nurses who are temporarily away from nursing, or do we give more weight to the STRESS/ECON factors associated with nurses who permanently quit the profession? The choice of the nurse-sample we pose these tradeoffs to will skew our answers in different directions.

While there are numerous studies of intent to leave as a function of job-related factors (particularly job stress), and many less on the role of family and pecuniary job benefits, there is still a relative shortage of studies of the consequences of nurse turnover for patient care. The consequences of interrupted nursing services on patient outcomes is perhaps the most important future agenda for these nursing studies. Even so, future studies should consider sample frameworks in which the relative importance of *FAMILY* be given at least equal weight to *STRESS* (including the 'job stress' subcategory).

Nurses who are burned out in their jobs either because they feel like their employer puts too little weight on their family concerns, or pays little attention to job stress, may exhibit a variety of dysfunctional responses including not getting along with other nurses, poor or incomplete communications with patients, or other, uncharacteristic negative behaviors. Hopefully, the concerns expressed by these samples of nurses who left nursing will provide the relative weights for future human resource planners to help minimize these significant costs of nurse turnover.

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Statistical Appendix

Joint tests in Table 2.

The first joint test statistic for the group importance tests of Table 2 tests whether all groups matter equally (test of "same importance")—a result soundly rejected by the data (i.e., the chi-square value of 67.72 is highly unlikely if the coefficients were, in fact, truly zero). The next test is whether the *FAMILY* coefficient=*STRESS* coefficient=*OTHER* coefficient (listed as the "Same Response" test). Again, this test for homogeneity of response is rejected: the FAMILY, STRESS, and OTHER groupings are estimated to be of relatively different importance to nurses. Indeed, since *FAMILY* is so much larger than the other coefficients, we offer another, more restrictive test: namely, that the *STRESS* coefficient equals the *OTHER* coefficient. This hypothesis is again rejected (statistically, 0.288 is different from .327). Nurses experiencing a temporary stoppage report that *FAMILY* matters most and *ECON* (benefits and wages) matters least. *STRESS* is in the middle for this sample of nurses who left for at least a year from the nursing profession, and then returned.

Joint tests in Table 3.

The joint test for significance in the fourth line up from the bottom indicates that these effects are jointly significant; the third line up indicates that they had different coefficients. That difference that drives the "same group responses" significance resides principally in the *FAMILY/OTHER* vs *STRESS/ECON* difference. When we test *FAMILY* coefficient=*OTHER* coefficient (second line up) we find that they are not statistically different; and the *STRESS* coefficient=*ECON* coefficient difference, also statistically insignificant.

Table 6—without division by years out of RN work. Nurses that Quit: What Would Get Them Back (whole sample) (Tables 6a and 6b are subsets of this table)

Average Rating (1=least,…,4=most):	2008 means	2010 Means	2012 Means	2014 Means	2016 Means
Child care	1.59	1.80	1.68	1.21	1.18
Flexible hours	**3.33**	**3.49**	**3.39**	**2.99**	**3.05**
Physical demand	2.83	2.90	2.96	2.32	2.33
Higher salary	2.93	2.86	2.77	2.27	2.46
Retirement benefits	2.88	2.88	2.74	2.16	2.33
Management support	3.15	3.36	3.25	2.54	**3.03**
Other nurse support	2.95	3.07	3.09	2.36	2.78
Nurse to patient ratio	3.18	**3.39**	**3.32**	2.63	2.94
Non-nurse support	**3.23**	3.38	**3.30**	**2.69**	**3.09**
Mentoring program	**3.20**	**3.40**	**3.32**	**2.84**	2.75
My health is better	2.81	2.91	2.95	1.93	1.96

Notes: Source—BRN Nursing Survey, mean value of importance of various sociodemographic and economic variables that would influence nurses return to the nursing profession. Original scale: 1 (least important) to 4 (most important reasons).

