International Journal of Medical Sciences
2010; 7(3):160-168

Research Paper

CEO- CNE Relationships: Building an Evidence-Base of Chief Nursing Executive Replacement Costs

Darlene Sredl [1] ✉, Niang-Huei Peng [2]

1. Associate Teaching Professor of Nursing, University of Missouri @ St. Louis, St. Louis, MO 63005, USA
2. Assistant Professor of Nursing, Central Taiwan University of Science and Technology, Taichung City 40601, Taiwan (R.O.C.)

✉ Corresponding author: Darlene Sredl, Ph.D., R.N., University of Missouri @ St. Louis, #206- One University Blvd., St. Louis, MO 63005, U.S.A. 314-516-7060; 636-391-9277; sredld@umsl.edu

Received: 2009.08.26; Accepted: 2010.05.26; Published: 2010.06.03

Abstract

OBJECTIVE: Explore professional relationships between Chief Nurse Executives (CNEs) and Chief Executive Officers (CEOs); CNE ethnic diversity; and CNE replacement costs.

BACKGROUND: Theoretical frameworks - Marilyn Ray's Theory of Bureaucratic Caring, and Turkel's Theory of Relational Complexity espousing *economic* as well as caring variables.

METHODS: Exploratory mixed-method descriptive design using CNE mailed survey.

RESULTS: CNE- cited opportunities for maintaining a positive relationship with the CEO: respect for CEO; goal- sharing ($r=.782$, $p<0.01$); having a strong relationship ($r= .718$, $p<0.01$); co-problem-solving ($r=.437$, $p<0.01$); having an interesting job ($r=.406$, $p<0.01$); having similar interests with CEO ($r= .346$, $p<0.01$); CEO and CNE maintaining specific roles ($r= .261$, $p<0.05$); satisfaction with CNE income ($r=.251$, $p<0.05$); willingness to improve relationship with CEO ($r=.254$, $p<0.05$). CNE positions demonstrated an ethnic diversity factor of 0.03%. CNE replacement costs to healthcare facilities were over 1.5 million dollars.

CONCLUSION: CNE/CEO relationships have identified cohesive factors that may contribute to CNE longevity in position; an ethically diverse CNE deficit exists; and, CNE turnover and vacancy rates impact an organization's financial health and quality of care.

Key words: Chief Executive Officer, Chief Nurse Executive, Nurse, replacement costs

PART I: CEO/CNE Relationships

Introduction

Borrowing a phrase from this study's findings, *relationships matter*, whether the caring relationship is between Chief Nurse Executives (CNE) and patients as studied by Turkel & Ray (1), or between CNEs and their superior, the Chief Executive Officer (CEO) of a healthcare organization, as examined in this study. (CNO and CNE are used interchangeablely since some references use Chief Nursing Officer (CNO) as a position title.)

Theoretical framework

Theoretical frameworks underpinning this study include Marilyn Ray's Theory of Bureaucratic Caring, later augmented by Turkel in the development of the Theory of Relational Complexity [1, 2]. This theory holds that the caring relationship is a self-organizing dynamic process involving caring *and* economic variables [1]. Turkel interviewed 28 participants in her grounded-theory research, who were asked to describe nurse-patient interactions and estimated costs

[2]. The word "cost" evoked negative responses, while the word "caring" evoked positive responses [1]. While nursing executives appreciate the importance of caring in the nurse-patient relationship, there is a literature gap exploring caring relationships between a CNE and the CNE's supervisor, usually the Chief Executive Officer (CEO).

Purpose

The tri-fold purpose of this article is to explore: professional relationships between CNEs and CEOs; ethnic diversity at the CNE level; and the financial impact of replacing a CNE. Although staff nurse and Advance Practice Nurse (APN) turnover and associated turnover costs have been subjects of concern in the literature, little has been published regarding turnover costs involving Chief Nursing Executives (CNE). This article explores pilot study results among Chief Nurse Executives in the United States' free enterprise system of healthcare. The authors plan to replicate this study among Directors and Deputy Directors of nursing in Great Britain's Socialist system of healthcare and among the professional equivalent of Chief Nursing Executives in Taiwan (R.O.C.) within their formalized system of healthcare.

Research Questions

The three research questions are: (1) does the relationship between the Chief Executive Officer (CEO) and the Chief Nursing Executive (CNE) make any difference in CNE position retention/longevity? (2) Are ethnically diverse (non-Caucasian) nurses likely to be hired into and succeed to the CNE position; and, what is the CNE replacement cost?

LITERATURE REVIEW

CINAHL searched key wording, 'Nurse Administrator' and yielded 3525 citations. The search narrowed to 54 citations when combined with 'Personnel Turnover'. Further limited by the words, 'Personnel Turnover Administration', the list narrowed to two while limiting to year '2000' forward yielded no articles. Changing databases to Medline (1996-2006) yielded no citations for nursing but provided 786 for 'Chief Executive Officers Hospital'. A further search with keywords 'Organizational Culture' in Medline yielded 5348 citations. When this number was limited by 'Personnel Turnover' and 'Chief Executive Officers, Hospital' the search narrowed to three citations.

BACKGROUND

It is often the case that a Chief Nursing Executive loses her/his position when a Chief Executive Officer (CEO) loses her/his position and the new CEO chooses a new management team. So, we begin this discussion looking at trends among CEO length of position longevity as it relates to CNE length of position longevity. According to Kippenbrock and May's five year CNO turnover study, average annual CNE turnover was 21.6% [3]. An earlier qualitative study by Weaver among fourteen former nurse executives found that disagreement with a hospital's CEO was the major cause of their position loss [3].

Medical surgical nurse replacement costs of $92,442 and specialty-area (APN) nurse replacement costs of $145,000, begs the question, what is the replacement cost of a Chief Nurse Executive (CNE)? This study identifies relationship factors between CEOs and CNEs *as perceived significant by CNEs*. It also explores ethnic diversity among CNEs; and direct, indirect, and intangible costs associated with turnover at the CNE level.

CEO Turnover

Information on Chief Executive Officer turn-over was analyzed first to see if barriers to their retention were similar to those cited by Chief Nurse Executives [6]. The American College of Healthcare Executives (ACHE) working with American Hospital Association (AHA) data, announced that 17% of all CEO positions changed in 2001 as well as in the five-year span previously studied [7]. Some geographic regions experienced higher-than-average rates of CEO turnover, notably the District of Columbia (54%) and the Southwestern states of Arizona, Nevada, and New Mexico with 31% each. While national CEO turnover rates dropped to 14% in 2002 and 2003, they rose to 16% in 2004 [7, 8]. Reasons cited by CEOs for staying in position include *a good relationship* with the hospital board and *healthy economic performance* [2]. Mergers were frequently cited as a reason for executive turnover as well as executives lacking understanding of the organization's mission, objectives and culture [6].

CNE turnover

A study by del Bueno tracked nurse executives' employment changes among a group of Johnson & Johnson Wharton Fellows (N= 341). The Johnson & Johnson Wharton Fellows program is a significant accomplishment for a nurse executive because inclusion criteria includes: recommendation by CEO to whom the nurse executive reports, and includes CNE representation of acute-care teaching institutions with a minimum 300-bed census capacity [9]. Post-fellows were included for nine previous years. The general impression was of constant employment change, citing 184 nurse executive changes among the 341 study participants [9]. Another study undertaken by del

Bueno determined if this employment turnover pattern was typical of non-fellow nurse executives in similar facilities [9]. In that study, a purposive sample of nurse executives, representing hospitals from all regions in the U.S.A. with demographics similar to the fellows in the previous study (N=40), revealed that fellows made slightly more changes in position than non-fellows (38% compared to 36%) [9].

One year earlier, the American Organization of Nurse Executives (AONE) reported a nurse executive turnover study (N=1134) that found 35% of the respondents reported position changes averaging once every four years [3]. This data is particularly significant because *fourteen percent of those surveyed in the AONE study reported forced termination* [10].

CNE Forced Termination

Forced termination of key nurse executives can have more than personal economic setbacks. Healthcare financial instability caused by such major change in management is enormous and initiates placing the facility in crisis mode. Kippenbrock and May feel that hospitals least likely to survive into the 21st century are also the hospitals whose CNOs/CNEs are most likely to leave [3].

Nurse executive retention depends upon the nurse executive and the CEO to whom the CNE reports. CEOs retention includes maintaining a good relationship with the hospital board and healthy economic performance; therefore if the CNE does not maintain a good relationship with the CEO, this might lead to either voluntary or forced resignation.

Demonstrating a healthy economic performance by the department of nursing is difficult since nursing has traditionally been considered a cost center, not a revenue-producing center [4]. During economic slowdowns administration may forget that nursing is the only department operating 24/7- 365 days a year. Favorable patient survey opinions ensure the facility's continued economic success. However, administration may see the department of nursing as comprising the largest block of personnel costs within the facility instead [11].

METHODOLOGY

Research Design

This study is an exploratory mixed-method descriptive pilot study that used a mailed survey entitled "CEO-CNO Relationships" by R.A. Prehn. The survey requested CNE opinion information on such topics as: did CNE feel that CNE and CEO shared common goals; understand each of their unique roles; schedule weekly problem solving time; have mutual respect; and other qualifiers. (See Table 2) Quantitative statistical analysis correlated variables within the Chief Executive Officer's and the Chief Nurse Executive's working relationship; while qualitative assessments of financial burden imposed on the hospital by loss of the Chief Nurse Executive was also presented utilizing accounting categories formerly used in Melbin and Taub's original study (1966) as well as economic measures used in contemporary employment searches. Ethnic diversity was tracked using the U.S. government's Census Ethnic categories (6 in number: White; American Indian/Alaskan Native; Asian; Hawaiian/Other Pacific Islander; 2 or more races.)

Sample/sample size with rationale

A list of Hospital Chief Nurse Executives was purchased from the American Hospital Association (AHA). One thousand randomly selected subjects were drawn from an initial sampling frame of 3500 Chief Nurse Executives employed at American hospitals who were Association members. Systematic random sampling was done by choosing one of every three names obtained (from a random start point) for a total mailing of 780 yielding an 11.8% return.

Measures/Instruments

The instrument, "CEO-CNO Relationships," was purchased from HaPI (Health and Psychosocial Instruments) for quantitative analysis. Purchase from HaPI ensures that permission for use is acquired. Demographic and financial qualitative data was also included on the questionnaire.

Procedure

An IRB exemption was obtained from the sponsoring institution, a Midwestern university. A cover letter accompanied each questionnaire packet that was sent by mail and the confidentiality of replies was strictly maintained. Information was collected and analyzed in aggregate and the data was destroyed after computer entry. Only the PI, statistician, and GRA had access to the data. Due to lack of identification with the subject base, no thank you letters were sent.

Data Analysis

Data was computer-entered by a Graduate Research Assistant (GRA) and double-checked by the Principal Investigator (PI). The project statistician performed summary and correlational statistics on the data via Pearson's Product Moment in order to examine the strength of relationship existing between CEO and CNE relationships and the identified relationship variables. (See Table 2)

Strengths and Limitations of Study

One study limitation concerns the response rate. National averages on returns from mailed questionnaires indicate only a 3% return. Utilizing formatting techniques recommended by Salant and Dillman, the response rate was reasonably expected to increase to 20% but returned at 11.82% [12].

A strength of this study was the Chief Nurse Executive subject base that exacted an insider's look at some of the working relationship facilitators and barriers that occur between a Chief Executive Officer and a Chief Nursing Executive.

Another strength was the identification of ethnic diversity among the CNE sample base with ethnic diversity tracked using the U.S. government's Census Ethnic categories (6 in number: White; American Indian/Alaskan Native; Asian; Hawaiian/Other Pacific Islander; 2 or more races); and still another, concerned financial responses related to what actively practicing CNEs considered viable financial input that should be included into the cost calculation of hospital-incurred expenses surrounding the replacement of their Chief Nurse Executive.

FINDINGS

Chief nurse executives who respect their CEO ($r= .694$, $p<0.01$) believes the CNE and CEO share common goals for the facility ($r=.782$, $p<0.01$); that their relationship is better than average ($r= .718$, $p<0.01$); take time each week to mutually problem-solve ($r=.437$, $p<0.01$); believe that their job is interesting and exciting ($r=.406$, $p<0.01$); share similar interests outside of the work environment ($r= .346$, $p<0.01$); content themselves that the roles of CEO and CNE are specific with little overlap ($r= .261$, $p<0.05$); enjoy the income range that they earn ($r=.251$, $p<0.05$); are willing to actively seek new ways to improve their relationship with the CEO ($r=.254$, $p<0.05$); and are, (from the results of this study), more likely to maintain a positive relationship with their CEO boss, hence more likely to remain in their CNE position.

Table 1 Previous Nursing Turnover Cost Studies

Author/Date	Sample	$/RN Turnover	Nursing Salary	Ratio of Turnover Cost to Salary	Total RN Turnover Cost
Jones, 1990	4 hospitals	$10,098	$27,000	0.37	$0.6-$1.6 million
Wise, 1990	1 hospital`	$11,740	$38,400	0.31	$0.55-$1.3 million
Advisory Board, 1999	6 hospitals	$42,000-$64,000	$37,000-$41,000	1.1-1.6	N/A
Stone, et al, 2003	4 units in each of 6 hospitals	$21,514	N/A	N/A	N/A
Waldman, et al	1 hospital	$23,487-$31,486	$32,000	0.7-1.0	$6.1-$8.2 million

Information obtained with permission

Aspen Pub./JONA na341206-2 December 2, 2004 4:24

JONA Volume 34, Number 12, pp 562-570

Table 2 CEO/CNE Pearson's Correlation Chart. The CEO/CNE excellent relationship correlates with:

Question #1 stating that the CNE feels she/he has an excellent relationship with the CEO, correlates with the following qualifiers of that relationship:	2-tailed Significant @ 0.01 level	2-tailed Significant @ 0.05 level
3. Share common goals for facility	.782	
4. Facility staff understands unique role of each of us in organization	.339	
5. Roles are specific & discrete with little overlap		.261
7. Comparison with others known; our CEO/CNE relationship better than average	.718	
11. Weekly scheduled time to problem solve	.437	
13. CNE Actively seeks new ways to improve working relationship		.254
14. CNE respects CEO	.694	
15. Similar interests outside of work	.346	
19. Working relationship probably NOT as good as other professional relationships in org.	-.483	
20. CNE feels must compromise pt care quality to meet financial goals	-.558	
30. Intrinsic value of job in interesting, exciting position	.406	
51. Income range		.251

Part II- Ethnic Diversity Among CNEs

A decade's worth of lip-service paid toward increasing ethnic diversity in nursing, has accomplished little change in the diversity of nurses at the level of Chief Nursing Executive, even though population diversity leads to patient diversity, and population diversity is rapidly increasing. Studies indicate that patients of a specific ethnic culture prefer care by members of their own culture but numbers of ethnically diverse nurses remain low [13]. Nursing schools are challenged to actively recruit, then to retain, ethnically diverse students in order to matriculate ethnically diverse nurses [13].

Employment as an ethically diverse nurse does not guarantee promotion to CNE level. This study categorized ethnic information by U.S. Census categories of White/Caucasian, African-American, American Indian/Alaska Native, Asian, Hawaiian/other Pacific Islander, or, two or more races. Sixty two of 66 respondents answered this question, revealing that 60 were white/Caucasian; one American Indian/Alaska Native, and one Asian. This indicates a diversity factor of 0.03% of CNE positions held by ethnically diverse nurses. CNE retention in position found 12% of respondents in position less than one year; 28.8% longer than one year but less than four years; 47% remained longer than four but less than ten years; and 12% citing they remained in their positions longer than ten years.

PART III- The Financial Fallout from CNE Replacement

Cost Calculation Methods Through the Years

In 1966 Melbin and Taub devised a method for calculating nurse replacement costs resulting in a cost of $420.18 plus incalculable cost factors of lower quality care and job dissatisfaction among nurses remaining at facilities that had lost their CNE [14, 15]. Figures reported in 2002 cite a cost of $42,000 for each staff nurse replaced by a facility, a one-hundred fold increase in staff nurse replacement costs.

If it takes $42,000 to replace a staff nurse, how much would it cost to replace a Chief Nurse Executive, the professional, economic and organizational cultural and visionary leader, charged with guiding staff toward fulfillment of the hospital's mission? Turnover at CNE level not only delays the goal-achievement, but may actually sabotage efforts toward hospital-wide goal-attainment if the new nurse executive does not understand or agree with strategic plans. This attitude may intensify if administrative cost-cutting exists within the nursing department. CNE attitude is not something that can be readily determined through the interview/hiring process [16].

Toulemonde of Belgium demonstrated a labor turnover model (Marti Efficiency Wage Model) related to increasing salary levels within the organization. Unlike the insider-outsider and efficiency wage theories of the 1970s, the Marti Efficiency Wage Model includes a 'multiplier effect' portending changes in wage differential increase the productivity differential- eventually becoming more costly to replace an 'insider' with an 'outsider' [17, 18].

Competition between CNE and Nurse Educator Positions

Many factors have combined with traditional reasons fueling CNE turnover to accelerate the seriousness of the situation within the United States. In the US the mean age for nurses is 46.8 yrs [5]. The average age of advanced degree nurse educators is 55.7 yrs [19]. Nurse educators and CNEs usually share the same level of higher educational preparation. Since a shortage of nurse educators already exists, shortages of advanced degree nurses, also candidates for nurse executive positions, is likely to continue [19, 13]. A lack of minority representation, and a lack of minorities with advanced degrees in nursing further escalates the problem [19, 13]. Middle-aged CNEs may want to retire, or, may have reluctance to relocate [20]. Stress is also a concern for the nurse executive since approximately 75% of the hospital workforce is directly under the CNE's authority [20].

Former studies calculated the replacement costs of bedside nurses and advanced practice nurses [14, 21-26]. A grounded theory study of CNE-cited highest-priority strategies by focus area was done by Arnold et al in 2006, and a human capital replacement cost of Chief Nursing Officers was estimated to be 150% times a CNO's salary in 2002.

This is the only study examining cost replacement calculation strategies used by the former studies, combined with qualitative cost data obtained from the study's sixty-six subject responses.

Incremental costs and information analysis associated with CNE turnover is presented in 2008 U.S.D. in Table 4, determined from the pre and post-hire costs factored into the previously discussed models plus other contemporary cost categories.

Table 3 Historical nursing replacement cost formulas

Author	Year	Cost-category Inclusions	Equation	∑ Human Capital Replacement cost per RN	Specific toward replacement of CNE?
Melbin, M & Taub, D.	1966	3 categories of cost: Measurable, Hard-to-calculate, Uncalculable	Cost of replacing a nurse= Costs incurred in screening all applicants divided by number of persons actually hired + costs not calculable	$420.18	No
Jones, C.	1990	Direct and Indirect costs	Turnover rate = # RN terminations per fiscal yr divided by Average RN workforce per fiscal year times 100	$6,886 to $15,152	No
Kosel & Olivo @ VHA	2002	Direct Recruiting Costs; Indirect Recruiting Costs; Productivity & Training; Termination Costs	----------	↑ 150% times salary	Yes
Jones	2004	NTCCM	Nursing Turnover Cost Calculation Methodology (NTCCM)	$42,000-$64,000 (report on a study by Advisory Board Company in 1999)	No
Jones	2005	7 NTCCM cost categories	#RN turnover during Fiscal Yr Divided by Average # RNs employed during Fiscal Yr. multiplied by 100	$62,100- $67,100	No
HSM Group	2002			$92,442-$145,000	No

Table 4 Incremental costs of CNE replacement in 2008 USD

COST CATEGORY	$	Multi-plier effect	TOTAL
Termination process costs			
Contract salary payout (if applicable)	$133,500*		$133,500
Unused vacation, ET, sick days, etc. X .3 (.5 yr)	44,500		44,500
Exit interviews	500		500
Cost effect of decreased employee morale/ decreased productivity; absenteeism and tardiness	Unknown		Unknown
CEO time spent in litigation	200,000		200,000
Legal expenses ($90/Hr X $200/Hr)	18,000		18,000
Severance pay	200,000		200,000
Drop in customer satisfaction as compared with previous quarters (for 4 quarters)(1 qtr= $45,000 in revenue)			180,000
↓ Pre-turnover productivity- productivity changes by CNE before turnover occurs	25,000		25,000
Pre-hire (measurable)costs			
Advertising	15,000		15,000
Brochures	3,000		3,000
Interviewing time (see travel) 1 day @ $1800 X 6)	10,800		10,800
Payroll coding/record removal (@1800/day)	21,600	12 days	21,600
Ex-CNE exit interview	1300		1300
Head-hunter Search Agency contract fees	15,000		15,000
Secretarial/correspondence/receptionist salary	17,000		17,000
Postage for position correspondence (476 letters)	200	@.42	200
HR time on project @ $25/ Hr		1000 Hrs	25,000
Unfilled position vacancy:			
Interim CNE Salary	150,000	.5 yr	75,000
Interim CNE Benefits @ 30%		.5 yr	25,000
Testing/profiling costs	4,000		4,000
Background& Licensure checks	1,250		1,250
Hiring costs			
Phone screening potential applicants- $20/Hr		500 Hrs	10,000
Travel arrangements- Plane, hotel, food (Average of costal visit to Mid-America location with 2 day stay)	$1500	X 3 Applicants X 2 visits	6,000
Kit of information about facility	75 ea	X 3	225
Medical exam (final applicant)	1,400		1,400
Clerical/professional overhead/payroll processing	85		85

Dedicated share of Standard operating equipment costs	75		75
Salary for new CNE	220,000		220,000
Hiring Bonus	50,000		50,000
Fringe benefits	73,333		73,333
Add'l benefits: Company car	30,000		30,000
Free Parking	3,900		3,900
Country Club Membership + Induction fee	35,000		35,000
Moving expenses	10,000		10,000
Internal Employee referral bonus(s) if any	1,000		1,000
% of staff nurse loss due to dissatisfaction with CNE choice (Hall's Learning Curve Productivity Loss Formula)		<>10%	Incalculable
Induction phase costs			
Decreased productivity of nursing staff first year			Incalculable
Orientation of CNE (1 Wk staff + CNE Salary	8,000		8,000
Party celebration to acquaint staff/CNE	2,000		2,000
CEO time establishing relationship/social capital	40,000		40,000
Hall's Learning Curve Productivity Loss formula			
Compromised Patient Care Quality/risk assessment & minor litigation	8,000		8,000
Seminars/conferences/e-learning for CNE	10,000		10,000
Critical project involvement delay costs			Incalculable
Post-Hire costs			
Micro-costing % of plant depreciation & inventory			Incalculable
Process Evaluation by Administrative Team	3,000		3,000
Patient & Employee Satisfaction Survey Statistical Analysis (over 1 year)	12,000		12,000
TOTAL CNE REPLACEMENT COSTS			$1,521,668.00

*Determined by study data mean: 24 respondents @ $90,000; 36 respondents @ $150,000; 5 respondents @ $250,000= $133, 500

**Benefits determined by 30% of salary

DISCUSSION

This study cites an 11.8% return among CNEs to a questionnaire seeking answers to the question: what constitutes a good/acceptable relationship between a CEO and a CNE. In a literature search of information related to why CEOs remain in an administrative position, a good working relationship with their Board of Directors and their good economic performance as identified by the Chief Financial Officer (CFO) were the two predominantly cited reasons.

Building on that base, this study sought to find the determinants of a good relationship between CEOs and CNEs. Some of the items that scored the highest ($p<0.01$) included respect for the CEO and sharing facility goals. These relationship modifiers take time to achieve. Respect is earned over time by observation of decisions, identifying motives behind decisions, and realizing the outcomes of those decisions. Also, it takes time to absorb the culture, vision, mission, and values of any institution. These researchers believe a person must be in position for at least one year before the above two satisfaction determinants can be achieved. Also in contention with the determinants of CNE job satisfaction, are interesting and challenging working relationships that lend themselves to regular mutual problem-solving. Sharing similar interests outside of the work environment is also conducive toward maintaining a mutually satisfying work environment that may lead a CNE to feel that her/his CEO/CNE relationship is better than others of which they are aware.

If, however, the CEO leaves the organization, (and studies point to a high likelihood (17%) of this happening according to Tieman), the CNE has to establish a new compatible relationship with the new CEO. This, in fact, may be where the CNE turnover problem arises [7]. The new CEO may attempt to establish his/her corporate base with people trusted from former positions. This is the 'new broom sweeps clean' philosophy.

CONCLUSION/IMPLICATIONS FOR CHIEF NURSE EXECUTIVES

Literature cites many drivers and barriers to nursing job satisfaction affecting retention/turnover decision-making at the staff nurse level. Few sources cite similar drivers/ barriers at the CNE level. In discussing a CNE's decision- making when contemplating leaving a CNE position, high scores go to feelings of 'job embeddedness' for securing CNE retention [27, 28].

Similarities between CEO and CNE turnover include the Reilly factor of "*a good relationship* with the

hospital board and *healthy economic performance* [6]. CNEs must balance a good relationship with the CEO while supporting the nursing department's healthy economic performance-difficult in a professional culture climate that considers nursing a cost center, not a revenue center.

The ranks of ethnically diverse nurses who rise to CNE level is very low (0.03%).

This research statistically corroborates on a preliminary level what other authors have theorized: that CNE turnover and resulting vacancy rates cause costly repercussions to an organization's financial health and the quality of care delivered; and, that organizational effectiveness is compromised [14]. In addition to short-term productivity losses, CNE departure promises loss of future returns because of the synthesis of investments in human capital of the present CNE. That CNE's replacement will cost the hospital upwards of 1.5 million dollars.

ACKNOWLEDGEMENTS

The authors wish to thank Barnes-Jewish Extended Care and Barnes-Jewish Hospital Foundation for funding Grant #6665-01 making it possible to complete this first of three stages research.

Conflict of Interest

The authors have declared that no conflict of interest exists.

References

1. Turkel M. Struggling to find a balance: The paradox between caring and economics. Nursing Administration Quarterly. 2001;26(1):67-82.
2. Coffman S. Theory of Bureaucratic Caring. In: Tomey AA, Ed. Nursing Theorists and their Work (6th Ed). St Louis, MO: Mosby/Elsevier; 2006.
3. Kippenbrock T, May F. Turnover at the top: CNOs and hospital characteristics. Nursing Management. 1994; 25(9): 54-57.
4. Russell G, Siegel M, Daniels J, Weinstein M. The role of cost-effectiveness analysis in health and medicine. JAMA.1996; 276(14): 1172-1177.
5. Group H. Acute care hospital survey ofRN vacancy and turnover rates in 2000. Journal of Nursing Administration. 2002; 32(9):437-439.
6. Reilly P. Staying put. Modern Healthcare. 2003;33(17):6-7.
7. Tieman J. Status Quo in the executive suite. Modern Healthcare. 2001;31(23):10.
8. Evans M. Lonely at the top:ACHE survey reveals CEO turnover up in 2004. Modern Healthcare. 2005;35(17):14.
9. del Bueno D. Nurse executive turnover. Nursing Economic$. 1993; 11(1):25-28.
10. Thomasma, M, Hersher B. Facts and factors that can lead to forced nurse executive turnover. 1992 Paper presented at the American Organization of Nurse Executives (AONE), Chicago, IL.
11. Greipp M. Salary compression: its effect on nurse recruitment and retention. Journal of Nursing Administration. 2003;33(6): 321-323.
12. Salant P, Dillman DA. How to Conduct Your Own Survey. New York, NY: John Wiley and Sons. 1994.
13. Sullivan L. Missing persons: Minorities in the Health Professions. Atlanta, GA: Sullivan Commission on Diversity in the Healthcare Workforce: 2004.
14. Melbin M, Taub D. The high cost of replacing a nurse. Hospitals. 1966; 40:112.
15. Sredl D. Administrative turnover. Nursing Management. 1982;13(11):24-30.
16. Jenkins R, Sredl D, Hsueh K., Ding C. Evidence-based nursing process (EBNP) consumer culture attribute identity: A message-based persuasion strategy study among nurse executives in the United States. Journal of Medical Sciences. 2007;27(2):55-62.
17. Marti C. Efficiency wages: Combining the shirking and turnover cost models. Economics Letters. 1997;57: 193-196.
18. Toulemonde E. The interaction between efficiency wage theories and labour (sic) turnover costs. Bulletin of Economic Research. 2003;55(2): 203-208.
19. HRSA. Preliminary findings: 2004 National Sample Survey of Registered Nurses. Washington D.C. 2004.
20. Capell P. An epidemic of departures fuels health-care recruiting. Wall Street Journal.
21. Arnold L, Drenkard K, Ela S, Goedken J, Hamilton C, Harris C, Holecek N, White M. Strategic positioning for nursing excellence in health systems: Insights from Chief Nurse Executives. Nursing Administration Quarterly. 2006;30(1): 11-20.
22. Jones C. Staff nurse turnover costs: Part I, a conceptual model. Journal of Nursing Administration. 1990;20(4):18-23.
23. Jones C. Staff nurse turnover costs: Part II, measurements and results. Journal of Nursing Administration. 1990;20(5):27-32.
24. Jones C. The costs of nurse turnover, Part I. Journal of Nursing Administration. 2004;34(12):562-570.
25. Jones C. The costs of nurse turnover, Part 2: Application of the nursing turnover cost calculation methodology. Journal of Nursing Administration. 2005;35(1):41-49.
26. Waldman J, Kelly F, Arora S, Smith H. The shocking cost of turnover in healthcare. Health Care Manager Review. 2004;29(1):2-7.
27. Crossley C, Bennett R, Jex S, Burnfield J. Development of a global measure of job embeddedness and integration into a traditional model of voluntary turnover. J Appl Psychol 2007;92(4):1031-1042.
28. Holtom B, O'Neill B. Job embeddedness: A theoretical foundation for developing a comprehensive nurse retention plan. Journal of Nursing Administration. 2004;34(5):216-227.

Author biography

Dr. Darlene Sredl, Ph.D., R.N., is a researcher, nursing educator, pilot, and author who has published over 85 professional articles, 3 books, and is currently completing her 4th, EVIDENCE-BASED LEADERSHIP STRATEGIES FOR NURSE ADMINISTRATORS, ADVANCED PRACTICE NURSES (APNs), AND DOCTORS OF NURSING PRACTICE (DNPs), scheduled for publication by Jones & Bartlett Publishers in Dec. 2010. Dr. Sredl's research has focused on the Chief Nursing Executive (CNE) and the Evidence-Based Process (EBP). She is Associate Teaching Professor of Nursing at the University of Missouri @ St. Louis where she teaches nursing management courses at baccalaureate and

post-graduate levels. Dr. Sredl may be reached at: #206, College of Nursing, University of Missouri @ St. Louis, One University Blvd., St. Louis, MO 63121 USA. sredld@umsl.edu.

Dr. Niang-Huei Peng, Ph.D., R.N., is an assistant professor working in nursing education in Taiwan for several years. Dr. Peng has a special interest in NICU research and was awarded for innovative research including (1) the "Innovations in clinical practice award by University of Missouri-St. Louis in 2008. The research topic was "Exploration of the relationship between stress physiological signals and stress behaviors in preterm infants during periods of environmental stress in NICU. (2) Central Taiwan University of Science & Technology research grant- For building an automated stress physiological sensitivity-feedback apparatus to interrupt the stress responses in preterm infants; (3) Research grant from Taichung Veterans General Hospital and Central Taiwan University of Science and Technology- A preliminary survey of conditions and effects of medical and nursing care of dying infants in NICU. (2009); and, (4) National Science Research Grant- To explore experiences, beliefs and attitudes of neonatal clinicians towards caring for dying neonates in NICU in Taiwan. (2009). Dr. Peng may be reached at Central Taiwan University of Science and Technology, Mo. 11 Buzik Lane, Beitun District, Taichung City 40601 Taiwan (R.O.C.). Tel: -886-4-22391647; email: 106931@ctust.edu.tw.