

Characteristics of Nursing Homes: Adopting Environmental Transformation

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Abstract:

During the past few years, many nursing homes in North Carolina have formulated plans to transform or enhance their environments to make the facilities more desirable places to live and work. The purpose of this study was to compare characteristics of facilities adopting one specific model for environmental transformation. The Eden Alternative; with those adopting other environmental transformations or making no changes. Surveys were mailed to administrators of all ($n = 378$) certified nursing facilities in NC. A total of 167 surveys were returned, for a return rate of 44%. Of these, almost three fourths were planning or implementing some sort of environmental transformation. Thirty-seven facilities (22%) indicated they were currently adopting the Eden Alternative, and 47 (28%) were planning to adopt it. Twenty-six facilities (16%) reported they were currently adopting an environmental transformation other than the Eden Alternative, and another 9 (5%) were planning to adopt another environmental transformation. The facilities adopting or planning environmental transformation other than the Eden Alternative reported adopting (or planning to adopt) various components of the Eden Alternative. Forty-six facilities (28%) indicated they had no plans for environmental transformation. Facilities making environmental transformations were found to be similar to those making no changes on most variables examined, supporting the conclusion that environmental transformation is feasible for facilities with a wide range of characteristics.

Article:

Most people are reluctant to live in nursing homes, or to have their loved ones admitted to nursing homes. Many people even find visiting nursing homes to be depressing. Staff turnover in nursing homes is high, suggesting that nursing homes are not highly desirable places to work. During the past few years, many nursing homes in North Carolina and across the nation have formulated plans to transform or enhance their environments. Motivation for these changes may range from a desire to improve the quality of life of residents and staff to a desire to improve a home's public image or to save money by decreasing staff turnover and absenteeism.

The Eden Alternatives, developed by Harvard-educated physician Dr. William Thomas (1996; 1998) is the most comprehensive model available for environmental transformation of nursing homes. The Eden Alternative is intended to transform the physical, interpersonal, psychosocial, and spiritual environments of a facility, as well as the organizational culture. Research conducted in facilities pioneering the Eden Alternative suggests that, in addition to improving quality of life, implementing the Eden model may provide a variety of more tangible benefits, such as decreases in medication use, infection rates, incidents, pressure ulcer rates, and staff turnover (Ransom, 1998; Thomas, 1996).

Implementing any environmental transformation requires commitment of facility resources and staff time. Implementing the Eden Alternative requires additional commitments. To use the trademarked Eden Alternative name, the administrator and select members of the staff must be trained as Eden Alternative Associates, and the changes implemented must be consistent with the Eden Alternative model. Eden Alternative facilities are periodically assessed by a regional coordinator, listed in a registry (<http://www.edenalt.com>, 2001, May 15), and recognized with a plaque (Thomas, 1998).

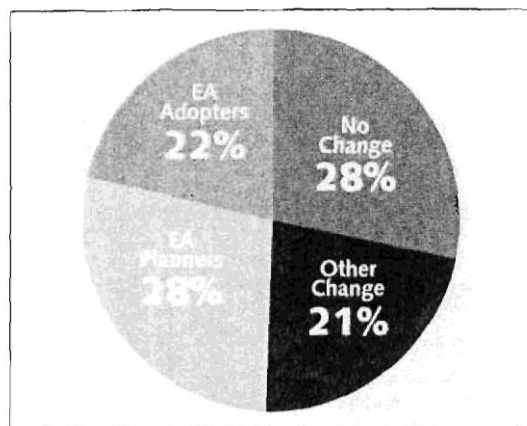
Problem Statement and Purpose

Prior to the trademarking of the Eden Alternative name and development of the registry, some facilities used the Eden Alternative name without recognition by or communication with the Eden Alternative organization. Currently, facilities may adopt parts of the model, or other environmental transformation, at will.

Facilities that join the registry receive formative evaluation, information, recognition, and the opportunity to interact with other facilities adopting the model. However, facilities may choose not to join the registry or use the trademarked Eden Alternative name for a variety of reasons, including cost or the desire to make changes not consistent with the model.

Anecdotal reports and inquiries made to the North Carolina Eden Coalition and the Eden Alternative Region II coordinator suggested that many facilities in North Carolina were implementing environmental transformations. The purpose of this study was to compare characteristics of facilities adopting the Eden Alternative with those planning or adopting other environmental transformations or making no changes.

Figure 1. Numbers and percentages of facilities currently adopting the Eden Alternative (EA Adopters), planning to adopt the Eden Alternative (EA Planners), planning or adopting other environmental transformation (Other Change), or having no plans for environmental transformation (No Change).



Conceptual Framework

The Thriving Theory, described elsewhere in this issue (Haight, Barba, Tesh, & Courts, 2002) recognizes human thriving to be a process of interactions between individuals and their human and nonhuman environments. The nursing home facility and staff comprise a huge proportion of a nursing home resident's world. According to the Thriving Theory, transformation of nursing homes from rigid, hierarchical, sterile environments modeled after hospitals into richer, more dynamic environments with increased interaction between residents and staff and between residents and the nonhuman environment, would promote and support thriving of both residents and staff. However, not all facilities are eager to adopt this innovation.

Rogers' (1995) model of the Diffusion of Innovations posits that several factors influence the decision to adopt an innovation. These factors include unique characteristics of the organizations considering adopting the change, the social systems of the organizations, the nature of the innovation, and the channels by which the innovation is communicated. Rogers' model also describes five categories of adopters, based on their

"innovativeness" or relative willingness to adopt new ideas. These are innovators, early adopters, early majority adopters, late majority adopters, and laggards.

Using Rogers' model, Castle (2001) found characteristics such as larger bed capacity, chain membership, and a high percentage of private-pay residents to be associated with early adoption of the innovations of special care units and subacute care services. Rogers' model supports examining the characteristics of nursing homes choosing to adopt environmental transformations, and those choosing not to make changes, to determine possible attributes affecting this decision-making process.

Methods

A survey was mailed to administrators of all ($n = 378$) certified nursing facilities in North Carolina. The survey addressed plans for environmental transformation and selected characteristics of the facility. An expert panel consisting of nursing home administrators, the Eden Alternative Region II coordinator, and personnel from the state Division of Licensure and Certification and the Health Care Facilities Administration, endorsed content validity and clarity of the instrument. Initially, telephone follow-up with nonrespondents was attempted. This strategy ultimately was abandoned because it was not possible to reach most nonrespondent administrators directly by phone.

For comparison of demographic characteristics, the facilities were categorized based on their plans for environmental transformation. Because the number of facilities planning other transformation programs was small, they were grouped with those currently adopting other transformation programs. The four groups resulting from this categorization were:

- Those currently adopting the Eden Alternative (EA Adopters).
- Those planning to adopt the Eden Alternative (EA Planners).
- Those planning or adopting other transformations (Other Change).
- Those with no plans for transformation (No Change).

Characteristics of the four groups *were* compared using chi-square tests of association (for nominal-level variables) and one-way analysis of variance (for ratio-level variables.) A Type-I error rate (alpha) of 0.05 was used in these exploratory analyses.

Results

A total of 167 surveys were returned, for a return rate of 44%. Of these, almost three fourths were planning or implementing some sort of environmental transformation. (Figure 1.) Forty-six facilities (28%) indicated that they had no plans for environmental transformation. Thirty-seven facilities (22%) indicated they were currently adopting the Eden Alternative, and 47 (28%) *were* planning to adopt it. Twenty-six facilities (16%) reported they were currently adopting an environmental transformation program other than the Eden Alternative, and another 9 (5%) were planning to adopt another environmental transformation program.

Facilities planning or adopting other environmental transformation programs were asked to describe their programs. *These* descriptions invariably proved to be subcomponents or variants of the Eden Alternative. Seven administrators responded that their facilities were "doing the Eden Alternative, just without using the name." Several ($n = 14$) reported incorporation of plants and gardening. Sixteen reported some inclusion of animals, most often on a nonresident basis. Four reported incorporating children into the daily routines of the facilities. Only one of these facilities specifically reported organizational restructuring or engaging in staff empowerment.

Facilities within each of the four groups were diverse (Table 1). All four groups included facilities with and facilities without private affiliations. Slightly more than half of facilities were in rural settings. Most were not

adjacent to a hospital, and none reported sharing staff with a hospital. In all four groups, more than 70% of residents were White and more than 15% were Black. The numbers of other ethnic groups were small in all facilities.

The four groups proved to be similar on these demographic characteristics, and the facilities planning No Change were not distinct from the other groups. The EA Adopters had a slightly larger percentage of White residents, and were more likely to be adjacent to a hospital. The facilities planning Other Change were most likely to have a religious or private affiliation. Chi-square tests of association did not reveal significant differences between the four groups on presence of a religious or private affiliation, setting (rural or urban), physical adjacency to a hospital, or percentage of residents who are White.

The age of the facilities' physical structures, and their lengths of operation as nursing homes, were quite heterogeneous (Table 1). All four groups included some facilities built within the past 5 years, and some more than 30 years old. Several facilities were more than 60 years old. The average age of the physical structures was 19.6 years, with a range of 1 year to 90 years.

The four groups did not differ significantly on age of their physical structures, but they did differ significantly on length of operation as a nursing home ($F = 4.65, p < 0.01$). The length of operation as nursing homes ranged from 2 to 86 years, with an overall mean of 17.8 years. The EA Adopters had been in service the shortest periods of time, with an average of 13.8 years. Those adopting Other Change had been in service the longest, with an average of 23.2 years. The facilities adopting Other Changes also had the greatest range in length of service at 5 to 86 years.

The size of the facilities ranged from 15 nursing home beds to more than 300 beds, with an average capacity of 107.7 beds. (Beds in other categories, such as assisted living, were not counted.) Each of the four groups included small facilities (fewer than 40 beds) and large facilities (fewer than 150 beds). The four groups did not differ significantly on bed capacity. All four groups included facilities with private, semi-private, and multi-bed rooms. In all four groups, most rooms were semi-private.

Most facilities reported high occupancy rates, with an average of 96% occupancy. The EA Adopters, EA Planners, and facilities planning Other Change all had average occupancy rates of 97% or more, while the facilities planning No Change had a significantly lower occupancy rate of 93% ($F = 3.03, p < 0.05$). Within each group, most facilities had occupancy rates of more than 90%. The lowest overall occupancy rate, 50%, was reported for a facility in the No Change group.

The staffing levels of the facilities, measured as nursing hours per patient day (NHPPD), were also examined (Table 2, Figure 2). The NHPPD ranged from a low of 2.1 to a high of 6.0, with an average of 3.52. The EA adopters had the highest staffing levels, followed by the EA Planners, then those planning Other Change. The facilities planning No Change had substantially lower staffing levels than the other groups (Figure 2). These differences in staffing levels were statistically significant ($F = 3.23, p < 0.025$).

Facilities also reported the minimum salaries they paid certified nursing assistants (CNAs) and the highest salary paid CNAs (Table 3). The lowest salary paid ranged from \$5.00 to \$6.76, with an average low salary of \$6.69. The highest salary paid at each facility ranged from \$6.32 to \$13.97, with an average maximum salary of \$9.43. The EA Adopters paid the highest maximum salary, and had the greatest variation in both minimum salary and maximum salary. The differences between the four groups of facilities were not statistically significant for either lowest or highest salary paid.

TABLE 1

Affiliation, setting, and characteristics of facilities currently adopting the Eden Alternative (EA Adopters), planning to adopt the Eden Alternative (EA Planners), planning or adopting other environmental transformation (Other Change), or having no plans for environmental transformation (No Change)

	EA Adopters n = 37	EA Planners n = 47	Other Change n = 35	No Change n = 46
Religious or private affiliation	16%	14%	26%	11%
Rural (rather than urban) setting	58%	42%	60%	59%
Physically adjacent to a hospital	16%	2%	4%	7%
Residents' Race/Ethnicity				
Caucasians	81%	72%	77%	73%
African-American	17%	27%	23%	24%
Hispanic	0.2%	0.1%	0.2%	0.1%
Native-American	1.4%	0.1%	0.1%	2.4%
Multiracial	0.1%	0.1%	0.1%	0%
Other (e.g., Asian, Pacific Islander, Inuit)	0.2%	0.4%	0.1%	0.4%
Mean (SD) age of building, In years*	19 (15.1)	18.6 (12.4)	19.9 (7.3)	20.1(19.6)
Mean (SD) years as a nursing Facility*	13.8 (6.7)	17.5 (7.3)	23.2(18.4)	16.7(6.7)
Mean (SD) total bed capacity*	105.9(50.1)	106.2(43.9)	114.9(76.7)	104.9(41.7)
Mean (SD) occupancy rate*	97.2 (6.4)	97.7% (7.5)	97.0 (10.9)	93.0 (8.4)

* 10 facilities did not report data for these variables

TABLE 2

NURSING HOURS PER PATIENT DAY OF FACILITIES CURRENTLY ADOPTING THE EDEN ALTERNATIVE™ (EA ADOPTERS), PLANNING TO ADOPT THE EDEN ALTERNATIVE™ (EA PLANNERS), PLANNING OR ADOPTING OTHER ENVIRONMENTAL TRANSFORMATION (OTHER CHANGE), OR HAVING NO PLANS FOR ENVIRONMENTAL TRANSFORMATION (NO CHANGE)

	Mean (SD)	Minimum	Maximum
EA Adopters (n = 31)	3.41 (0.73)	2.50	5.50
EA Planners (n = 45)	3.36 (0.74)	2.30	6.00
Other Change (n = 34)	3.26 (0.46)	2.10	3.34
No Change (n = 45)	3.03 (0.43)	2.20	4.00

Discussion

Results of this study document widespread interest in environmental transformation among nursing facilities in North Carolina. The Eden Alternative is exerting a pervasive influence on facilities. Many are striving to adopt the full Eden Alternative model, while others are implementing subcomponents of the model.

Facilities not implementing the full model were most likely to report incorporation of plants, gardening, or animals into their plans. They were less likely to engage in employee empowerment or restructuring or to incorporate children. This is hardly surprising. Gardening and plants have been incorporated into many nursing homes for decades, although rarely to the extent embraced in the Eden Alternative. Animal therapy is also a well-established feature of nursing homes.

Further, restructuring is less tangible than inclusion of plants and animals. Also, it does not make as good a press release, and it is not immediately obvious to visitors to the facility. Many facilities adopting the Eden Alternative report anecdotally that restructuring is the most difficult component of the Eden Alternative to accomplish, and the most threatening to the administration.

TABLE 3

LOWEST AND HIGHEST HOURLY SALARIES PAID CERTIFIED NURSING ASSISTANTS IN FACILITIES CURRENTLY ADOPTING THE EDEN ALTERNATIVE™ (EA ADOPTERS), PLANNING TO ADOPT THE EDEN ALTERNATIVE™ (EA PLANNERS), PLANNING OR ADOPTING OTHER ENVIRONMENTAL TRANSFORMATION (OTHER CHANGE), OR HAVING NO PLANS FOR ENVIRONMENTAL TRANSFORMATION (NO CHANGE)

	Lowest Salary Paid			Highest Salary Paid		
	Mean (SD)	Minimum	Maximum	Mean (SD)	Minimum	Maximum
EA Adopters (n = 31)	\$6.69 (0.99)	\$5.25	\$9.31	\$9.24 (1.95)	\$6.50	\$13.97
EA Planners (n = 45)	\$6.68 (0.92)	\$5.15	\$9.22	\$9.58 (1.37)	\$7.09	\$13.00
Other Change (n = 34)	\$6.76 (0.92)	\$5.00	\$9.00	\$9.48 (1.78)	\$6.32	\$12.62
No Change (n = 45)	\$6.64 (0.89)	\$5.00	\$9.00	\$9.39 (1.43)	\$6.32	\$12.62

The four groups of facilities were similar on most demographic characteristics examined, such as average size, age, setting, residents' ethnicity, and salaries paid. Within each group, there was considerable variation on all characteristics except occupancy rates. This supports the conclusion that the Eden Alternative or other environmental transformation may be feasibly undertaken by facilities of any sort, large or small, private or public, rural or urban. It would appear that the factors influencing the decision to adopt environmental transformation are quite different from those found by Castle (2001) to influence adoption of other innovations, such as special care units and subacute care services.

The four groups of facilities did differ significantly on three variables: occupancy rates, length of service as a nursing home, and staffing levels. The facilities adopting the Eden Alternative were newer, on average, and had higher staffing levels. The facilities planning No Change had the lowest staffing levels, and lower occupancy rates, on average. This may indicate that the facilities choosing to adopt the Eden Alternative, being newer, are high on innovativeness, or "early adopters," according to Rogers (1995).

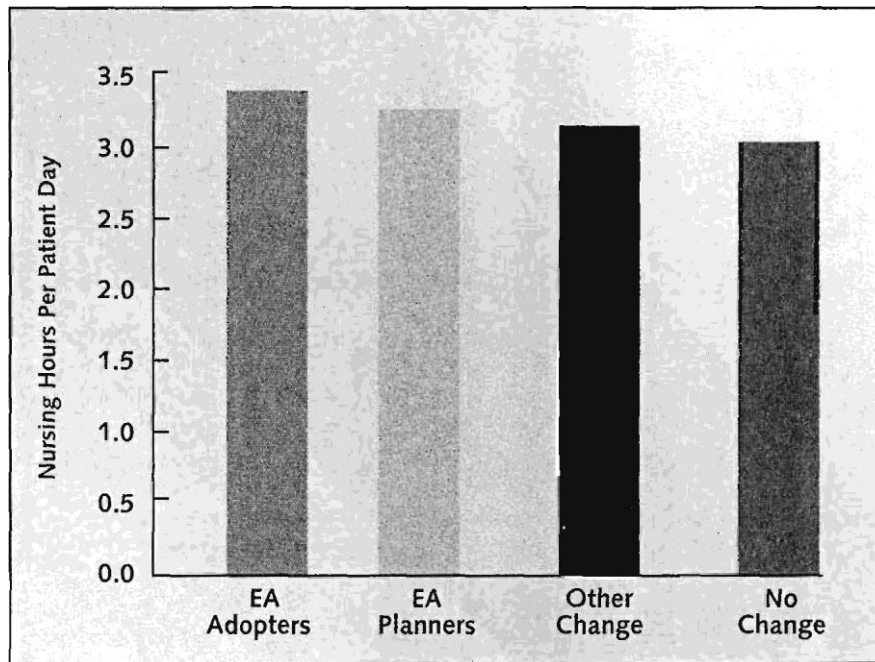


Figure 2. Comparison of current staffing levels (Nursing Hours Per Patient Day) of facilities currently adopting the Eden Alternative (EA Adopters), planning to adopt the Eden Alternative (EA Planners), planning or adopting other environmental transformation (Other Change), or having no plans for environmental transformation (No Change).

Conversely, the facilities planning No Change may be struggling with other problems, indicated by low occupancy rates and low staffing levels. They may not have the energy or resources to direct at environmental enhancement. This may indicate wise decisions on their parts. Environmental transformation enhances facilities that are already meeting residents' basic needs. It would be imprudent, however, to devote resources to environmental enhancement when meeting residents' basic needs is a challenge.

The EA Adopters paid the highest maximum salary of any of the four groups, and had the greatest variation in both minimum salary and maximum salary. Although differences in salaries were not statistically significant between the groups, these findings suggest that at least some of the facilities adopting the Eden Alternative may have greater latitude for rewarding merit or longevity than other facilities. This could contribute to retention of staff, better staffing levels, and staff being willing to change. If staff members experience greater job satisfaction, they may have more energy to invest in environmental transformation.

Several limitations apply to this study. First, some degree of nonresponse bias is likely. The facilities that returned the survey are probably more likely to be adopting environmental transformations than those that chose not to respond. Further, perceptions of social desirability may have led some facilities to report plans for transformation that they will not actually implement. Facilities may have also inaccurately reported data. For example, they may have over-reported their occupancy rates.


Finally, several tests of statistical significance were conducted as exploratory analyses in this study, resulting in a large experiment-wise Type-I error rate. Additional research is needed to confirm the characteristics of facilities making different decisions about environmental transformation. The characteristics of these facilities are anticipated to change, as the innovation of environmental transformation diffuses throughout the long-term care field. Research is also needed to evaluate the success of the transformations, and the impact of transformations on the lives of residents and staff.

In this study, demographic characteristics did not appear to adequately predict which facilities would adopt environmental transformations. Rogers' (1995) model would suggest that the decision may hinge on other factors, such as the way in which the message about the innovation is being delivered or components of the

social system of the organizations, such as their leadership and norms. The effects of these factors should be explored in subsequent studies.

The different components of the Eden Alternative are intended to work together synergistically to create a "human habitat," which fosters growth of everyone involved (e.g., staff, residents, children, involved family, community members) (Thomas, 1996). As such, the components of the model should yield a whole that is greater than the sum of the parts. Implementing only selected components of the model would be anticipated to yield less dramatic benefits than implementing the full model, which addresses nursing home life comprehensively.

The long-term outcomes of the Eden Alternative are largely undocumented. Future research should compare outcomes in facilities implementing the full model with those implementing only selected components of the model, and with those implementing other environmental transformations.



KEYPOINTS

NURSING HOMES ADOPTING ENVIRONMENTAL TRANSFORMATIONS

Tesh, A.S., McNutt, K., Courts, N.F., & Barba, B.E. Characteristics of Nursing Homes Adopting Environmental Transformations. *Journal of Gerontological Nursing*, 2002, 28(3): 28-34.

- 1 Environmental transformations in nursing homes are modifications aimed at enriching the environment to increase variety and spontaneity in residents' lives.
- 2 Three fourths of nursing homes in North Carolina were either planning an environmental transformation or had already implemented one. The Eden Alternative™ or a variant of the Eden Alternative™ was the most common type of implementation.
- 3 Nursing homes planning or adopting environmental transformations differed from those not planning any change on staffing level.
- 4 Rogers' model of Diffusion of Innovations would suggest that the social systems within a nursing home would have a major influence on decisions regarding adopting an environmental transformation.

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