

THE OREGON NURSE RETENTION PROJECT:

Final Report to the Northwest Health Foundation

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Method and Results



The Oregon Nurse Retention Project: Contributors

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The Oregon Nurse Retention Project: Acknowledgements

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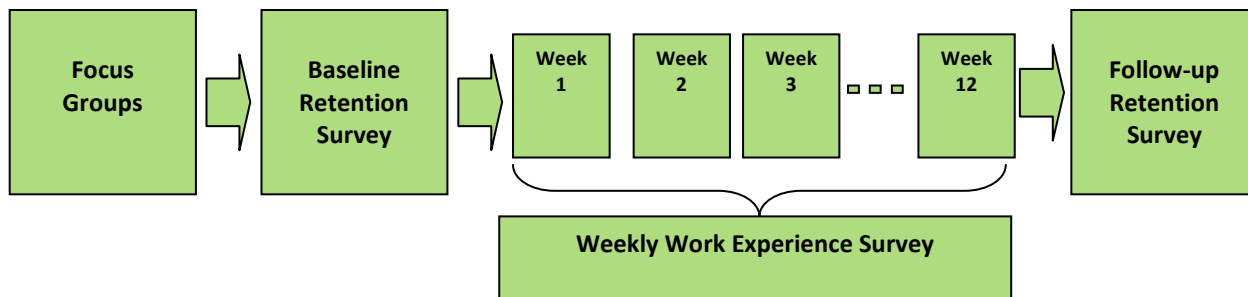
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Figure 2. ONRP Research Overview.



Research Design and Methods

Our research consisted of a collaborative effort between researchers from the Oregon Nurses Association and the Applied Psychology Program at Portland State University. During the course of the project, the principle investigator accepted a position at Clemson University and eventually obtained both additional grant support and graduate student participation at Clemson, further increasing the overall level of support for the research. Oregon Nurses Association is an important stakeholder in issues affecting nurses in the state. The organization has 10,000 nurse members and offers integrated services and support through its programs in professional nursing practice, health and safety in the work place, continuing education programs, research, influence in regulatory and legislative arenas, and collective bargaining. The Applied Psychology Program at Portland State University is internationally recognized as a leader in the field of Occupational Health Psychology – a field devoted to understanding how individual and work environment factors influence occupational safety, retention and turnover, as well as worker health, and well-being. Finally, Clemson University is one of the top rated public universities in the country; the Clemson Department of Psychology also offers considerable graduate student training and faculty expertise in Occupational Health Psychology.

Design Overview

Our research used a prospective research design that combines standard organizational climate and retention questionnaire measures with a weekly work experience survey. Figure 2 presents an overview of the research design. At baseline, we conducted a survey assessing nurses' personal and organizational resources as well as the retention pathway and outcomes

measures (i.e., turnover cognitions) outcomes. Then, participating nurses completed a weekly work experience survey for 12 consecutive weeks. In this survey, nurses gave narrative descriptions of their most positive and most stressful work experiences, provided quantitative ratings of several characteristics of these experiences, and described interventions their organization could use to increase the likelihood of the positive experiences and decrease the likelihood of the stressful experiences. Finally, participants completed a follow-up survey that repeated the baseline measures in order to assess changes in retention outcomes over the course of the grant.

The use of the weekly work experience survey design has many advantages for nurse retention research. First, health research suggests that stressful life events tend to exert their strongest effects over about a 3 month time period. Thus, we wanted to capture at least 3 months of stress-related data. Second, one week is a narrow enough increment that most people should be able to accurately report on the most stressful events that happened to them in that period. Third, using the one-week period rather than daily measures gives people a bit of time to reflect on the effects that occurred that week, rather than capturing their immediate reactions. This enhanced our confidence that their perceptions are more lasting responses to events which may be either more or less intense than peoples' immediate reactions. Finally, we chose a one-week interval to strike a balance between our desire for fine-grained data about work experiences and our desire to keep the nurses' workload to manageable levels.

Human Subjects Approvals

All research conducted as part of this grant was approved by the Portland State University Human Subjects Research Review Committee.

Instrument Design

We gathered data on a wide variety of survey instruments and qualitative questions. Appendix A describes all of these instruments, including sample items, response formats, key references, and reliability information for the Wave 1 and Wave 2 surveys. Complete instruments are available from the first author and consistent with our goal of making the publicly available, we have presented these same tables along with instructions for obtaining complete copies on our project web site at www.onrp.webnode.com. As we complete studies using ONRP data, we expect to post them on the ONRP web page. We expect these studies will contain additional validation information about the ONRP instruments.

Several of the instruments used in this study are either completely new or are adaptations of existing instruments for the purpose and context of our research. Generally speaking, we sought short but valid instruments, and generally tried to capture our key constructs in as few items as possible. Given that the positive and negative experience scales were central to the project and completely new, these were the longest instruments. Our process for developing scales was relatively straightforward. For the first several months of the project, the research team met on a weekly basis with the central goal being to focus on a final set of instruments. These meetings consisted of lively discussions of the model driving our research and critical evaluations of current research instruments. As time went on, we identified several interesting topics that were not part of our original research proposal, but that implied the need to include additional instruments. Appendix A lists all of these instruments.

Once we had a complete mock-up of the Wave 1 survey, we held a focus group with 8 experienced nurses. The purposes of this meeting included (1) estimating the time to complete the Wave 1 survey, (2) obtaining feedback on the specific survey items as well as the issues addressed by the survey, and (3) developing examples of positive nursing events. We made several changes to the instruments based on these discussions, including adding some new concepts and measures suggested by the nurses. We also held a second focus group with 6 experienced nurses. The purposes of this second focus group were to estimate

the time to complete the weekly work experience survey and obtain feedback on the positive and negative events used in our measures. Both groups provided many valuable suggestions for the surveys, particularly in relation to identifying commonly positive and negative events. These meetings were highly productive and greatly increased the user acceptability of these measures; producing better instruments.

Recruiting

Sample recruitment was conducted in a multi-step procedure designed to maximize participation and representation of nurses throughout the state of Oregon. First, members of the research team attended conferences sponsored by the Oregon Nurses Association (ONA) throughout the recruitment and data collection process. These meetings included ONA Conventions held in Eugene, OR (spring, 2007); Bend, OR (spring, 2007); and Keizer, OR (fall, 2008). Announcements were also made during the ONA conventions regarding the aims of the project and the opportunity to participate. At the Bend convention, a research team member also staffed a booth where nurses were given information about the aims of the project and were directly invited to participate by completing a form containing their contact information.

Second, ONA also circulated information regarding the study through regular newsletters and an additional postcard mailing, containing particular instructions and information such as when the study would commence and how interested nurses could participate. Although the primary recipients were members of ONA, other nurses were interested (e.g., heard from their nurse colleagues) and were allowed to participate, provided that they met other participation criteria.

Third, nurses were invited throughout the recruitment process to register online for the study on a website constructed specifically for the project. This site was developed and maintained by ONA and consisted of a description of the research and a series of demographic questions covering personal characteristics such as age and gender, work site characteristics such as geographical location, and work characteristics such as typical work schedules. Some participants registered by completing hard-copies of the forms in person, such as those at the ONA convention in Bend and those who printed off the online form and submitted it by mail). In those cases, members of the research team entered their information into the data base.

Upon registration, nurses gave their consent to be contacted for participation in the study by the researchers. As the number of nurses who registered on the website exceeded our target number for participants, we selected those who best represented diversity within the nursing workforce (i.e., rural settings, less tenured nurses), consistent with our project's aims. Thus, once nurses had registered, they were considered prospective participants. Finally, the nurse participants who had registered on the website were contacted via email or postal mail, according to their indicated preference, in order to obtain their consent to participate in the study. Specifically, those who requested contact through email, which were the majority of participants, received an email containing a link to the survey. Participants who selected the postal mail option, received a cover letter explaining the study aims, a hard copy of the survey, and an envelope with return postage paid.

All participants received the following compensation for each survey they completed: Wave 1 surveys (\$20 per participant), Wave 2 surveys (\$10 per

participant), and Weekly surveys (\$5 per participant). Additionally, participants were entered into a series of raffles for several \$50 prizes. The only participants who did not receive compensation were approximately 30 people who completed hard copies of the Wave 1 surveys and who did not provide contact information for reimbursements and therefore, could not be identified.

Participant Characteristics

A total of 438 nurses participated in the Wave 1 Survey. Tables 6 and 7 provide some basic characteristics of this group and Appendix B provides additional sample characteristics. All of the nurses who completed the Wave 1 survey and who provided contact information were invited to participate in the weekly work experience survey. Of these, 144 nurses agreed to participate in the weekly work experience survey and 114 provided at least 8 weeks of usable data for the weekly work experience project. We conducted the Wave 2 survey approximately 6 months after the Wave 1 survey. All Wave 1 participants were invited and 343 nurses returned surveys.

Table 6. ONRP participants' work and demographic characteristics.

	N	Mean	Standard Deviation	Minimum	Maximum
Age	399	45.75	11.35	22	70
Number of Dependent Children	401	.74	1.076	0	5
Hour Length of Typical Shift	404	3.58	1.45	1	7
Hours Scheduled	400	32.06	8.20	0	80
Hours Actually Worked	400	35.24	10.31	4	88
Voluntary Overtime Hours per week	389	3.79	5.15	0	36
Number of Shifts Worked per week	393	3.49	1.28	1	16
Occupational Tenure (Years)	405	17.68	12.14	0	45
Years Since Degree	405	17.73	12.23	0	47
Organizational Tenure (years)	404	10.99	9.29	0	38
Position Tenure (years)	406	7.17	7.17	0	33

Note. The figures above are based on available information from Wave 1 participants.

Table 7. ONRP participants' basic demographic characteristics.

	Frequency	Percent
Gender (N = 402)		
Female	373	92.8
Male	29	7.2
Age (N = 399)		
22 – 29 Years	42	10.7
30 – 39 Years	80	20.1
40 – 49 Years	94	23.6
50 – 59 Years	149	37.3
60 – 69 Years	35	8.8
70 Years	1	.3
Ethnicity (N = 406)		
White	374	92.1
Multi-Ethnic	14	3.4
Asian	9	2.2
Hispanic or Latino/Latina	5	1.2
American Indian/Alaskan Native	2	.5
Native Hawaiian/Pacific Islander	1	.2
Black/African-American	1	.2
Highest Educational Degree (N = 405)		
Diploma in Nursing	26	6.4
Associates in Nursing	135	33.3
Associates, Non-Nursing	1	.2
Bachelors in Nursing	174	43.0
Bachelors, Non-Nursing	44	10.9
Masters in Nursing	13	3.2
Masters, Non-Nursing	9	2.2
Doctorate in Nursing	1	.2
Doctorate, Non-Nursing	2	.5
Relationship Status (N = 403)		
Married	272	67.5
Widowed	6	1.5
Divorced or Separated	53	13.2
Never Married	39	9.7
Living with Significant Other	30	7.4
Domestic Partner	3	.7
Dependent Children at Home (N = 401)		
0 Children	237	59.1
1 Child	78	19.5
2 Children	49	12.2
3 Children	30	7.5
4 Children	4	1.0
5 Children	3	.7
Dependent Adults at Home (N = 402)		
No	365	90.8
Yes	37	9.2

Results for Aim 1: Critical Stressors and Positive Work Experiences

Aim 1 concerned the nature of positive and negative work experiences faced by nurses. As noted above, we used a mixed method approach to investigate this question. Our quantitative methods included surveys asking nurses to report how often they experienced each of several positive and negative events. Our qualitative methods asked nurses to describe the most stressful/most positive events that happened over the last week.

Weekly Work Experience Survey: Quantitative Findings

To develop the initial list of events for the quantitative analyses, we reviewed past nursing research, held brainstorming sessions with research team members, and conducted focus groups with experienced nurses. This process produced 100 items capturing 33 positive and 67 negative events. We then asked seven graduate students in psychology to sort the items into successes, supports, demands, and conflicts (see Appendix C). We found a great deal of consensus: 86% of the events were sorted into the same subcategory by at least six of the seven judges. We retained these 86 items for further study and dropped the remaining 14 items with lower agreement among the judges. We used the Wave 1 items to test the Oregon Nurse Retention Model as described below (Aim 2). Deese et al. (2009) reported some details of the Wave 1 findings (for citation please see the ONRP website (<http://onrp.webnode.com>)). For the remainder of our discussion of Aim 1, we focus on the results from the weekly work experience survey.

To construct the quantitative piece of the weekly work experience survey we needed to reduce the list of 100 events from Wave 1 to a smaller set that would be relatively easy for nurses to complete on a weekly basis. We either selected these items directly from the Wave 1 item pool or wrote new items reflecting combinations of similar items from Wave 1. The final list included 33 positive and 21 negative events. Nurses reported how frequently (i.e., the number of shifts) they experienced each event in each week of the weekly. We noted some inconsistencies in the nurses' reporting of the number of shifts that nurses reported working each week and the number of shifts they reported the events occurring (i.e., where events were reported as occurring on more shifts than the nurse reported working). Therefore, we decided to code the response data as a 0 if the nurse reported not experiencing the event in a given week, a 1

if the nurse reported experiencing the event on some but not all shifts in a given week, and a 2 if the nurse reported the event as occurring on all shifts in a week. We then averaged these scores across all of the weeks of the weekly study. Thus, scores closer to 2.0 mean that the nurse experienced the event nearly all the time (i.e., on most shifts on most weeks); scores closer to zero mean that the nurse rarely experienced the event.

Table 8 shows the average scores for the four broad categories of events. The data indicate a couple of broad conclusions about the events. First, the positive events occurred much more frequently than the negative events. The average scores of supports and successes .85 and .73 respectively indicate that nurses usually experienced these events on at least some shifts every week. In contrast, the scores for demands and conflicts of .27 and .13, respectively, indicate that these events occurred much less frequently. However, Table 8 also shows the wide range of responses. Some nurses reported experiencing all of the positive events on nearly every shift they worked; others indicated that the events almost never occurred. We noted a similar wide range of scores for the negative events.

Table 8. Descriptive statistics for broad categories of positive and negative events.

Event	Mean	SD	Min.	Max.
Supports	.85	.30	.11	1.88
Successes	.73	.28	.14	1.70
Demands	.27	.23	.00	1.24
Conflicts	.13	.16	.00	1.11

Note. Mean = Average score across all events in the category for all 12 weeks. SD = standard deviation. Min. = lowest 12 week average score; Max = highest 12 week average score.

Tables 9-10 present descriptive statistics for the individual events. These data consist of the scores for each individual item as described above. Although the general pattern shown in Table 8 held for the individual events, we noted wide variability in scores for individual events. Nurses experienced some of the positive events (Table 9) on most shifts (e.g., coworkers provided emotional support, worked well as a team, shared a laugh), whereas others were much less common (e.g., manager helping when needed, helping a patient die with dignity). Although the overall frequency of negative events was relatively low, Table 10 shows that several negative events occurred relatively frequently and some nurses reported that these negative events occurred on every shift. Most of the frequent negative events concerned resource constraints and staffing problems.

The descriptive statistics for the weekly work experiences help document nurses' typical patterns of work experiences. It is important to remember that these statistics include nurses who experienced many more of the events and those who far fewer of the events. For example, some nurses reported certain positive events occurring on every shift and/or none of the negative event occurring on any shift. On the other

hand, while the overall average scores for the negative events were quite low, all of the negative events had maximum scores of 50% or greater, indicating that some nurses experienced one of these negative events at least on every other shift. These results confirm the idea discussed earlier that studies of the "average nurse" can produce results that may be true of the group as a whole, but not applicable to many nurses in the group.

Table 9. Positive events experienced by nurses each shift.

Event (abbreviated versions)	Type	Mean	SD	Min.	Max.
Provided emotional support	Support	1.70	.32	.89	2.00
Coworkers worked well as a team	Support	1.62	.34	.50	2.00
Coworkers shared a laugh	Support	1.61	.39	.20	2.00
I helped a fellow nurse	Support	1.40	.45	.17	2.00
Helped patient feel better	Support	1.38	.49	.00	2.00
My unit members were nice to each other	Success	1.38	.51	.00	2.00
Educated patient about condition	Success	1.23	.54	.00	2.00
A patient thanked me	Support	1.21	.54	.00	2.00
A patient's family thanked me	Support	1.11	.50	.00	2.00
Made a difference in someone's life	Support	1.09	.57	.00	2.00
Another nurse helped me when needed	Success	1.08	.49	.00	2.00
A coworker thanked me	Support	1.03	.52	.00	2.00
I shared knowledge with a coworker	Support	1.01	.52	.00	2.00
Another nurse shared knowledge	Support	.88	.51	.00	2.00
Developed close bond w patient	Support	.86	.55	.00	2.00
Coworker complimented my work	Support	.86	.49	.00	2.00
I supported a coworker emotionally	Support	.85	.50	.00	2.00
Overcame a challenge	Success	.73	.54	.00	2.00
A charge nurse thanked me	Support	.57	.49	.00	2.00
A physician thanked me	Support	.56	.50	.00	2.00
Coworker gave helpful feedback	Support	.53	.45	.00	1.90
Physician complimented my work	Support	.52	.47	.00	1.90
Coworker taught me a technique	Success	.47	.45	.00	1.90
Implemented a challenging procedure	Success	.46	.48	.00	2.00
A physician helped me when needed	Support	.40	.40	.00	2.00
Coworker taught me to deal with people	Success	.38	.42	.00	1.90
Figured out difficult task	Success	.38	.42	.00	1.90
Helped save a life	Success	.34	.48	.00	2.00
Manager complimented my work	Support	.33	.35	.00	1.90
My manager helped me when needed	Success	.29	.36	.00	2.00
Taught patient complex self-care	Support	.27	.41	.00	1.91
Patient unexpectedly improved	Success	.19	.29	.00	1.20
Helped patient die w dignity	Success	.08	.21	.00	1.78

Note. Mean = Average score across all events in the category for all 12 weeks. SD = standard deviation. Min. = lowest 12 week average score for any individual nurse; Max = highest 12 week average score for any individual nurse.

Table 10. Negative events experienced by nurses each shift.

Event (abbreviated versions)	Type	Mean	SD	Min.	Max.
Equipment problems	Demand	.61	.48	.00	2.00
Not enough time for tasks	Demand	.51	.46	.00	2.00
Information problems	Demand	.46	.43	.00	1.73
Not enough staff	Demand	.33	.38	.00	1.38
Not enough RNs	Demand	.30	.38	.00	1.50
Patient declined unexpectedly	Demand	.25	.31	.00	1.60
Staff skills lacking	Demand	.25	.34	.00	1.50
Staff late/absent	Demand	.25	.31	.00	1.50
Staff experience lacking	Demand	.25	.33	.00	1.25
Patient failed to improve (felt helpless)	Demand	.24	.34	.00	1.70
Coworker conflict	Conflict	.24	.27	.00	1.20
Micromanaged	Conflict	.21	.34	.00	1.90
Patient conflict	Demand	.19	.28	.00	1.55
Work too demanding	Demand	.17	.28	.00	1.60
Physician conflict	Conflict	.15	.24	.00	1.30
Staff request denied	Demand	.14	.29	.00	2.00
Manager conflict	Conflict	.11	.21	.00	1.50
Staff approved but late	Demand	.08	.21	.00	1.50
Value conflict	Demand	.04	.12	.00	1.00
Discrimination	Conflict	.03	.12	.00	1.00
Sexual harassment	Conflict	.02	.12	.00	1.00

Note. Mean = Average score across all events in the category for all 12 weeks. *SD* = standard deviation. Min. = lowest 12 week average score for any individual nurse; Max = highest 12 week average score for any individual nurse

Weekly Work Experience Survey: Qualitative Findings

The weekly work experience survey also asked nurses to provide narrative descriptions of the most stressful and most positive events that happened to them each week. With over 100 nurses providing approximately 8-12 weeks of data, we generated over 1,000 positive and 1,000 negative incidents. Thus, it was important to reduce this list to a more manageable size for the purposes of our research.

To reduce the list, we relied on subjective ratings of the events provided by the nurses. These ratings consisted of seven adjectives for the positive events and eight adjectives for the negative events. We used these ratings to identify a subset of the most positive and most negative events. First, we conducted an exploratory factor analysis (EFA) of the positive event ratings (see Table 11).⁶ This analysis resulted in three factors, the first consisted of items reflecting stressful and demanding. The second factor consisted of items referring to how meaningful, rewarding, and serious the event was. Finally, the third factor included predictable and controllable.

Table 11. Exploratory factor analysis for most positive event ratings.

Item	Factor		
	1	2	3
Stressful	.93		
Demanding	.86		
Meaningful		.89	
Rewarding		.88	
Serious		.65	
Predictable			.74
Controllable			.51

The second factor made the most conceptual sense to use as a rating of “positiveness” so we focused on this score for further analysis. About 50 participants each week reported an average of 4 or above (on a 5 point scale) on the positiveness score. Therefore, we used 4.0 a cutoff score and randomly selected 15 events from each week to include in the compilation. This produced a list of 180 positive events.

We used the same process for the negative items. The factor analysis of these items yielded two factors (see Table 12). The first consisted of undesirable, serious, demanding, meaningful, predictable, and stressful. The second was made up of controllable and rewarding. As with the positive events, we used a cut-off score of 4.0 to define events as very stressful and randomly selected 15 events each week to include in the study. This resulted in a list of 180 negative events.

Table 12. Exploratory factor analysis for most negative event ratings.

Item	Factor	
	1	2
Undesirable	.91	
Serious	.86	
Stressful	.85	
Meaningful	.82	
Demanding	.75	
Predictable	.41	
Rewarding		.65
Controllable		.54

We then sorted the events into categories to identify common kinds of positive and negative events. In each case, a member of the research team read through the unedited descriptions provided by the nurses. The team member then sorted the descriptions into categories based on the similarity of their content. Tables 13 and 14 present the results of these analyses. It is important to keep in mind that these categories do not constitute an all-inclusive description of either the positive or negative aspects of nurses’ jobs. Rather, they describe common patterns among events nurses describe as very positive or very negative experiences.

⁶ Exploratory factor analyses are used to investigate patterns of correlations among different items or attributes. In the present case, the “factors” produced by the EFA reflect items that people tended to answer similarly. EFA research typically assumes that such items have some underlying shared property.

Table 13. Content analysis of nurses' most positive work experiences.

Positive Events	
Successes	Supports
Making a Difference	Coworker Supports
Programs and Processes	Helping Others
Professional Development	Feeling Appreciated

We sorted the positive events into six categories (Table 13). These included three kinds of successes: making a difference, professional growth, and programs and processes. Similarly, we identified three clusters of supports, including coworker supports, helping others, and receiving recognition. In order to better illustrate the nature of the events fitting into each category, we provide further descriptions of each category and include examples of the events from the larger list that we analyzed for this study.⁷

Making a difference

Events in this category concerned positive patient outcomes. Nurses described a wide range of these events, including saving a patient's life, relieving pain, delivering a healthy baby, helping a patient die with dignity, educating a patient or his/her family, and having positive interactions with a patient. Some of the most compelling stories were the examples of general positive interactions with patients as the nurses provided both needed and valued care. Examples of events in this category included:

- Having positive outcomes for patients with emergency situations (e.g., successful resuscitations of crashing patients, emergency surgeries).
- Helping women give birth under special circumstances (e.g., teenaged mothers, Spanish-speaking mothers).

- Helping dying patients and their families to be as comfortable as possible.
- Helping families learn to care for an ill family member.
- Working successfully with families who were previously thought to be difficult and dissatisfied.
- Having patients who had a positive attitude during difficult circumstances (e.g., multiple surgical procedures for different conditions).
- Seeing previously sick patients get discharged in completely good health.
- Talking with upset/anxious patients about their condition and helping them be able to calm down.
- Modifying a treatment plan to respond to a patient's special circumstances (e.g., cultural or religious background).

Professional development

The professional development category involved events involving the opportunity to learn new skills/knowledge or increase current skills/knowledge. We treated these events as distinct from the patient successes, if the nurse wrote more about the task/procedure than the patient outcome, although they clearly overlap, at least to some degree. Examples of events in this category include:

- Beginning to understand features of a particular kind of medical condition and feeling confident as a result.
- Learning from being exposed to a wide range of patients or to particularly challenging patients.
- Using new diagnostic tool or other equipment.

⁷ The participants provided many great examples of specific events. Our informed consent process included a commitment to participants not to release individual descriptions of events, in order to protect their rights as well as those of their patients and coworkers. Therefore, we elected to provide descriptive summaries rather than direct quotes from their responses.

Programs and processes

Patient care depends on the smooth operation of several different systems and units. The programs and processes category reflects the appreciation nurses feel when these systems run smoothly and when management introduces new programs that help these systems function more effectively. Examples of events in this category include:

- Successfully replacing missing staff to fill potential gaps in patient care.
- Seeing other groups or committees respond to a concern raised by the nurse and having the problem actually be addressed.
- Implementing new programs (e.g., recycling) with the help of other people at work.
- Seeing improvements in morale because of important changes to scheduling or staffing policies.

Coworker supports

Coworker support referred to positive social interactions in which nurses received critically needed help from coworkers. Examples include colleagues who:

- Taking care of a nurse’s stable patient so the nurse could help a patient who was crashing.
- Go out of their way to be helpful during orientation.
- Cover shifts for a sick colleague.
- Actively participate in a course taught by the nurse.
- Support the nurse during difficult circumstances.

Helping others

The helping others category refers to events where a nurse assisted other nurses with performing critical tasks or provided other forms of help to coworkers and others in ways that went above and beyond the nurse’s regular job duties. Examples include nurses who:

- Provided advice or support to nurse colleagues as they learned to use new systems or tools.
- Consoled a parent of a grieving child.
- Consoled coworkers after a patient death.

Feeling appreciated

Feeling appreciated refers to receiving praise or compliments for a job well. These events were among the most frequently reported and included receiving recognition from a wide range of other people including patients, patients’ families, and nurses’ coworkers. Examples include:

- Being thanked by a patient for the care the nurse provided.
- Having a patient specifically request that nurse.
- Having a patient tell the nurse she was glad to see the nurse back at work after time off.

Negative Events

Table 14. Content analysis of nurses’ most negative work experiences.

Negative Events	
Demands	Conflicts
Work Role Demands	Conflict with Coworkers
Difficult Patients/Families	Conflict with Physicians
Resource Constraints	Conflict with other Hospital Staff
Staffing Demands	

The negative events also fit our general model of workplace events, but with four categories of demands and three forms of conflicts (Table 14). All three forms of conflicts are negative events involving interpersonal disputes with coworkers. However, the kinds of conflicts differ considerably depending on the nature of the nurse’s relationship with the other person (e.g., coworkers vs. physicians vs. other staff). The work demands represent four broad categories of demanding workplace events, including general work role demands, difficult patients/families, resource constraints and staffing demands.

Work role demands

Work role demands are the frustrations nurses face as they carry out their job duties. At a theoretical level, four common role-related stressors are low control (when decisions are made or policies implemented without considering the nurse's perspective), role ambiguity (having insufficient information to successfully carry out one's job expectations), role overload (having too many demands), and role conflict (conflicting expectations between two roles, such as between work and family, or within one role, such as conflicting expectations of a nurse manager and a physician or conflicts between two of one's own job assignments). Finally, although general occupational health research rarely focuses on these issues, ethical/value conflicts often occur in health care settings. Specific examples of work-role conflicts include:

- Struggling to meet multiple conflicting demands from patients, families, and computer charting.
- Feeling unprepared to deal with a patient with particular acuity levels.
- Having to fill a precept role when the nurse felt the charge nurse could not handle unit demands
- Managing the conflict between caring for a dying patient (who was an organ donor) and keeping the patient's organs viable for donation.
- Facing major organizational changes (e.g., structural changes, policy changes) announced with little prior warning or preparation and/or little communication and coordination between affected units.
- Dealing with unexpected events during patients' medical care.
- Managing mistakes made by other staff members.
- Floating back and forth between units and winding up with the "difficult" patients.
- Working with new nurses who struggle to perform their job effectively.
- Facing ethical conflicts in the course of treating patients.

Difficult patients/families

This category includes several forms of negative interactions with patients and their families, including confrontations where nurses are blamed for negative medical outcomes, nurses being treated as general service providers rather than medical professionals, and verbal abuse from family members. Examples include:

- Experiencing abuse or mistreatment from patients or family members.
- Having patients whose current health status makes them difficult to care for, such as elderly patients with serious cognitive or physical deficits.
- Being asked to perform non-nursing tasks from patients such as purchasing food for the patient's friends.
- Witnessing threats or abuse of coworkers by patients or their families.

Resource constraints

Resource constraints limit a nurses' ability to perform their jobs. In this category, we emphasize technical issues, such as challenges related to the adoption of new computer systems, insufficient space, poor communication systems, and gaps in material resources. Staffing demands represent a human resource constraint that we treat as a separate category below. Examples of resource constraints include:

- Facing last minute changes to one's schedule without appropriate notification.
- Having protective devices that do not work effectively or are difficult to use.
- Contending with environmental constraints, such as carpeted hallways that make it difficult to move patients.
- Missing important supplies, such as a particular medication needed to treat crashing patients.
- Lacking sufficient rooms for patients.
- Facing technological challenges, such as computer systems failing to work or having to learn new systems while performing one's regular duties.
- Dealing with failing equipment, such as having a piece of equipment stop working during a surgery.

Staffing demands

Staffing demands concerned negative events related to insufficient staffing, an improper staff mix, transfers, etc. Charge nurses also face additional challenges having to respond to staffing challenges. Staffing demands represent their own category of challenges, but it is important to note that staffing issues come into play for other concerns as well. For example, nurses who described challenges with computerized charting systems frequently mentioned the problem of trying to learn the systems while still having to maintain their regular patient load. Examples of staffing demands include:

- Responding to insufficient staffing as a charge nurse, such as beginning a shift needing twice as many nurses as they have scheduled to work or having new admissions or changes in patients' status increase work loads unexpectedly..
- Being overstaffed because of poor record keeping and having to shift patient loads accordingly.
- Having staffing plans that do not consider patient acuity.
- Having unexpected absences and receiving supplemental help from staff who could not perform important work functions.
- Having the right number of staff but not having personnel who are appropriately trained to respond to the unit's challenges.

Coworker conflict

Nurses reported a wide range of interpersonal conflicts with their coworkers. These included verbal altercations and verbal abuse, disagreements about treatments, concerns about appropriate behavior at work, and personal disagreements that occur at work. Examples include:

- Being wrongly accused of medical errors by nurses on other shifts.
- Being bothered by nurses who use the internet for personal reasons at work.
- Working with ineffective coworkers.
- Having personal disputes with coworkers.

Conflicts with physicians.

Conflicts with physicians frequently involve disputes about proper treatment, following safe procedures, etc. These disputes involve a status differential between the participants that can make these conflicts particularly difficult to respond to effectively. In some cases, these may not involve overt confrontations but rather, involve nurses perceiving an inappropriate situation at work. Examples include:

- Working with physicians who mishandle sharps or body fluids, placing the nurse at risk or leaving the nurse to have to clean up after the physician.
- Working with physicians who lack sufficient experience to respond to unit demands or who do not consistently follow standard treatment procedures.
- Working with physicians who are disrespectful or dismissive of the nurses or fail to consider the nurses' other staffing demands. These incidents were particularly stressful when they led to negative patient outcomes or embarrassed the nurse in front of a patient.
- Disagreeing with doctors over the course of treatment for a patient such as feeling the patient needed more help with pain management than the physician provided.

Conflict with other hospital staff

We defined this category as interpersonal conflicts with anyone other than a nurse colleague or physician. Several events involved conflict across departments.

- Experiencing physical or verbal abuse from other staff members.
- Having support staff members who perform the bare minimum duties when other people clearly need help.
- Dealing with conflicts with nurses in other departments.
- Having support staff behave unprofessionally at work or who let their personal lives interfere with their work in inappropriate ways.
- Having conflicts with staff scheduler because of fairness issues in how schedules are made.

Aim 1 Conclusions

Our basic goal in Aim 1 was descriptive. We proposed a simple but comprehensive model of nurses work experiences and then conducted qualitative and quantitative studies that fill in many descriptive details related to the model. In our opinion our general model provides a useful way to talk about nurses' work experiences in simple terms that people without advanced medical training can understand. However both sets of analyses demonstrate the drawbacks of a simple model, as there was considerable variability in the extent to which nurses experienced events within the same category, and as the individual descriptions of events show, simple broad category labels may not be useful for gaining an in-depth understanding of particular problems, situations, or contexts.

One important note concerning the categories of events is that although we drew additional distinctions between events, such as between staffing demands and interpersonal conflict, it is important to remember that these are conceptual distinctions, and any event is unlikely to easily fit into one and only one category. For example, many incidents contain multiple elements and could be viewed as fitting into several of our categories. For example, one nurse described an event that focused on performance constraints related to technical demands, and interpersonal conflict stimulated by people's frustration with the technical problems. Other nurses described conflicts with coworkers or patients that might be serious but manageable under normal circumstances but that quickly spiral out of control when units lack sufficient staff to respond appropriately.

We end this section on a positive note. A great deal of attention has rightfully been given to nurses' negative experiences. Psychologists have only recently begun to carefully study the nature of positive experiences in the workplace. The analyses we conducted relative to the positive events are particularly informative in this regard. It is important to note that the positive event descriptions have some of the same measurement concerns as the negative events. However, the analyses reported herein should serve as a useful starting point for stimulating subsequent research in this area. Two important questions about any of these events are (a) what are the consequences of experiencing certain kinds of events? And, (b) what, if anything, can hospitals do to increase the occurrence of positive events and reduce the occurrence of negative events. We address these issues below in our discussion of research conducted to address Aims 2 and 3.

Results for Aim 2: Testing the Oregon Nurse Retention Model

Our second aim concerned testing the Oregon Nurse Retention Model (ONRM) described in Figure 1. As described above, the ONRM links positive and negative work experiences to turnover outcomes through positive and negative work reactions, desire to remain with the organization, and perceived costs of leaving. We also proposed that the relationships between the model components may be influenced by individual differences and the organizational context. Therefore, the analyses we conducted to address Aim 2 investigate whether events influence turnover outcomes through the pathways hypothesized in the model and whether the core components of the ONRM are influenced by either individual differences or the organizational context.

Measure Selection

The first step in the analysis was choosing the measures that pertained to each component of the model. Appendix B provides descriptions of the measures including basic reliability data. Copies of all measures are available from the first author.

We measured retention outcomes with measures of turnover intentions and job search behavior. The turnover intentions measures asked participants to what extent that had considered leaving their job (*organizational turnover intentions*) or the profession of nursing. The organizational context measures included assessments of perceived organizational support, perceived social support from physicians, coworkers, and (*organizational turnover intentions*). We also asked several questions pertaining to participants' *job search behavior* – whether they had actively engaged in any recent job search efforts.

To measure the turnover pathways, we relied on four measures of organizational commitment, as described earlier. We included a measure of *affective organizational commitment* to capture the desire to remain a member of the organization and a measure of *affective occupational commitment* to capture the desire to remain a member of the nursing profession. Then, to capture the perceived costs of leaving, we used measures of *continuance organizational commitment* and *continuance occupational commitment*.

We used measures of *engagement* and *burnout* to capture nurses work reactions. The engagement measure includes items referring to vigor, dedication,

and absorption at work. The burnout measure captures feelings of depleted cognitive, physical, and emotional resources.

Aim 1 described the development of the measures of nurses' work experiences. To briefly review, we wrote 100 items capturing different kinds of work experiences and asked judges to sort those into *successes*, *supports*, *demands*, and *conflicts*. We retained the 86 items that at least 6 of our 7 judges sorted into the same category (Appendix C shows the results of this sorting process).

We also included measures of individual differences and the organizational context. The individual differences measures included *education*⁸ (defined as the highest educational degree the nurse had completed), *tenure* (defined as the number of years the nurse had worked as a nurse), and two embeddedness measures that assessed *affective community commitment* and *continuance community commitment*. The organizational context measures included assessments of perceived organizational support, perceived social support from physicians, coworkers, and managers, and measures of three forms of control at work: *work schedule control*, *decision involvement*, and *work method control*.

The large list of variables created a very complex model with many possible relationships to be tested. Therefore, we broke the model testing process into three phases. First, we tested the core ONRM relationships implied by the model. This involved testing the hypotheses that positive and negative work experiences would lead to burnout and engagement, that burnout and engagement would lead to organizational commitment, and organizational commitment would lead to turnover intentions and job search behavior. Second, we tested several possible effects of the personal characteristics and organizational context variables on the core ONRM pathways in a series of separate analyses. Third, we explored two additional research questions that were raised in the introduction above, but not specifically discussed as part of this aim. One question involved whether definite turnover plans or conditional turnover plans would influence the relationship between work experiences and retention. The other concerned the idea of turnover shocks – that is, investigating whether any particular kinds of events would lead to measurable changes in the retention outcomes.

⁸ One limitation to our education measure is that nurse research often focuses on the highest degree obtained in nursing. Our measure focused on the highest degree obtained without regard to whether the degree was in nursing.

Testing the Core ONRM Relationships

The first set of tests concerned the core ONRM components: the hypothesized relationships between work events, work reactions, turnover pathways, and turnover outcomes. We used structural equation modeling (SEM) to test these relationships. SEM resembles correlational analyses except that it involves simultaneous tests of a full system of relationships. SEM has several advantages over correlational analyses, including the ability to consider effects of measurement error and the ability to consider how third variables might affect a particular relationship of interest. As such SEM provides a much stronger test of the hypothesized ONRM relationships.

We investigated the relationships between the events measures gathered at Wave 1 and the other model components gathered at Wave 2. Thus, correlations with the events measures suggest that exposure to events at Wave 1 was related to retention pathways and outcomes approximately 6 months later. As an added measure to strengthen our confidence in the causal relationships, we controlled for all four forms of organizational commitment, the two forms of turnover intentions, and job search behavior gathered at Wave 1.⁹ Thus, the relationships provide relatively strong indications of causal connections between the experience of positive and negative work events and subsequent retention outcomes.

There are three components to SEM analyses. First, the analyses produce a series of overall model fit indices that show the general correspondence between the hypothesized model and the observed data used to test the model. We relied on three commonly used model fit indices – the Comparative Fit Index (*CFI*), the Root Mean Square Error of Approximation (*RMSEA*) and the Standardized Root Mean Square Residual (*SRMR*). Common criteria for these indices are .95 or greater for the *CFI*, .08 or lower for the *RMSEA*, and .06 or lower for the *SRMR*.¹⁰ Models that meet these criteria are said to have good overall model fit. The initial model met the fit criteria for the *RMSEA* (.07) but did not for the *CFI* (.89) and *SRMR* (.08).

Next, we examined the modification indices provided by the SEM analyses. These indices show what changes to the model would lead to improvements in overall model fit. Based on these indices, we added additional paths to the model. Figure 3 shows this final model, which obtained good overall model fit for the *CFI* (.95) and *RMSEA* (.05) and acceptable fit on the *SRMR* (.07).

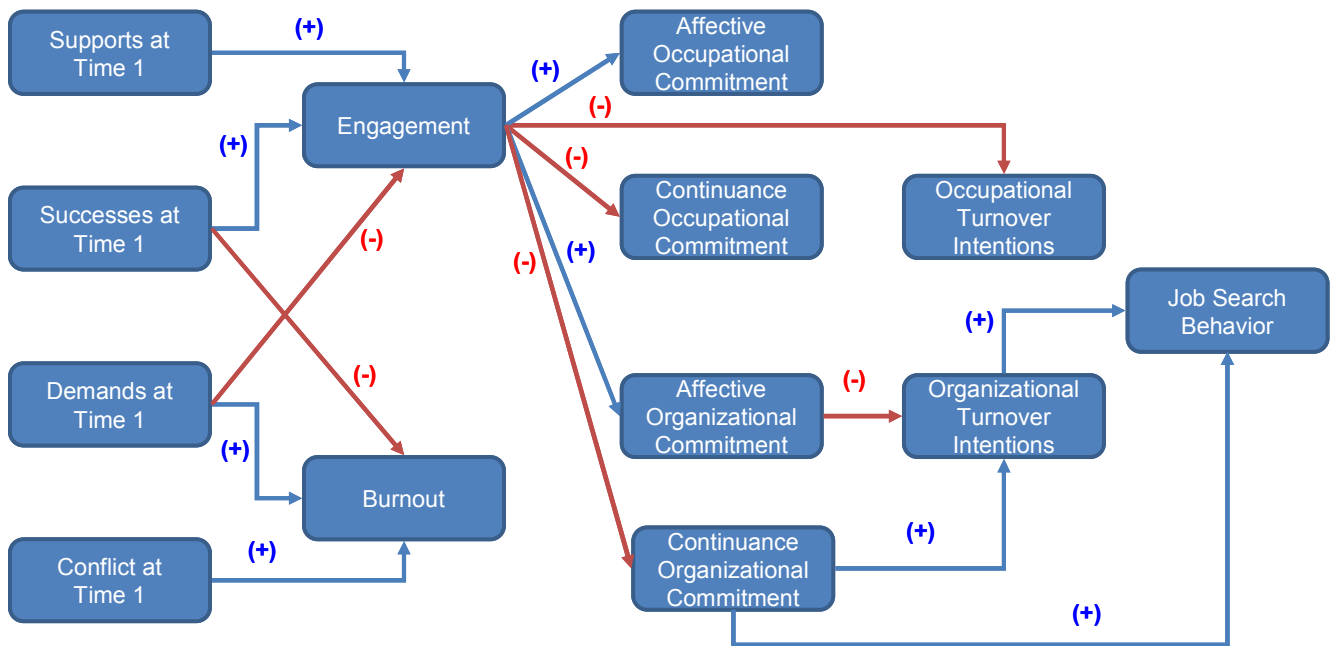
The final step was to examine the direction and statistical significance of each path in the model. Figure 3 also shows the results of these analyses. We have omitted the details of the statistical output to keep the presentation straightforward, and simply used *blue paths to denote significant positive relationships and red paths to denote significant negative relationships*. As Figure 3 shows, we obtained fairly strong support for the expected relationships between work experiences, burnout, and engagement. Both types of positive work experiences were associated with higher engagement; both types of negative work experiences were associated with higher burnout. Interestingly, nurses who reported more successes not only reported higher engagement, they also reported lower burnout. Similarly, nurses who reported higher demands reported both higher burnout and lower engagement.

Regarding the retention pathways, engagement was related to all four forms of commitment in the expected directions, but burnout was not related to any of the forms of commitment. Regarding relationships with turnover outcomes, engagement was associated with lower occupational turnover intentions and higher affective commitment was associated with lower organizational turnover intentions. Further higher continuance organizational commitment was associated with higher organizational turnover intentions and organizational turnover intentions were associated with higher job search behavior. Taken as a whole, these findings provided strong support for some components of our model and less support for others. With job search behavior as the ultimate outcome, our findings suggest that successes, supports, and demands predict employee engagement; employee engagement predicts affective and continuance organizational commitment, and both forms of organizational commitment influence job search behavior either directly or through their influences on turnover intentions.

⁹ To control for these variables in the SEM analyses we added each of the Wave 1 commitment and retention measures and specified paths linking each Wave 1 measure with its respective Wave 2 measure. We omitted these relationships from the figure below to keep the figure clear and focused on our core hypotheses. The complete results of these analyses are available from the first author.

¹⁰ Hu and Bentler (1999) provide a useful discussion of these fit indices, as well as the rationale for the recommended criteria for good model fit.

Figure 3. Final ONRP Model Showing Significant Structural Paths



Note. All measures gathered at Time 2 unless noted. Analyses control for Time 1 commitment, turnover intentions, and job search behavior. Blue arrows denote positive relationships, while red arrows denote negative relationships. $CFI = .95$, $RMSEA = .05$, $SRMR = .07$.

Effects of Individual Differences and Organizational Context

To determine the effects of the individual difference and organizational context variables, we conducted a series multiple regression analyses predicting each ONRM component from the set of individual difference and context variables.¹¹ Multiple regression analyses calculate the relationship between a set of predictor variables and an outcome variable. This relationship is called a multiple correlation; the *squared multiple correlation* or *multiple R squared (R^2)* indicates the total amount of variance explained in the outcome variable by the set of predictor variables. Multiple regression analyses generate a set of standardized regression weights that indicate the relative contribution of each predictor to the outcome. Thus, researchers use multiple regression analyses to investigate which predictor variables explain the most variance in an outcome.¹² Tables 15-18 show the results of these analyses for each outcome. Significant relationships are shown in bold in each table. We organize our discussion by each predictor, discussing all of the findings for each one in turn.

Occupational Tenure. The only significant effects for occupational tenure were a negative relationship between tenure and burnout and a positive relationship between tenure and continuance organizational commitment. These findings indicate that among the participating nurses, those who had worked longer reported *lower* levels of burnout and reported higher perceived costs associated with leaving the organization. The relationship between continuance commitment and tenure is consistent with our expectations; it shows that the longer nurses work in a position, the higher the perceived costs of leaving. The burnout findings were somewhat surprising. They may indicate that the older nurses are more resilient than their younger counterparts and have learned to adapt to the demands of their work.

¹¹ We also conducted a large set of hierarchical moderated multiple regression analyses to investigate whether the individual differences and/or organizational context variables changed any of the relationships among any of the core ONRP components. We found a small number of significant effects, but they were generally small enough in size and infrequent enough that we chose not to report them.

¹² The positive/negative sign of the regression weights indicates the direction of the relationship with each predictor. A positive regression weight indicates that higher scores on the predictor are associated with higher scores on the outcome. A negative regression weight indicates that higher scores on the predictor are associated with lower scores on the outcome.

Education Level. We found no significant effects of education level. This means that none of the ONRM model components were associated with the nurses' highest degree obtained.

Affective Community Commitment. We found several effects for affective community commitment. Nurses who felt more "bonded" to their communities reported higher engagement, and affective occupational and organizational commitment. They also perceived lower continuance occupational and organizational commitment. Thus, nurses who feel strongly attached to their communities report stronger involvement in their work and stronger affective ties to their organization/occupation. The findings for continuance commitment are somewhat surprising; nurses with strong community ties appear to feel less "stuck" in their current positions.

Continuance Community Commitment. The only significant relationships for continuance community commitment were for continuance organizational and occupational commitment. These findings reveal that nurses who report high costs of leaving their community also report high costs of leaving their organization.

Decision Involvement. Although decision involvement was frequently mentioned as a potential problem when it was low and a potential solution to other problems, we were surprised to find that it only significantly predicted supports and was not related to any other core component of the the ONRM model. This finding suggests that nurses who report higher decision involvement at work also report more experiences where coworkers provided them with needed support. Such findings suggest that decision involvement has indirect benefits on retention outcomes through changes in the nature of nurses' work experiences.

Method Control. Method control refers to the amount of latitude nurses have in choosing the methods they use in accomplishing their work. Higher method control was associated with lower reports of work demands, but not associated with any other model component. The significant finding with work demands suggests that when nurses have greater control and latitude over their work related methods they are less likely to experience demanding negative events at work, likely because they can take more steps to avoid them.

Work Schedule Control. Work schedule control refers to the amount of influence nurses feel they have over their work schedules. Interestingly, work schedule control was negatively associated with both positive and negative work experiences. Nurses who reported higher work schedule control reported lower demands and conflicts, but also fewer successes. Work schedule control also was negatively associated with job search behavior, indicating that nurses who felt they had more influence over their work schedule were less likely to be actively engaged in a job search. Aside from the curious effects related to successes, which require more research attention to explain, these findings suggest the general benefits of work schedule control for nurses.

Perceived Organizational Support. POS was the most important organizational context factor as it was related to several components of the ONRM. First, POS was negatively related to work demands; nurses who reported more demanding events at work also reported lower POS. POS theory suggests that demands influence POS, such that workers who have more negative experiences at work interpret those experiences as indicative of their organization's general concern about their well being. POS also was positively associated with engagement and negatively associated with burnout. Thus, when nurses believe that their organization cares about them and values their contributions, they are more likely to experience positive motivational states such as engagement, and less likely to develop symptoms of burnout. POS also was negatively associated with continuance occupational commitment and positively associated with affective organizational commitment, showing that nurses who feel valued by their organization develop stronger emotional ties to the organization and appear less likely to feel stuck in their current position.

Perceived Physician Support. Social support from physicians was associated with some of the positive and negative work experiences. Not surprisingly, nurses who reported higher support from physicians also reported more supportive work experiences at work and lower levels of conflict at work. These findings suggest the important role physicians play in nurses' work experiences.

Perceived Coworker Support. We found fewer effects for coworker or manager support than we were expecting. Regarding the work experiences, coworker support was associated with more supportive experiences and less conflict-related experiences. These findings are not surprising given the similarity of the experience and perceptual measures, but do reaffirm that coworkers play an important role in the social

aspects of work experiences. One other finding for coworker support was that nurses who reported coworker support also reported higher affective occupational commitment. Nurses who have more positive relationships with their colleagues also are more committed to the profession of nursing.

Perceived Manager Support. We found fewer effects with perceived manager support than we were expecting. In fact, the only significant correlate of manager support was for reports of conflict-related experiences. As with the other sources of support, these findings are not surprising as they suggest that nurses who have more conflicts at work perceive less support from the people who are, in some cases, responsible for those conflicts.

Table 15. Organizational and individual predictors of work experiences.

Predictors	Work Experiences			
	Successes	Supports	Demands	Conflicts
Individual differences (β)				
Occupational Tenure	-.07	-.01	-.09	.06
Education Level	-.02	-.02	-.06	-.06
Affective Community Commitment	.11	.07	-.01	-.00
Continuance Community Commitment	.02	-.06	.09	-.04
Occupational context (β)				
Decision Involvement	.02	.14*	-.09	.01
Method Control	.09	.05	-.14**	-.08
Work Schedule Control	-.17**	.01	-.13**	-.12*
Perceived Organizational Support	-.07	.05	-.28**	-.08
Perceived Physician Support	.07	.13**	-.02	-.24**
Perceived Coworker Support	.09	.39**	-.06	-.22**
Perceived Manager Support	-.01	.04	.02	-.24**
Variance Explained (R^2)	.06*	.38**	.29**	.47**

Note. All Predictors are measured at Wave 1. All outcomes are measured at Wave 2. β = standardized regression weight.

* $p < .01$; ** $p < .05$.

Table 16. Organizational and individual predictors of work reactions.

Predictors	Work Reactions	
	Burnout	Engagement
Individual differences (β)		
Occupational Tenure	-.13*	.08
Education Level	-.02	-.03
Affective Community Commitment	-.02	.18**
Continuance Community Commitment	.08	-.09
Occupational context (β)		
Decision Involvement	.09	-.02
Method Control	-.11	.12
Work Schedule Control	.03	-.05
Perceived Organizational Support	-.29**	.21**
Perceived Physician Support	-.07	-.01
Perceived Coworker Support	-.07	.10
Perceived Manager Support	-.01	-.01
Variance Explained (R^2)	.16**	.15**

Note. All Predictors are measured at Wave 1. All outcomes are measured at Wave 2. β = standardized regression weight.

* $p < .01$; ** $p < .05$

Table 17. Organizational and individual predictors of commitment.

Predictors	Occupational and Organizational Commitment			
	Affective Occupational Commitment	Continuance Occupational Commitment	Affective Organizational Commitment	Continuance Organizational Commitment
Individual differences (β)				
Occupational Tenure	.02	.09	.00	.11*
Education Level	-.09	-.08	-.08	-.02
Affective Community Commitment	.13*	-.17**	.17**	-.12*
Continuance Community Commitment	.02	.31**	.03	.34**
Occupational context (β)				
Decision Involvement	.12	.12	.05	.04
Method Control	.05	-.12	-.10	-.04
Work Schedule Control	.01	-.05	.01	-.07
Perceived Organizational Support	-.03	-.15*	.41**	-.12
Perceived Physician Support	.08	-.02	-.02	.02
Perceived Coworker Support	.20**	.05	.11	.01
Perceived Manager Support	-.09	.05	.04	.04
Variance Explained (R^2)	.12**	.17**	.29**	.16**

Note. All Predictors are measured at Wave 1. All outcomes are measured at Wave 2. β = standardized regression weight
 * $p < .01$; ** $p < .05$

Table 18. Organizational and individual predictors of retention outcomes.

Predictors	Retention Outcomes		
	Occupational Turnover Intentions	Organizational Turnover Intentions	Job Search Behavior
Individual differences (β)			
Occupational Tenure	.04	-.09	-.11
Education Level	-.01	.01	-.02
Affective Community Commitment	-.07	-.02	-.04
Continuance Community Commitment	.04	.00	-.04
Occupational context (β)			
Decision Involvement	.02	.04	.00
Method Control	-.12	-.09	.04
Work Schedule Control	-.03	-.04	-.20**
Perceived Organizational Support	-.08	-.22**	-.11
Perceived Physician Support	-.10	-.01	-.02
Perceived Coworker Support	-.02	-.06	-.07
Perceived Manager Support	-.12	-.11	-.02
Variance Explained (R^2)	.11**	.16**	.11**

Note. All Predictors are measured at Wave 1. All outcomes are measured at Wave 2. β = standardized regression weight.

* $p < .01$; ** $p < .05$.

Aim 2 Conclusions

The general goal of Aim 2 was to test the Oregon Nurse Retention Model. The first component of the model concerned the relationship between work experiences, burnout and engagement. We drew a distinction between events directly associated with performing one's core job tasks and events associated with interactions with coworkers. The model testing revealed that these different kinds of events obtained different patterns of associations with burnout and engagement. For example, the positive and negative social events were each associated with their respective positive and negative work outcomes. Thus, nurses who reported more experiences of supports also reported higher levels of engagement while nurses who reported more experiences of conflict reported higher levels of burnout. However, we noted a different pattern for the task-related events – both positive and negative task-related events predicted positive and negative outcomes. Thus, nurses who reported experiencing high levels of demands also reported lower engagement and higher burnout while nurses who reported higher levels of successes reported higher engagement and lower burnout.

Two important conclusions from these findings are that positive and negative events uniquely contribute to occupational health outcomes and that different kinds of positive and negative events show distinct patterns of relationships with these outcomes. These findings show that health care employers can enhance occupational health outcomes both through policies that address negative aspects of nurses' work experiences and through efforts to increase the positive aspects of nursing work experience.

The second component of the ONRP model concerned the effects of burnout and engagement on the retention pathways. These pathways concerned nurses' attachment to both their occupation. The central finding from these analyses was that engagement appeared to be more important for building commitment than was burnout. Specifically, nurses who reported higher levels of engagement also reported a stronger emotional attachment to their current employer and to the field of nursing. These nurses also reported less of a sense of high costs of leaving their current employer or their occupation. Although we did not predict this in our initial model, we also found that engagement exerted direct effects on occupational turnover intentions.

The positive relationships of engagement with both forms of affective commitment and occupational turnover intentions highlight the potential benefits of building employee engagement. Highly engaged nurses are more likely to be strongly attached to both their employer and to their occupation. These nurses also are less likely to have intentions to leave the nursing field. These findings show that building engagement may be a critical component of nurse retention strategies. However, the links to affective commitment suggest many other potential benefits of building nurse engagement. For example, many studies have shown that affective commitment is associated with higher levels of job performance and better occupational health.

The engagement – continuance commitment findings indicate that highly engaged nurses reported less of a sense of high costs of leaving their current employer or the field of nursing. These findings could be viewed as counterintuitive. However, one interpretation of the continuance commitment findings is that they reflect a feeling of *needing* to stay in one's current position. Thus, they may reflect nurses' sense that they stay in their current job because they are "stuck" in the position/organization. This would be consistent with some findings that view continuance commitment as a "bad" form of commitment because it reflects less voluntary attachments to the organization/occupation.

The findings concerning the commitment – retention relationships indicated that, with regard to turnover/retention, organizational commitment appears to be more important than occupational commitment. Specifically, both forms of organizational commitment predicted organizational turnover intentions and continuance organizational commitment also was directly related to job search behavior. In contrast, neither form of occupational commitment was related to occupational turnover intentions. One interpretation of these findings is that nurses' decisions to leave the field of nursing appear to be influenced by different processes than their decisions to leave their current organizations. Our model provided a better account of the organization-focused turnover processes than of the occupation-focused turnover processes. This raises some interesting issues that can be examined in further studies focused on occupation-focused turnover processes. One important issue may be to carefully distinguish between early career nurses decisions to leave their occupation and more senior nurses' decisions to retire.

The final component of the ONRP model-testing research concerned the proposed effects of individual differences and the organizational context on the core retention processes. We investigated how three individual difference and three organizational context factors influenced the four stages of the ONRP model. Our findings revealed several general and specific conclusions about the retention model. First, we noted that as a set, the individual differences and organizational context factors explained anywhere from 6% (for successes) to 47% (for conflicts) of the variation in the different model components. However, with the exception of the successes score, the individual differences and context factors explained at least 10% of the variance in every variable in the ONRP model. There are at least two general interpretations of these findings.

First, because the findings are entirely based on self-reported survey data, the findings may in part be influenced by common-method biases. That is, the strong relationships could, in part, be because the predictors and the outcomes were assessed using the same methodology. This issue is most likely to be a contributing factor for the results linking the individual differences and the organizational context factors to the work experience measures because all of these measures were assessed at the same time point using the same basic methodology. Moreover, some of the organizational context factors are very similar in content to the work events (e.g., supportive work events and perceptions of support). However, there are at least three reasons that the general pattern of findings for the rest of the model tests does not support an interpretation that the results are solely attributable to the method used. First, the predictor and outcome measures were obtained 6 months apart, suggesting that a general mood state or some other similar explanation could not account for the relationships. Second, many of the relationships we tested were not significant, which suggests that the results tend to be more linked to specific predictor-outcome relationships than to general findings across all self-reported items. Third, for the most part, we either used scales from well-validated measures in the literature or for measures carefully developed to apply to the nursing context, suggesting that any issues of methodological quality are both unlikely to have occurred and unlikely to account for our results.

The most general substantive interpretation of the findings is that, consistent with our initial proposal, both characteristics of nurses and characteristics of the nurses' organizational context contribute to retention-related processes. Our findings highlight the idea that

these factors contribute to retention processes through four pathways: (1) by increasing/decreasing the likelihood of certain events that are associated with retention, (2) by contributing to nurses' burnout or engagement, (3) by influencing nurses' organizational commitment, or (4) by directly influencing turnover intentions and/or job search behavior. As we noted earlier, we also examined whether the individual and organizational context factors influenced the relationships between any of the model components but we found little evidence of these effects.

The results also indicate diverse findings across combinations of predictors and outcomes. Simply put, there was no single individual difference or organizational context factor that appeared to be important for all components of the model. With the exception of education, all of the individual differences and organizational context factors contributed to at least some degree, making it difficult to prioritize among them. As a set though, the organizational context factors highlight the importance of organizational support, support from coworkers, and control/empowerment as critical factors in the retention process. There were fewer relationships for the individual differences, but the results still supported the idea that both tenure and community commitment do contribute to the retention process.

Education level was the only factor that did not account for any variance in any of the model components. This may suggest that education levels are not important, but as we noted above, one problem with our measure is that we were unable to separate the nurses' highest overall education from their highest degree specifically in nursing. Thus, we would urge caution when drawing conclusions about this measure.

Taken as a whole then, the results illustrate the utility of the ONRP model as a guide for nurse retention research. The central theme of our findings was that work experiences influence turnover outcomes through their relationship with engagement and subsequently with organizational commitment. Engagement appeared to be more important than burnout as a reaction to work events and organizational commitment appeared to be more important than occupational commitment as an antecedent to turnover. These findings highlight the importance of engagement and organizational commitment for turnover, but it is also important to remember that burnout and occupational commitment are associated with other outcomes that also are worthy of attention by both health care management and by occupational health researchers.

Results for Aim 3: Nurses' Perspectives on Occupational Health Interventions

The third aim of our research concerned the need to identify interventions to address nurses' retention-related concerns. When the nurses wrote about their positive and most negative work experiences, we also asked them to indicate whether there was anything their organization could have done to help prevent the negative events or encourage the positive events. We analyzed these data using the same strategy as for Aim 1. Specifically, we conducted content analyses of the suggested interventions for the same set of 180 positive and 180 negative events. In each case, we reviewed the proposed interventions and grouped similar interventions together in categories.

Findings

Table 19 below shows the results of this coding process. Broad categories are shown in the left column, some specific examples are shown in the right column. We ultimately decided to group the positive and negative interventions together as a set, as many of the interventions for the positive events were similar to the interventions for the negative events. In the sections below, we provide some specific examples from nurses of their recommendations. Direct quotes are shown in italicized text.

Table 19. Nurses' proposed interventions.

Category	Examples
Do nothing	Good events: no changes are needed Bad events: nothing to be done other than to quit
Develop/enforce policies, laws, and rules	Define and respond to improper conduct Follow existing rules, policies, laws
Clarify role responsibilities	Performance evaluations with follow-up Increase accountability
Increase nurse participation	Participative decision making Increase voice
Improve communication systems and skills	Across shifts Across units/levels
Provide training/development	Interpersonal skills, communication skills Professional development programs
Improve staffing management	More staff; better staff mix Increased staff during changes
Remove performance constraints	Quality and quantity of equipment and supplies Computer technology issues
Reward good practices	Provide positive feedback Recognition programs
Promote the value of nursing	Encourage physicians to value nurses Increase awareness of nurses' contributions

Recommendation: Promote the value of nursing

The first category was not mentioned frequently, but could be viewed as a theme running through all of the suggested interventions. Nurses expressed a desire for policies and practices that would increase the perceived value of nurses and the field of nursing the eyes of other hospital staff. In essence, nurses report a desire for greater recognition of and appreciation of their contributions to health care.

Recommendation: Develop/enforce policies

Many nurses suggested the need for clear, consistent policies and/or implementation of policies with swift enforcement of the rules and consequences for individuals who deviate from them. Others noted that simply following existing laws, guidelines, and recommendations would be an important step. Examples include: providing appropriate security measures, developing zero tolerance policies, standardizing policies across units, developing policies regarding personal internet use at work, and refusal to tolerate poor performers, inappropriate behavior, or low professionalism.

Recommendation: Clarify role responsibilities

Some nurses expressed a desire for increased role clarity concerning what behaviors and tasks were part of the nurse's role, as opposed to others' responsibilities. Others recommended the need for regular performance evaluations to differentially reward high and low performers. Such evaluations would help hold people accountable by addressing poor performance. Nurses also discussed the need to address counterproductive behaviors such as employees withholding important information from RNs.

Recommendation: Increase Nurse Participation

Nurses expressed a desire for greater involvement in decision-making, including in the development of policies, equipment purchases, and hiring, as examples. They expressed a greater desire for self-governance and highlighted some of the pitfalls of top-down decision making systems that fail to involve nurses in decisions that affect them.

Recommendation: Improve Communication Systems and Skills

Nurses frequently mentioned communication issues as an important theme. Some referred to the need for generally improved communication in the organization; others mentioned specific problems such as communication across departments or specialties, between nurses, physicians, and managers or across shifts. Nurses also recommended improved communication skills, listening skills, and conflict resolution training to address these concerns. Another suggestion was to hire lab coordinators to assist nurse faculty with ordering supplies etc. Nurses also suggested that departments should work together to identify frustrations and solutions.

Recommendation: Provide training/development

Aside from communication training, participants also discussed several other possible training and development programs. These included both new programs and recommendations that some current successful programs be continued. Examples included training nurses to use newer technologies, encouraging staff to seek professional certifications and maintain CEU credits, training managers about how to create healthy work environments, provide cross-training opportunities for interested nurses, encouraging faculty to attend classes taught by peers, sending nurses to other hospitals to diversify their experiences, and continue with current successful efforts, such as orientation systems or diversity training.

Recommendation: Improve staffing management

One of the most common suggestions was to increase the number of nurses available at any given time. Of course, this makes sense given the issues that motivated our research. However, some nurses suggested other related solutions concerning the need for additional support staff, shortages in other departments, and the need to match the staffing mix with patient acuity. Still others discussed their desire for greater consistency in staffing, ensuring an appropriate mix of new and experienced nurses, matching inexperienced doctors with experienced nurses, and better management of on-call scheduling. Although we expected staffing-related solutions would be mentioned for negative events, they also were frequently mentioned in relation to positive events. For example, many nurses reported that better staffing would allow them to maintain high quality patient care

and allow nurses the time necessary to communicate effectively with patients and their families.

Recommendation: Remove Performance Constraints

The performance constraints solutions generally referred to improvements that could be made through resolving and/or managing information technology issues, ensuring that nurses have sufficient supplies to perform their work, and making sure that important equipment is available and in good working condition. Some also mentioned space issues, such as shortages of available beds and issues related to the physical condition of their work space. Finally, several nurses mentioned the need for their organization to obtain more nurse input prior to purchases of equipment and supplies so that such purchases are responsive to the needs of nurses and their patients.

Recommendation: Reward good practices

Nurses indicated that rewarding good behavior and practices was a crucial part of ensuring that positive events are repeated. This includes recognizing and rewarding nurses who exhibit helping behavior and providing positive feedback to those who perform well as well as rewarding teams that work effectively. Although reward programs may be large in scope, some nurses expressed their appreciation of some of the small ways their organization acknowledged their contributions from compliments for a job well-done to free meal tickets. Still others highlighted the need for emphasis on continuous improvement and quality care.

Recommendation: Do nothing

The last category of interventions was essentially to do nothing. Regarding the negative events, some nurses expressed a sense of fatalism: that there was nothing they could think of that could be done to change the situation, because of budget situations, lack of management support, or being unable to identify a response. These nurses felt their only options were to accept the situation or to seek a new position. For the positive events, some nurses confident that the events would occur again because they had great coworkers or leaders; other nurses were unsure what could be done to make the events more likely.

Aim 3 Conclusions

While nurses report many great things about their jobs, they also report many challenges along the way, and as we have shown here, can offer some concrete solutions that would improve their occupational health concerns. Although some nurses feel a great deal of frustration and occasionally hopelessness about problems in their workplaces, many participants provided useful steps that their organizations could take. Obviously not all of these solutions will apply equally well across all health care contexts, and some are more costly or difficult to implement than others. However, we hope that these findings provide further support for the need to address high priority concerns for nurses, such as staffing, resource constraints, improved communication, and employee development. Finally, as the nurses' recommendations show, it is important to keep in mind that health care organizations need to focus on ways to enhance some of the positive aspects of the nursing work environment, such as the rewarding nature of the work and being appreciated by one's colleagues. These positive steps should lead to better health and retention outcomes and most likely, will ultimately lead to better patient care.

