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Address of Applicant Organization – 620 Michigan Ave NE, Washington DC 20064

PI Civilian Work Contact Information

Duty Title	Director Performance Measurement
Employer	Health Resources Services Administration
Address	5600 Fishers Lane Rockville, MD 20857
Telephone	301-443-9256
Mobile Telephone	301-437-7871
E-mail Address	gzangaro@hrsa.gov

PI Home Contact Information

Address	[redacted]
Telephone	[redacted]
Mobile Telephone	[redacted]
E-mail Address	[redacted]

Signatures

PI Signature: *George A. Zangaro* Date: 3/25/13

Mentor Signature: N/A Date:

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14. ABSTRACT

Purpose: The purpose of this study was to survey Army, Navy and Air Force nurses between the ranks of 01 to 06 to explore factors influencing their decisions to remain on active duty. Design: A descriptive correlation design using an electronic survey was used to collect the data on nurse retention. Methods: A pilot study was conducted to test the instrument and ensure all wording was clearly understood by the participants. Upon completion of the pilot study, an electronic survey was administered to all Army, Navy and Air Force nurses serving on active duty. Sample: The total sample size for analysis purposes was 2,574 (Army = 996; Navy = 590; Air Force = 988). The overall response rate was 30%, which is acceptable for a study this size. The response rates for each service were as follows: Army 35%; Navy 22%; and Air Force 33%. Analysis: Statistical analysis was completed using descriptives and structural equation modeling. Findings: The most significant predictor of job satisfaction and intent to stay on active duty across all 3 services was promotional opportunity (positive relationship, the more promotional opportunities available the more satisfied and likely to stay). Relocation of families was also a significant predictor across all 3 services, the fewer times a family was relocated the more likely they are to stay in the military. Nurses were asking to be able to remain in one geographical area for longer periods of time provided this would not impact their promotional opportunity. Overall, deployments were not a significant factor in determining job satisfaction or intent to stay. Most service members were happy to deploy and saw this as part of their mission and patriotic duty. Additionally, single military members felt that they were expected to be more flexible with relocations and deployments. Implications for Military Nursing: Retention efforts need to be focused on ameliorating factors that are causing nurses to leave the military and identifying the specific needs for each of the services and among the junior and senior officers.

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Abstract

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Design: A descriptive correlation design using an electronic survey was used to collect the data on nurse retention.

Methods: A pilot study was conducted to test the instrument and ensure all wording was clearly understood by the participants. Upon completion of the pilot study, an electronic survey was administered to all Army, Navy and Air Force nurses serving on active duty.

Sample: The total sample size for analysis purposes was 2,574 (Army = 996; Navy = 590; Air Force = 988). The overall response rate was 30%, which is acceptable for a study this size. The response rates for each service were as follows: Army – 35%; Navy – 22%; and Air Force – 33%.

Analysis: Statistical analysis was completed using descriptives and structural equation modeling.

Findings: The most significant predictor of job satisfaction and intent to stay on active duty across all 3 services was promotional opportunity (positive relationship, the more promotional opportunities available the more satisfied and likely to stay). Relocation of families was also a significant predictor across all 3 services, the fewer times a family was relocated the more likely they are to stay in the military. Nurses were asking to be able to remain in one geographical area for longer periods of time provided this would not impact their promotional opportunity. Overall, deployments were not a significant factor in determining job satisfaction or intent to stay. Most service members were happy to deploy and saw this as part of their mission and patriotic duty. Additionally, single military members felt that they were expected to be more flexible with relocations and deployments.

Implications for Military Nursing: Retention efforts need to be focused on ameliorating factors that are causing nurses to leave the military and identifying the specific needs for each of the services and among the junior and senior officers.

TSNRP Research Priorities that Study or Project Addresses

Primary Priority

Force Health Protection:	☐ Fit and ready force ☐ Deploy with and care for the warrior ☐ Care for all entrusted to our care
Nursing Competencies and Practice:	☐ Patient outcomes ☐ Quality and safety ☐ Translate research into practice/evidence-based practice ☐ Clinical excellence ☐ Knowledge management ☐ Education and training
Leadership, Ethics, and Mentoring:	☐ Health policy ☒ Recruitment and retention ☐ Preparing tomorrow's leaders ☐ Care of the caregiver
Other:	☐

Progress towards Achievement of Specific Aims of the Study or Project

Findings related to each specific aim, research or study questions, and/or hypothesis:

This study surveyed Army, Navy and Air Force Nurses to explore factors influencing decisions to maintain their active duty status. The specific aims were to:

1. Explore the effect of structural (work), organizational (military) and life (demographic) factors on the job satisfaction of nurses.
2. Determine the relationship between job satisfaction and intent to stay.
3. Determine if structural models developed in aims 1 and 2 vary by different services (i.e., Army, Navy and Air Force) and are comparable ranks across services.

Analytical approach

The items in the survey were from established instruments as well as additional military specific measures. Based on the Price and Mueller model and the survey design, sets of items were designed to measure constructs related to work (e.g., autonomy, supervisor support). Other items on the survey reflect "military" and "family" constructs. The relationship among these constructs and the factors influencing the scores on these constructs were the major focus of the aims. Since there were multiple items representing each construct, structural equation modeling (SEM) was used. Structural equation models are multivariate – and multiequation – structural regression (SR) models. Unlike the more traditional multivariate linear model, the response variable in one regression equation may be a predictor in another equation (e.g., satisfaction is a predictor of intent to stay). Although the survey was a cross sectional assessment, the structural equations are meant to represent causal relationships among the variables in the model.

Another major advantage of structural equation modeling is the ability to develop psychometrically derived measures from multiple single items. This is particularly needed due to the large number of items and the potential for multicollinearity among items if they were to be used as individual predictors. Once measurement models are tested, the relationships between these measures can be simultaneously tested. Thus, the SEM analyses were developed and tested in two steps.

1. In the first step, CFA measurement models were developed based on preliminary confirmatory factor analyses of three constructs (work, military, and family).
2. Given acceptable measurement models, the structural regression models were tested in the second step. The model was trimmed by deleting non-significant paths and covariates were added based on the study conceptualization.

The total number of observations in the final data set was 2574, a large dataset for testing measurement models. Therefore, the Army data were used to develop the models and then invariance of the models were tested across the Navy and the Air Force (i.e., testing of model fit with other data). The Army observations were selected since that was the largest number of usable surveys.

Development of Measurement Models

After a description of the sample, the procedures for development of the measurement models are described. Only the final measurement models are presented. Table 1 illustrates the items of the final measurement constructs. Table 2 illustrates the original measurement models and the decisions that were made to delete, combine, or reconfigure constructs.

Procedures

Based on the survey items that were from the Price and Mueller model and the additional items that were added to reflect specific military relevant issues, measurement models were developed. Confirmatory factor analyses (CFA) were conducted to assess reliability of each item and construct validity (e.g., work, military and family) using Mplus version 6.1. Listwise deletion was applied. The robust maximum likelihood estimation method (MLM) was used (also known as Satorra-Bentler scaled chi square). Because items were ordered categorical variables with at least five categories, maximum likelihood with mean adjusted estimation was used. While the items were generally non-normal, most did not have severe non-normality (skew < 2, kurtosis <7). Skewness ranged from .015 to 1.456; Kurtosis ranged from .035 to 3.618 for each item. While a weighted least square with mean and variance adjusted (WLSMV in Mplus) would be the best estimation method when items are binary or ordered, WLSMV cannot easily handle multiple categories of each item when testing factorial invariance. Models using both estimation methods were tested and the results were found to be similar. Thus, items were treated as continuous variables and MLM was applied. In all models, the factor variances were set to one and all factor loadings were freely estimated.

Table 1. Summary of final measurement constructs

Variable	# of items	Questions	alpha
OUTCOMES			
Military job satisfaction (MJS)	3	Most days, I am enthusiastic about my service as a way of life. I am dissatisfied with my service way of life. I do not find enjoyment in my service way of life.	0.917
Intent to stay (ITS)	2	I plan to stay in the military as long as possible. I would be reluctant to leave the military.	0.793
WORK			
Autonomy	2	I have very little freedom to do what I want on my job. I am not able to act independently of my immediate supervisor in performing my job.	0.723
Communication	3	I receive all necessary information to perform my job efficiently. Command strategies are communicated to everyone at the command. My command fosters and encourages open and honest communication between management and self.	0.083
Distributive justice (Rewards?)	1	I am rewarded fairly for the amount of effort that I put in. (Money and recognition are examples of rewards.)	-
Job hazard	1	My job often exposes me to unhealthy conditions.	-
Routinization	1	I have the opportunity to different things in my present position	-
Resource adequacy	3	I have adequate equipment to perform my job. I have enough support services to perform my job. I have difficulty getting supplies I need to perform my duties.	0.736
Role conflict	3	I get conflicting job requests from different supervisors. My immediate supervisor and peers have very different ideas about how my job should be done. I get conflicting job requests from my immediate supervisor.	0.861
Social support-supervisor	3	My immediate supervisor can be relied upon when things get tough on my job. My immediate supervisor is willing to listen to my job-related problems. My immediate supervisor is helpful to me in getting my job done.	0.939
Social support-coworker	3	My co-workers can be relied upon when things get tough on my job. (Do not consider your immediate supervisor as a co-worker.) My co-workers are willing to listen to my job-related problems. (Do not consider your immediate supervisor your co-worker.) My co-workers are helpful to me in getting the job done.	0.926
Workload	2	I do not have enough time to get everything done on my job. My workload is too heavy on my job.	0.838
RN-MD relationship	3	Physicians and nurses have good working relationships.	0.944

Variable	# of items	Questions	alpha
		There is much teamwork between nurses and physicians. There is collaboration between nurses and physicians.	
MILITARY LIFE			
Deployment (Support for deploy?)	3	My command provides me with convenient resources to obtain a power of attorney in case of immediate deployment. When I arrived to my command, I was told which contingency platform I was assigned to. I have the required training to go on immediate deployments.	0.573
Professional growth	4	The Armed Services provides the opportunity for me to keep up with new developments related to my job. The Armed Services provides me the opportunity for self-improvement regarding my job. The Armed Services does not provide the opportunity for me to attend courses, which increase my job skills. I am offered training and professional development opportunities at my command.	0.857
Promotional opportunity	3	I have a good chance to get ahead in the military. I am in a dead-end job. I have the opportunity for advancement in the military.	0.872
Family-related relocation stress	2	Frequent rotations to other geographical locations places stress on my marriage. Frequent rotations to other geographical locations places stress on my family life.	0.895
Job opportunity	3	Frequent rotations to other geographical locations places stress on my family life. Given the state of the job market, finding a civilian job would be very difficult for me. There is at least one good civilian job that I could begin immediately if I were to leave the military.	0.774

Table 2. Summary of the development of the initial CFA models

Work Construct

item	Reliability (α)	Estimates	SE	STDYX Estimates	Residual variance	R^2	Decision
Auto1	0.655	0.374	0.041	0.344	0.881	0.119	Drop item
Auto2		0.847	0.033	0.807	0.349	0.651	
Auto3		0.763	0.039	0.719	0.483	0.517	
Auto4		0.558	0.042	0.416	0.827	0.173	Drop item
Comm1	0.83	0.761	0.03	0.729	0.468	0.532	
Comm2		0.89	0.027	0.796	0.366	0.634	
Comm3		0.987	0.029	0.831	0.309	0.691	
Comm4		0.628	0.034	0.627	0.607	0.393	drop-opposite of #1
DisJus1	0.87	0.659	0.032	0.561	0.685	0.315	Delete the factor
DisJus2		0.62	0.033	0.544	0.704	0.296	MI (1 &3):551.087
DisJus3		0.532	0.035	0.473	0.776	0.224	MI(#1&3): 159.006
DisJus4		1,041	0.025	0.922	0.15	0.85	MI(#4 &SSC):111.797
DisJus5		1.081	0.025	0.943	0.111	0.889	MI (#4 &5):301.657
DisJus6		0.541	0.035	0.523	0.727	0.273	
JHAZ1	0.695	0.723	0.042	0.613	0.624	0.376	Delete the factor
JHAZ2		0.913	0.042	0.783	0.387	0.613	
JHAZ3		0.574	0.031	0.632	0.6	0.4	
OPP1		0.622	0.033	0.769	0.409	0.591	Delete due to non-significant relationship with other factors
OPP2		0.683	0.031	0.848	0.281	0.719	
OPP3		0.594	0.036	0.505	0.745	0.255	
OPP4		0.553	0.037	0.569	0.676	0.324	
ResA1	0.745	0.513	0.035	0.542	0.707	0.293	delete item
ResA2		0.719	0.031	0.733	0.462	0.538	
ResA3		0.765	0.031	0.736	0.458	0.542	
ResA4		0.67	0.037	0.626	0.608	0.392	
RA1	0.612	0.369	0.027	0.562	0.685	0.315	Delete the factor
RA2		0.481	0.04	0.454	0.793	0.207	Highly correlated with role
RA3		0.789	0.033	0.832	0.308	0.692	conflict
RC1	0.861	0.895	0.03	0.784	0.385	0.615	
RC2		0.913	0.028	0.82	0.328	0.672	
RC3		0.908	0.03	0.869	0.245	0.755	
Rout1	0.82	0.76	0.029	0.817	0.333	0.667	two indicators - negative residual variance
Rout2		0.998	0.028	0.939	0.119	0.881	
Rout3		0.672	0.03	0.622	0.613	0.387	Drop item
SSS1	0.939	1.076	0.026	0.92	0.154	0.846	
SSS2		0.94	0.028	0.884	0.219	0.781	

item	Reliability (α)	Estimates	SE	STDYX Estimates	Residual variance	R^2	Decision
SSS3		1.067	0.025	0.952	0.094	0.906	
SSC1	0.926	0.842	0.027	0.937	0.121	0.879	
SSC2		0.706	0.028	0.841	0.292	0.708	
SSC3		0.769	0.028	0.902	0.186	0.814	
WGC1	0.602	0.58	0.034	0.629	0.604	0.396	Delete the factor
WGC2		0.637	0.042	0.547	0.7	0.3	Among factors, the factor was highly correlated with Support coworkers
WGC3		0.549	0.033	0.623	0.612	0.388	
WGC4		0.433	0.046	0.366	0.866	0.134	
WKL1	0.826	0.944	0.03	0.807	0.349	0.651	
WKL2		0.922	0.028	0.876	0.233	0.767	
WKL3		0.663	0.03	0.612	0.625	0.375	Drop item
WKL4		0.608	0.029	0.604	0.635	0.365	MI (#3&4):179.96
RNMD1	0.66	0.828	0.024	0.923	0.148	0.852	
RNMD2		0.904	0.022	0.955	0.089	0.911	
RNMD3		0.848	0.024	0.926	0.143	0.857	
RNMD4		-0.143	0.037	-0.148	0.978	0.022	Drop item

Military construct

item	Reliability (α)	Estimates	SE	STDYX Estimates	Residual variance	R^2	Decision
Deploy1	0.573	0.567	0.037	0.617	0.619	0.381	Not good enough to be included in the model and need to modify but they remain since this factor might be important
Deploy2		0.718	0.046	0.574	0.67	0.33	
Deploy3		0.764	0.047	0.605	0.633	0.367	
JPref1	0.446	0.245	0.038	0.232	0.946	0.054	Delete the factor d/t low reliability
JPref2		0.902	0.053	0.883	0.221	0.779	
JPref3		0.158	0.037	0.197	0.961	0.039	
JPref4		0.613	0.046	0.541	0.708	0.292	Drop - opposite of item 2
ProG1	0.857	0.837	0.027	0.854	0.271	0.729	
ProG2		0.875	0.029	0.918	0.157	0.843	
ProG3		0.765	0.038	0.672	0.548	0.452	
ProG4		0.759	0.034	0.695	0.518	0.482	
PromO1	0.872	0.847	0.031	0.921	0.151	0.849	
PromO2		0.683	0.037	0.707	0.5	0.5	
PromO3		0.728	0.032	0.867	0.248	0.752	
RELO1	0.819	0.74	0.038	0.585	0.658	0.342	MI (item 1 & 5):113.136
RELO2		1.083	0.028	0.9	0.19	0.81	MI (item 2 &3):108.142
RELO3		1.106	0.027	0.922	0.15	0.85	
RELO4		0.486	0.042	0.399	0.841	0.159	drop item

RELO5		0.741	0.038	0.593	0.649	0.351	
EdBEN1	0.459	0.642	0.044	0.541	0.707	0.293	Drop the factor - Highly correlated with Professional growth
EdBEN2		0.372	0.041	0.411	0.831	0.169	
EdBEN3		0.117	0.045	0.103	0.989	0.011	MI (item 1 & 3):52.559
EdBEN4		0.55	0.042	0.572	0.673	0.327	

The final "Work" measurement model

Based on goodness of fit statistics, items and factors were dropped from the proposed models. (Full details are available from the authors). As summarized in Table 3, the final re-specified CFA model of work construct consisted of 8 factors with 22 items. In this model, the Chi-Square test of model fit was significant, Satorra-Bentler $\chi 2$ (183) = 361.172, p< .001. Other goodness of fit indices indicated good fit, RMSEA = .032, 90% CI [.027, .037], CFI = .984, TLI = .979. All standardized factor loading coefficients were significant. Each factor had comparable factor loading coefficients that were equally well explained by each factor. Based on R^2 values, each item appears to have good reliability except one item (resource adequacy item 'I have difficulty getting supplies I need to perform my duties'). However, the decision was made to retain this item to reflect a potentially important issue.

Table 3. Results of the final CFA model of work construct

Factor (Reliability)	Item	STDYX Estimates	Residual variance	R^2
Autonomy (0.723)	I have very little freedom to do what I want on my job.	0.784	0.386	0.614
	I am not able to act independently of my immediate supervisor in performing my job.	0.764	0.417	0.583
Communica-tion (0.833)	I receive all necessary information to perform my job efficiently.	0.695	0.517	0.483
	Command strategies are communicated to everyone at the command.	0.813	0.340	0.660
	My command fosters and encourages open and honest communication between management and self.	0.846	0.284	0.716
Resource Adequacy (0.736)	I have adequate equipment to perform my job.	0.742	0.450	0.550
	I have enough support services to perform my job.	0.791	0.374	0.626
	I have difficulty getting supplies I need to perform my duties.	0.600	0.640	0.360
Role Conflict (0.861)	I get conflicting job requests from different supervisors.	0.778	0.394	0.606
	My immediate supervisor and peers have very different ideas about how my job should be done.	0.823	0.323	0.677
	I get conflicting job requests from my immediate supervisor.	0.866	0.25	0.750
Social Support Supervisor	My immediate supervisor can be relied upon when things get tough on my job.	0.924	0.146	0.854

Factor (Reliability)	Item	STDYX Estimates	Residual variance	R^2
(.939)	My immediate supervisor is helpful to me in getting my job done.	0.879	0.227	0.773
	My immediate supervisor is willing to listen to my job-related problems.	0.948	0.101	0.899
Social Support Co-Workers (0.926)	My co-workers can be relied upon when things get tough on my job. (Do not consider your immediate supervisor as a co-worker.)	0.936	0.124	0.876
	My co-workers are willing to listen to my job-related problems. (Do not consider your immediate supervisor your co-worker.)	0.843	0.289	0.711
	My co-workers are helpful to me in getting the job done.	0.908	0.176	0.824
Workload (0.838)	I do not have enough time to get everything done on my job.	0.804	0.354	0.646
	My workload is too heavy on my job.	0.904	0.183	0.817
Nurse-Physician Relationships (0.944)	Physicians and nurses have good working relationships.	0.926	0.142	0.858
	There is much teamwork between nurses and physicians.	0.956	0.085	0.915
	There is collaboration between nurses and physicians.	0.928	0.140	0.860

Testing of how well the 8 factors reflect the "Work" construct

A second-order CFA model tested how well the 8 factors reflect the "work" construct. This was done using the Army data. Findings indicated that the model fit the data, Satorra-Bentler $\chi 2$ (203) = 487.614, p< .001, RMSEA = .039, 90% CI [.034, .043], CFI = .974, TLI = .970.

Measurement invariance of Work construct across Army, Navy, & Air Force

Having established a good measurement model of work construct using data from only Army nurses, measurement invariance was tested to answer the question "Does each item explained by the construct measure the same thing across different services?" There are three tests of measurement invariance: configural invariance, weak factorial invariance, and strong factorial invariance. As summarized in Table 4, findings indicated the measurement models of the work construct appear to be invariant across 3 services.

Table 4. Results of tests of measurement invariance of work construct across 3 services

Model	$\chi 2$ (Model)	df	$\chi 2$ (Difference)	df	RMSEA (90% CI)	CFI	TLI
Configural invariance	1089. 523	553	-	-	.035 (.032, .038)	.981	.976
Weak factorial invariance	1099.759**	573	13.145	20	.034 (.031, .037)	.981	.977
Strong factorial invariance	1151.752**	601	63.548**	28	.034 (.031, .037)	.980	.977

Note. ** $p < .01$

The chi-square value for MLM estimation method cannot be used for chi-square difference testing in the regular way. The chi-square difference is computed by using the formula on the Mplus website (Satorra, 2000):
Scaling correction = (d0xc0 – d1xc1) / (d0 – d1)
Chi-square difference test = (T0 x c0 – T0 x c1)/ scaling correction

D0: the degree of freedom in the nested model (more restrictive model)
C0: the scaling correction factor for the nested model in the output
D1: the degree of freedom in the comparison model
D1: the scaling correction factor for the comparison model in the output
T0: chi-square value for the nested model
T1: chi-square value for the comparison model

The final "Military" measurement model

The "Military" measurement model was developed with the Army nurse subsample, as was done for the "Work" construct testing. The initial CFA model of military construct consisted of 6 factors with 23 items. The factors from the study conceptualization were deployment, job preference, professional growth, promotion opportunities, relocation, and educational benefits. It should be noted that many of the items were not from an established tool leading to lower item loadings than items for the Work construct.

The initial model including all items required respecification by dropping some items based on factor loading coefficients, R^2, and modification index (MI). Several CFA models were tested to delete redundant items and to retain factors that had good measurement properties. There was considerable collinearity between professional growth and educational benefits; therefore, only professional growth was retained. Job Preference was also dropped due to low reliability. The final re-specified CFA model of the Military construct consisted of 4 factors with 13 items (see Table 5). In this model, the Chi-Square test of model fit was significant, Satorra-Bentler $\chi 2\,(59) = 146.131$, $p < .001$. Other goodness of fit indices indicated good fit, RMSEA = .040, 90% CI [.032, .048], CFI = .982, TLI = .977.

All standardized factor loading coefficients were significant. Each factor had comparable factor loading coefficients that were equally well explained by each factor except for the relocation item 'I would prefer to stay in one geographical location…'. Based on R^2 values, some items did not have good reliability. All three items of deployment factor were less than .5 but the decision was made to retain this factor in the final model because it is a newly developed measure and it is considered an important aspect of military duty.

Table 5. Results of the final CFA model of military construct

Factor (Reliability)	Item	STDYX Estimates	Residual variance	R^2
Deployment (0.573)	My command provides me with convenient resources to obtain a power of attorney in case of immediate deployment.	0.619	0.617	0.383
	When I arrived to my command, I was told which contingency platform I was assigned to.	0.579	0.665	0.335
	I have the required training to go on immediate deployments.	0.603	0.636	0.364

Factor (Reliability)	Item	STDYX Estimates	Residual variance	R^2
Professional Growth (0.857)	The Armed Services provides the opportunity for me to keep up with new developments related to my job.	0.854	0.271	0.729
	The Armed Services provides me the opportunity for self-improvement regarding my job.	0.927	0.140	0.860
	The Armed Services does not provide the opportunity for me to attend courses, which increase my job skills.	0.673	0.548	0.452
	I am offered training and professional development opportunities at my command.	0.690	0.523	0.477
Promotional Opportunity (0.872)	I have a good chance to get ahead in the military.	0.927	0.141	0.859
	I am in a dead-end job.	0.704	0.505	0.495
	I have the opportunity for advancement in the military.	0.861	0.259	0.741
Relocation (0.832)	Frequent rotations to other geographical locations places stress on my marriage.	0.861	0.258	0.742
	Frequent rotations to other geographical locations places stress on my family life.	0.970	0.059	0.941
	I would prefer to remain in one geographical location for an extended period of time.	0.567	0.679	0.321

Testing of how well the 4 factors reflect the "Military" construct

A second-order CFA model was tested using Army data, representing that a military construct was measured indirectly through the indicators of the 4 first-order factors. Findings indicated that the model fit the data, Satorra-Bentler $\chi 2\,(61) = 146.390$, $p < .001$, RMSEA = .039, 90% CI [.031, .047], CFI = .983, TLI = .978.

Measurement invariance of Military construct across Army, Navy, & Air Force

Having established adequate measurement model of military construct using data from only Army nurses, measurement invariance was tested across 3 services. Results show a strong invariance test indicating that the measurement of the military construct appears to be invariant across 3 services (Table 6).

Table 6. Results of test of measurement invariance for military construct across 3 services

Model	$\chi 2$ (Model)	df	$\chi 2$ (Difference)	df	RMSEA (90% CI)	CFI	TLI
Configural invariance	353.763	177	-	-	.036 (.030, .041)	.985	.980
Weak factorial invariance	386.289**	195	32.969*	18	.035 (.030, .040)	.984	.980
Strong factorial invariance	620.924**	213	226.226**	18	.049 (.045, .054)	.965	.962

Note. * $p = .05$ ** $p < .01$

The final "Family" measurement model

The initial CFA model of the family construct consisted of 4 factors with 15 items. The four factors were kinship responsibility, day care, spouse issues, and children issues. Only respondents who are married or have children had responses to the items due to the skip pattern of questionnaire (N = 1298). This resulted in 1298 respondents across all 3 services (Army, Navy, and Air Force). Due to poor fit, the initial model needed respecification by dropping some items based on factor loading coefficients, R^2, and MI. Several CFA models were tested to delete redundant items and to retain factors with good measurement properties.

As summarized in Table 7, the final re-specified CFA model of work construct consisted of 3 factors with 8 items. The three factors were kinship responsibility, day care and relocation related family issues. One item in the children factor ('Children make it very difficult for me to transfer every 3 years') was recoded and included in the new factor. Three items from the children factor were deleted in the model due to low reliability.

The Chi-Square test of model fit was significant, Satorra-Bentler $\chi 2\,(18) = 51.179$, $p < .001$. Other goodness of fit indices indicated good fit, RMSEA = .037, 90% CI [.026, .050], CFI = .993, TLI = .988. All standardized factor loading coefficients were significant. Each factor had comparable factor loading coefficients that were equally well explained by each factor. Based on R^2 values, some items do not have good reliability. The three items in the newly created factor had low reliability but were retained because it was viewed as a conceptually important factor.

Table 7. Results of the final CFA model of family construct for respondents from Army, Navy and Air Force (N = 1298)

Factor (Reliability)	Item	STDYX Estimates	Residual variance	R^2
Kinship responsibility 0.886	I will likely have a family member to care for during my military career (family member refers to an elderly, sick, disabled or terminally ill person)	0.886	0.216	0.784
	The military has support systems available to me to assist in caring for a family member (family member refers to an elderly, sick, disabled or terminally ill person)	0.920	0.154	0.846
Day care 0.683	Day care center on base have convenient hours of operation for active duty military	0.886	0.216	0.784
	There is not a day-car center near my base that can accommodate my military schedule	0.864	0.254	0.746
	The military has support systems available to me to assist with locating day care	0.892	0.204	0.796
Relocation-related family issue 0.688	My spouse's career makes it very difficult for me to transfer every 3-4 years	0.596	0.645	0.355
	My spouse is supportive and moves without question every 3-4 year	0.603	0.637	0.363
	Children make it very difficult for me to transfer every 3 years	0.517	0.733	0.267

Testing of how well the 3 factors reflect the "Family" construct

A second-order CFA model was tested to determine whether the family construct was measured indirectly through the indicators of the 3 first-order factors. Findings indicated that the model fit the data, Satorra-Bentler $\chi 2\,(61) = 146.390$, $p < .001$, RMSEA = .039, 90% CI [.031, .047], CFI = .983, TLI = .978.

The military satisfaction and intent to stay measurement models

Measurement models were tested for the two outcome variables, military job satisfaction and intent to stay. Three items measured military job satisfaction and two items measured the measurement of intent to stay as summarized in Table 8. In this model, the Chi-Square test of model fit was significant, Satorra-Bentler $\chi 2\,(5) = 51.511$, $p < .001$. Other goodness of fit indices indicated acceptable fit, RMSEA = .061, 90% CI [.046, .076], CFI = .993, TLI = .986. Although some of the items did not have good explanatory power, all items were retained.

Table 8. Results of the final CFA models for outcome variables (N = 2516)

Construct (reliability)	**Items**	**STDYX Estimates**	**Residual variance**	**R^2**
Military job satisfaction (0.917)	Most days, I am enthusiastic about my service as a way of life.	0.847	0.282	0.718
	I am dissatisfied with my service way of life.	0.923	0.149	0.851
	I do not find enjoyment in my service way of life.	0.893	0.202	0.798
Intent to stay (0.793)	I plan to stay in the military as long as possible.	0.811	0.343	0.657
	I would be reluctant to leave the military.	0.813	0.339	0.661

Results of structural modeling testing

The characteristics of the nurses in the sample are presented, followed by a summary of the full structural model of intent to stay in the military. A final path model is then presented using the means of the first order constructs (e.g., the factors comprising the Work, Military, and Family constructs) as predictors of satisfaction and intent to stay. Then the analyses for the aims are presented with the analyses of a path model that relates the relocation, work and job opportunity constructs to military job satisfaction, and military job satisfaction to intent to stay in the military.

Characteristics of Sample

The study sample consisted of 2,574 observations representing 996 (39%) nurses from the Army, 988 (38%) nurses from the Air Force, and 590 (23%) nurses from the Navy. Table 9 summarizes the characteristics of the entire sample and by military branch. The mean age of the nurse respondents was 39 years with a range of 22 to 65. When rank is dichotomized (ranks 01 to 03 versus 04-06); more than half of the respondents were in ranks 01 to 03. The majority were female (69%) and married (68%). More than two-thirds had children (63%). When marital status and having children were cross-tabulated, more than half reported being married and having children (52.3%) while 11% were not married but had children. For the entire sample, nearly a third (30%) answered that their service commitment was over, although this varied by service. Navy had the highest proportion of respondents reporting that their service commitment was over (39%).

Structural Regression (SR) modeling

Using the final measurement models described above, the structural regression models were tested. The models were trimmed by deleting non-significant paths. Finally, covariates were added to the model. MPlus version 6.1 was used for this modeling with listwise deletion and robust maximum likelihood estimation. As with the measurement model testing, the structural models were developed with the Army sample and then invariance across services was tested.

Influences on Intent to Stay with Army nurse sample

Five factors (work, military, relocation-related family issues, job opportunity, and military job satisfaction) were used to model intent to stay. To test the five-factor structural model in a single analysis and to maximize the sample size, indicators of work factors were analyzed as mean scores of items within each sub-scale (also known as parcels of items with Likert-type scales as continuous indicators when items in each parcel are unidimensional).

For descriptive purposes, the mean scores for the constructs are summarized in Table 10, for the entire sample and by military branch. Note that there was little difference in the mean scores for military job satisfaction and intent to stay across the services. With regard to the Work factors, routinization and role conflict had the lowest means while social support of co-workers and autonomy had the highest. The means for support for deployment did show some variation with the Air Force having the highest means, although these differences were not tested. Opportunities for professional growth was consistent while promotional opportunity had the highest mean in the Army and the lowest in the Air Force. The Air Force also reported the lowest family-related relocation stress.

The results of the measurement model of intent to stay are summarized in Table 11. In this model, the Chi-Square test of model fit was significant, Satorra-Bentler $\chi^2(181) = 512.295$, $p < .001$, (indicating poor fit to the data, although this is expected with a large sample size). Other goodness of fit indices indicated good model fit, RMSEA = .045, 90% CI [.040, .049], CFI = .949, TLI = .941.

Table 9. Sample characteristics by military service

Characteristics	Army (n = 996)	Navy (n = 590)	Air Force (n = 988)	All (n = 2574)
Age				
Mean (SD)	38.48 (9.63)	36.93 (8.67)	40.11 (8.60)	38.75 (9.10)
Range	22 – 65	22 - 63	22-64	22 – 65
	N (%)	N (%)	N (%)	N (%)
Rank				
01-03	574 (57.63)	352 (59.66)	539 (54.55)	1465 (56.92)
04-06	417 (41.87)	234 (39.66)	447 (45.24)	1098 (42.66)
Gender				
Female	641 (64.36)	409 (69.32)	727 (73.58)	1777 (69.04)
Male	347 (34.84)	178 (30.17)	252 (25.51)	777 (30.19)
Marital status				
Married	679 (68.17)	368 (62.37)	710 (71.86)	1757 (68.26)
All other	309 (31.02)	218 (36.95)	272 (27.53)	799 (31.04)
Children				
None	363 (36.45)	239 (40.51)	319 (32.29)	921 (35.78)
Any	622 (62.45)	347 (58.81)	659 (66.70)	1628 (63.25)
Marital status x Children				
Married and children	516 (51.81)	274 (46.4)	557 (56.38)	1347 (52.33)
Married and no children	159 (15.96)	92 (15.59)	148 (14.98)	399 (15.50)
All other and children	103 (10.34)	71 (12.03)	98 (9.92)	272 (10.57)
All other and no children	203 (20.38)	146 (24.74)	170 (17.21)	519 (20.16)
Service commitment				
Over	269 (27.01)	228 (38.64)	282 (28.54)	779 (30.26)
Still owe time	712 (71.49)	355 (60.17)	696 (70.45)	1763 (68.49)

Table 10. Mean (SD) of scores for constructs in model by service

	# items	Army (n = 996) Mean (SD)	Navy (n = 590) Mean (SD)	Air Force (n = 988) Mean (SD)	Entire (n = 2574) Mean (SD)
Outcomes					
Military job satisfaction (MJS)	3	3.79 (0.91)	3.84 (0.86)	3.83 (0.90)	3.81 (0.89)
Intent to stay (ITS)	2	3.12(1.09)	3.13 (1.14)	3.27 (1.13)	3.18 (1.12)
Predictors - Work					
Work					
Autonomy	2	3.70 (0.95)	3.73 (0.86)	3.73 (0.93)	3.72 (0.92)
Communication	3	3.27 (0.96)	3.33 (0.93)	3.13 (1.00)	3.23 (0.97)
Distributive justice (Rewards?)	1	3.10 (1.17)	3.13 (1.13)	2.99 (1.25)	3.06 (1.19)
Job hazard	1	3.34 (1.16)	3.39 (1.06)	3.40 (1.16)	3.38 (1.14)
Routinization	1	2.36 (1.07)	2.34 (1.01)	2.35 (1.03)	2.35 (1.04)
Resource adequacy	3	3.49 (0.85)	3.42 (0.82)	3.39 (0.87)	3.44 (0.85)
Role conflict	3	2.52 (0.99)	2.39 (0.90)	2.48 (0.95)	2.48 (0.95)
Social support-supervisor	3	3.58 (1.05)	3.84 (0.96)	3.62 (1.04)	3.65 (1.03)
Social support-coworker	3	3.90 (0.80)	3.99 (0.71)	3.93 (0.83)	3.93 (0.80)
Workload	2	2.78 (1.03)	2.78 (0.98)	3.02 (1.09)	2.87 (1.05)
RN-MD relationship	3	3.60 (0.89)	3.65 (0.84)	3.62 (0.92)	3.62 (0.89)
Military					
Deployment	3	3.30 (0.87)	3.48 (0.78)	3.67 (0.77)	3.48 (0.83)
Professional growth	4	3.66 (0.88)	3.66 (0.82)	3.73 (0.85)	3.68 (0.85)
Promotional opportunity	3	3.96 (0.81)	3.93 (0.77)	3.78 (0.92)	3.89 (0.85)
Family-related relocation stress	2	3.47 (1.14)	3.46 (1.09)	3.15 (1.16)	3.34 (1.15)
Job opportunity	3	4.29 (0.73)	4.13 (0.79)	4.21 (0.75)	4.23 (0.75)

Note. Mean scores of all variables ranged from 1 to 5 across 3 services.

Table 11. Results of Measurement Model of Intent to Stay

Indicator	Unst. factor loading	SE	St. factor loading	Error variance	SE
Work					
Autonomy	.529	.034	.559	.688	.032
Communication	.717	.027	.754	.431	.027
Resource Adequacy	.486	.029	.578	.666	.031
Role Conflict	-.624	.032	-.634	.598	.031
Workload	-.346	.037	-.332	.604	.028
Social support-supervisors	.660	.032	.629	.834	.028
Social support-coworkers	.326	.032	.408	.890	.022
RN-MD relationship	.390	.033	.446	.801	.030
Military					
Deployment	.394	.030	.454	.794	.027
Professional growth	.643	.028	.737	.457	.028
Promotional opportunity	.536	.031	.671	.550	.033
Job opportunity					
Frequent rotations are stressful	.621	.036	.777	.397	.053
Finding civilian job difficult	.669	.035	.850	.278	.052
Could find civilian job	.554	.039	.569	.676	.046
Relocation-related family					

Indicator	Unst. factor loading	SE	St. factor loading	Error variance	SE
Relo2	1.102	.024	.911	.170	.017
Relo3	1.102	.024	.919	.156	.016
Military job satisfaction					
Enthusiastic about military life	.788	.030	.826	.318	.026
Dissatisfied with service life	.874	.030	.899	.192	.038
Do not enjoy service life	.889	.030	.893	.202	.037
Intent to stay					
Plan to stay as long as possible	.961	.027	.804	.354	.025
Reluctant to leave the military	.961	.027	.787	.380	.027
Covariance among constructs					
Work – MJS	.682	.025			
Job opportunity – MJS	-.061 (ns)	.034			
Relocation –MJS	-.190	.036			
WORK – ITL	.549	.032			
Job opportunity – ITL	-.162	.042			
Relocation – ITL	-.239	.040			
MJS – ITL	.617	.028			
Job opportunity –work	-.074 (ns)	.040			
Relocation-work	-.156	.041			
Relocation -Job opportunity	.044 (ns)	.037			

Note. Items reverse coded to be in predicted direction.

Measurement invariance of intent to stay across 3 services

Results from measurement invariance test indicated the model appeared to be invariant across 3 groups (Table 12).

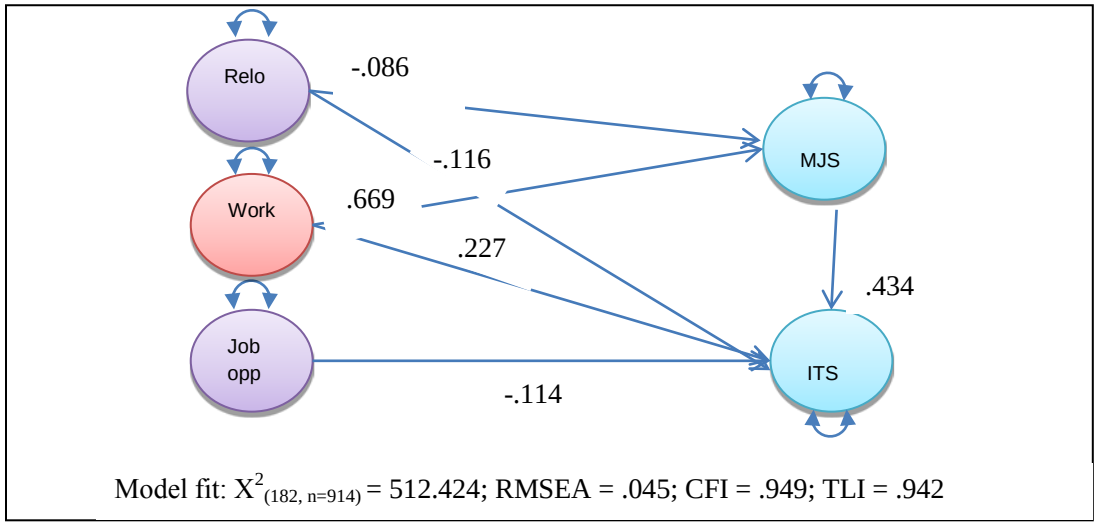
Table 12. Results of testing measurement invariance across 3 groups

Model	**$\chi 2$ (Model)**	**df**	**$\chi 2$ (Difference)**	**df**	**RMSEA (90% CI)**	**CFI**	**TLI**
Configural invariance	1449.851	547	-	-	.046 (.043, .049)	.950	.942
Weak factorial invariance	1479.005**	571	34.294	24	.045 (.042, .048)	.949	.944
Strong factorial invariance	1760.833**	603	313.764**	32	.049 (.047, .052)	.935	.933

Final structural model of intent to stay using data from Army nurses

Figure 1 illustrates the model of intent to stay (ITS) with path coefficients for the direct effects in the Army sample. Note that the model tests both the measurement and structural model simultaneously but only the structural paths are shown. The standardized path coefficient (-.008) for the direct effect of job opportunity on military job satisfaction (MJS) was not statistically significant so it was deleted. Note that Work has the strongest direct effect on military job satisfaction (0.669) as well as a direct effect on intent to stay (.227). As expected, there is a strong direct effect between military job satisfaction and intent to stay (.434).

Figure 1. Final structural model of intent to stay in the Army sample (note that measurement models are not shown but are included in the modeling).



Structural model of intent to stay with added covariates

Covariates were added to the model including gender (Female = 0, Male = 1), Rank (04-06 = 0, 01-03 = 1), marital status (all other = 0, married = 1), service commitment (It's over = 0, still owe = 1), and having children (No = 0, Yes = 1). The model with covariates was tested on invariance across 3 military services. As summarized in Table 13, although the measurement model was invariant across 3 services (i.e., the same constructs were measured across 3 services), there was no invariance of structural model parameters across 3 services. Therefore, this model was tested separately in each military branch.

Table 13. Results of testing structural path invariance across 3 services

Model	χ2 (Model)	Df	χ2 (Difference)	df	RMSEA (90% CI)	CFI	TLI
Configural invariance	2304.040	799	-	-	.050 (.047, .052)	.923	.909
Factorial invariance	2612.324**	855	304.528**	56	.052 (.050, .054)	.910	.901
Structural path invariance	3590.499**	940	1028.523**	85	.061 (.059, .063)	.865	.864

Structural model of Intent to Stay with covariates in the Army

The structural model of intent to stay with covariates is summarized in Table 14. Standardized coefficients are interpreted to facility comparison across services and to assess the relative importance of some predictors compared to others. For the Army, military job satisfaction was significantly associated with intent to stay (.434). Work was positively associated with both military job satisfaction (.656) and intent to stay (.243). Relocation-related family issue was negatively related to military job satisfaction (-.120) and intent to stay (-.127). Gender was significantly associated with relocation (.100)

and job opportunity (.079). Rank was significantly associated with work (.137). Marital status was significantly associated with relocation (.124) and military job satisfaction (.076). Service commitment was associated with military job satisfaction (-.059), not to intent to stay. Having children was not found to be significantly related to factors.

Structural model of Intent to Stay with covariates in the Navy

As summarized in Table 14, military job satisfaction was significantly associated with intent to stay (.669). Work was positively associated with military job satisfaction (.632), but not intent to stay in the Navy. Also, relocation-related family issue was negatively related to military job satisfaction (-.120), but not intent to stay. Gender (.124) was significantly related to job opportunity. Rank was significantly related to work (.137) and military job satisfaction (.144). Marital status (.098) and Children (.076) were significantly related to relocation-related family issues.

Structural model of Intent to Stay with covariates in the Air Force

As summarized in Table 14, the Air Force model also shows the strong positive relationship between military job satisfaction and intent to stay (.628). Work was positively associated with military job satisfaction (.648), but was not significantly associated with intent to stay. Relocation-related family issue was negatively related to both military job satisfaction (-.090) and intent to stay (-.072). Military job satisfaction was related to gender (-.059) and rank (.130). Rank was also related to intent to stay (-.081) and work (. 148). Marital status was related to work (.114). Gender was related to job opportunity (.149) and relocation (.171). Having children was related to relocation. Service commitment was found to be non-significant.

Path Regression Models

Considering that the work factor had such a strong effect in all services, path modeling was done to illustrate the individual effects. Paths were determined based on the conceptualization of the study and based on structural relationships that were found in earlier analyses. Multiple iterations resulted in the model represented in Figure 2. In addition to factors related to work, relocation-related family issue, and job opportunity, the effects of five covariates (rank, marital status, gender, children, and owe service time) were tested in the model.

Table 14. Parameter Estimates of the Final Structural Model of Intent to Stay by Service

	Army		Navy		Air Force	
Parameter	Unstandardized (SE)	Standardized	Unstandardized (SE)	Standardized	Unstandardized (SE)	Standardized
Military job satisfaction -> Intent to stay	0.411(.053)**	0.434	0.666 (.077)**	0.669	0.600 (.057)**	0.628
Work->Military job satisfaction	0.899 (.063)**	0.656	0.855 (.075)**	0.632	0.885 (.062)**	0.648
Work-> Intent to Stay	0.316 (.070)**	0.243				
RELO ->Military job satisfaction	-0.164 (.039)**	-0.120	-0.214 (.052)**	-0.164	-0.123 (.041)*	-0.090
RELO->Intent to Stay	-0.164 (.049)*	-0.127			-0.094 (.045)*	-0.072
JOPP-> Intent to Stay	-0.149 (.051)*	-0.114	-0.283 (.063)**	-0.211	-0.240 (.046)**	-0.183
Rank->Work	0.281 (.078)**	0.137	0.283 (.103)*	0.137	0.304 (.074)**	0.148
Rank->Military job satisfaction			0.402 (.091)**	0.144	0.366 (.073)**	0.130
Rank->Intent to stay					-0.217 (.084)*	-0.081
Gender->Military job satisfaction					-0.188 (.082)*	-0.059
Gender->JOPP	0.166 (.076)*	0.079	0.272 (.110)*	0.124	0.347 (.081)**	0.149
Gender -> RELO	0.214 (.079)*	0.100			0.401 (.080)**	0.171
Marital status->RELO	0.279 (.079)**	0.124	0.215 (.104)*	0.098		
Children->RELO			0.446 (.104)**	0.208	0.193 (.081)*	0.088
Marital status->Military job satisfaction	0.233 (.087)*	0.076				
Marital status->Work					0.266 (.089)*	0.114
SC->Military job satisfaction	-0.184 (.083)*	-0.059				
Model fit Statistics						
X^2	815.614**		603.085**		827.868**	
RMSEA [90% CI]	.048 [.045, .052]		.049 [.044, .055]		.049 [.045, .053]	
CFI	.925		.930		.928	
TLI	.908		.914		.911	

Note. RELO = Family-related relocation stress; JOPP = Job opportunity; SC = Service commitment

* $p <$ .05 ** $p <$ .001

Path regression model for military job satisfaction

The direct path coefficients for military job satisfaction are summarized in Table 15. Note that all 5 covariates were directly linked to job satisfaction. The model fits for the Army and Navy were good and for the Air Force it was acceptable.

Briefly, the strongest effect on job satisfaction for all three services was promotional opportunity (standardized coefficient .2 or greater). Routinization had a significant negative direct effect on military job satisfaction across the three services. Opportunities for professional growth had significant positive effects on job satisfaction across all three services. Relocation-related family issue had significant negative effects on military job satisfaction. Autonomy had positive direct effect on military job satisfaction in both the Army and the Navy. Marital status had positive direct effect on military job satisfaction in only the Army. No significant direct effect of having children on military job satisfaction was found across three services. Gender, marital status, and having children had varying direct effects on relocation-related family issue. In the Army and the Air Force, gender had significant positive effects on relocation–related family issue. Marital status had significant positive effect on relocation-related family issue in the Army and the Navy.

Path regression model for intent to stay

The direct path regression coefficients for intent to stay are summarized in Table 16. There was a significant relationship between satisfaction and intent to stay (.38 for Army, .51 for Navy, and .46 for Air Force). The findings for indirect effects of factors on intent to stay were similar to those for job satisfaction. Promotional opportunity has the strongest indirect effects on intent to stay through military job satisfaction while routinization significantly remained negative indirect-effects on intent to stay across all three services. Opportunities for professional growth also had significant positive indirect effects on intent to stay across all three services although these indirect effects were very weak (.04 for Army, .06 for Navy, and .07 for Air Force). Job opportunity had negative direct effects on intent to stay across all three services. Relocation-related family issue also had negative direct effects on intent to stay across all three services. Gender, marital status, and rank had varying indirect effects on intent to stay. No significant indirect effect of having children on intent to stay through military job satisfaction was found. While service commitment had not significant direct effect on intent to stay, relocation-related family issue had significant direct effects on intent to stay across all three services.

Figure 2. Final Path Analysis Model illustrating only direct effects

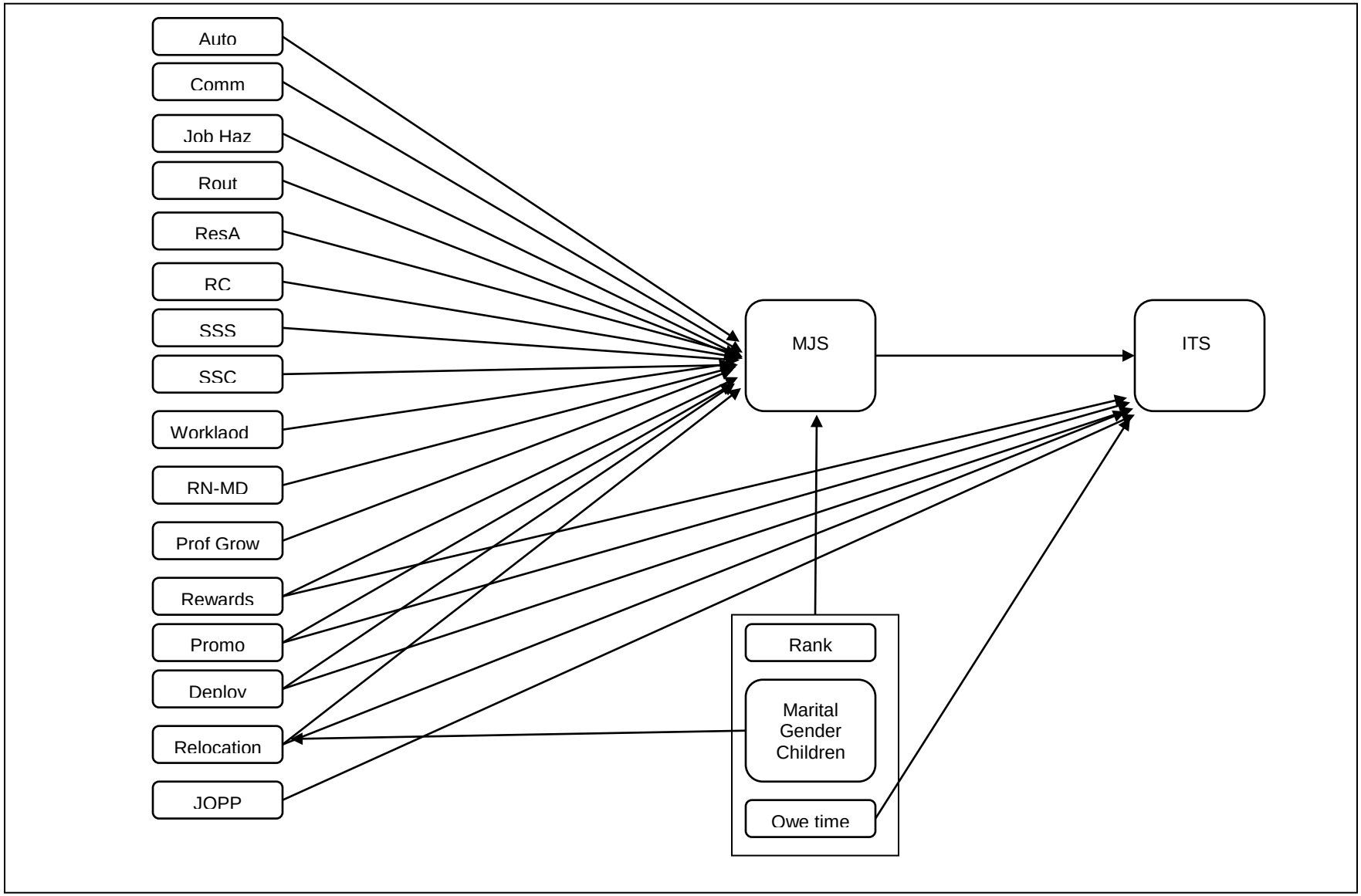


Table 15. Path coefficients of the final path model of military job satisfaction by service

	Army		Navy		AirForce	
Parameter estimates (Direct effect)	Unstandardized (SE)	Standardized	Unstandardized (SE)	Standardized	Unstandardized (SE)	Standardized
Autonomy -> MJS	0.085 (.031)*	0.090	0.073 (.045)*	0.073	0.027 (.030)	0.028
Communication -> MJS	0.132 (.037)**	0.141	0.064 (.045)	0.069	0.125 (.037)*	0.142
Rewards -> MJS	0.027 (.025)	0.035	0.065 (.035)	0.087	0.012 (.026)	0.016
Routinization -> MJS	-0.158 (.030)**	-0.187	-0.121 (.041)*	-0.145	-0.127 (.032)**	-0.149
Job hazard - > MJS	0.012 (.021)	0.016	0.016 (.030)	0.019	0.007 (.024)	0.009
Resource Adequacy -> MJS	0.003 (.034)	0.003	0.006 (.054)	0.006	0.021 (.035)	0.021
Role conflict -> MJS	0.011 (.033)	0.013	0.012 (.055)	0.013	0.031 (.035)	0.033
Social support: Supervisor -> MJS	-0.036 (.030)	-0.042	0.059 (.045)	0.066	0.027 (.034)	0.031
Social support : Coworker -> MJS	0.026 (.033)	0.024	0.036 (.047)	0.030	0.059 (.033)	0.056
Workload -> MJS	-0.075 (.027)*	-0.087	-0.016 (.034)	-0.018	-0.049 (.026)	-0.060
RN-MD relationship -> MJS	0.021 (.032)	0.021	0.103 (.042)*	0.102	-0.014 (.029)	-0.014
Deployment -> MJS	0.001 (.030)	0.001	0.045 (.044)	0.042	0.055 (.036)	0.048
Professional growth -> MJS	0.099 (.040)*	0.097	0.134 (.057)*	0.126	0.160 (.047)*	0.152
Promotional opportunity -> MJS	0.320 (.045)**	0.288	0.223 (.066)**	0.196	0.230 (.038)**	0.238
Relocation -> MJS	-0.082 (.020)**	-0.105	-0.101 (.028)**	-0.133	-0.050 (.021)*	-0.065
Rank -> MJS	0.057 (.050)	0.032	0.204 (.059)**	0.118	0.209 (.048)**	0.117
Service commitment -> MJS	-0.092 (.049)	-0.046	0.037 (.063)	0.021	-0.107 (.047)*	-0.055
Gender -> MJS	-0.036 (.048)	-0.019	0.033 (.064)	0.018	-0.130 (.052)*	-0.064
Marital status -> MJS	0.124 (.054)*	0.064	-0.010 (.066)	-0.006	0.045 (.058)	0.022
Having children -> MJS	0.038 (.052)	0.020	0.074 (.069)	0.043	-0.026 (.053)	-0.014
Gender -> RELO	0.210 (.081)*	0.088	0.090 (.113)	0.038	0.451 (.084)**	0.169
Marital status -> RELO	0.289 (.082)**	0.115	0.237 (.101)*	0.103	-0.020 (.083)	-0.008
Having children -> RELO	0.068 (.083)	0.029	0.403 (.101)**	0.179	0.226 (.083)*	0.091
Model fit Statistics						
X^2	60.350**		40.190**		92.013**	
RMSEA [90% CI]	0.055 [.041, .070]		0.053 [.033, .074]		0.073 [.059, .088]	
CFI	.945		.962		.908	
TLI	.867		.908		.775	

Note. MJS = Military Job Satisfaction; RELO = Family-related relocation stress * $p <$ .05 ** $p <$ .001

Table 16. Final path model of intent to stay by service

	Army		Navy		AirForce	
Parameter estimates (Direct effects)	Unstandardized (SE)	Standardized	Unstandardized (SE)	Standardized	Unstandardized (SE)	Standardized
Autonomy -> MJS	0.085 (.031)*	0.090	0.077 (.044)	0.076	0.027 (.030)	0.028
Communication -> MJS	0.133 (.037)**	0.143	0.062 (.045)	0.068	0.126 (.037)*	0.143
Job hazard - > MJS	0.012 (.021)	0.015	0.015 (.030)	0.019	0.008 (.024)	0.010
Routinization -> MJS	-0.158 (.030)**	-0.187	-0.120 (.041)*	-0.144	-0.129 (.032)**	-0.149
Resource Adequacy -> MJS	0.005 (.034)	0.005	0.005 (.053)	0.005	0.019 (.035)	0.018
Role conflict -> MJS	0.008 (.033)	0.008	0.011 (.056)	0.011	0.029 (.035)	0.031
Social support: Supervisor -> MJS	-0.036 (.031)	-0.043	0.057 (.045)	0.063	0.026 (.034)	0.030
Social support : Coworker -> MJS	0.029 (.033)	0.027	0.034 (.047)	0.029	0.060 (.033)	0.057
Workload -> MJS	-0.073 (.027)*	-0.085	-0.018 (.034)	-0.021	-0.049 (.026)	-0.061
RN-MD relationship -> MJS	0.019 (.033)	0.018	0.103 (.042)*	0.101	-0.016 (.029)	-0.016
Professional growth -> MJS	0.100 (.040)*	0.098	0.138 (.056)*	0.130	0.160 (.047)*	0.153
Rewards -> MJS	0.029 (.025)	0.038	0.064 (.035)	0.086	0.012 (.026)	0.016
Promotional opportunity -> MJS	0.315 (.045)**	0.283	0.221 (.065)*	0.194	0.230 (.038)**	0.238
Deployment -> MJS	0.000 (.030)	0.000	0.046 (.044)	0.042	0.055 (.034)	0.048
RELO -> MJS	-0.082 (.020)**	-0.106	-0.099 (.027)**	-0.130	-0.049 (.021)*	-0.065
Gender -> MJS	-0.040 (.048)	-0.022	0.041 (.062)	0.022	-0.131 (.052)*	-0.064
Rank -> MJS	0.060 (.050)	0.033	0.211 (.059)**	0.122	0.210 (.049)**	0.118
Marital status -> MJS	0.129 (.054) *	0.066	-0.010 (.067)	-0.006	0.044 (.056)	0.022
Having Children -> MJS	0.040 (.052)	0.022	0.075 (.069)	0.044	-0.026 (.052)	-0.014
Service commitment -> MJS	-0.087 (.049)	-0.044	0.042 (.063)	0.024	-0.108 (.046)*	-0.055
MJS - > ITS	0.462 (.044)**	0.383	0.670 (.058)**	0.506	0.584 (.044)**	0.462
JOPP -> ITS	-0.126 (.044)*	-0.086	-0.248 (.055)**	-0.168	-0.201 (.041)**	-0.132
Rewards ->ITS	0.081 (.033)*	0.089	0.031 (.040)	0.032	0.006 (.030)	0.007
Promotional opportunity -> ITS	0.176 (.050)**	0.131	0.114 (.069)	0.076	0.101 (.047)*	0.083
Deployment -> ITS	0.082 (.040)*	0.066	-0.020 (.057)	-0.014	0.083 (.046)	0.057
RELO -> ITS	-0.091 (.027)*	-0.097	-0.088 (.038)*	-0.087	-0.054 (.027)*	-0.056
Service commitment -> ITS	0.047 (.068)	0.020	-0.042 (.079)	-0.018	-0.058 (.070)	-0.023
Gender -> RELO	0.208 (.081)*	0.087	0.083 (.113)	0.035	0.446 (.085)**	0.168
Marital status -> RELO	0.291 (.082)**	0.116	0.219 (.100)*	0.095	-0.012 (.084)	-0.005
Having children -> RELO	0.070 (.083)	0.029	0.416 (.101)**	0.185	0.227 (.084)*	0.091
Model fit Statistics						

X^2	93.843**	97.275**	159.194**
RMSEA [90% CI]	0.045 [.034, .056]	0.061 [.047, .075]	0.065 [.055, .076]
CFI	.955	.948	.911
TLI	.915	.901	.830

Note. MJS = Military Job Satisfaction; RELO = = Family-related relocation stress; JOPP = Job opportunity; ITS = Intent to Stay

* $p < .05$ ** $p < .001$

Additional content analysis of narrative comments provided by participants.

There were 1541 (59%) of the respondents who chose to make comments and 1061 did not. The individual service members who commented were 581 (22.3%) Army, 349 (13.4%) Navy, and 589 (22.6%) Air Force; while 40.7% of the total sample made no comment and 1% did not identify their service branch. Those who did not identify their service branch or with incomplete comments were excluded, producing 1,032 comments that were included in the summative analysis of themes.

Many of the comments contained more than one theme and were included in each appropriate category. Comment categories were analyzed by service branch, by gender, and by theme and are presented here by service branch and by subgroup within each branch.

Army Results

Figure 3 shows the Army comments by theme by gender. Some comments included comments related to more than one theme in which case they were recorded under each theme represented. The most frequently occurring theme was the military followed by professional issues. Leadership and training were next followed by family issues. Financial issues and time concerns were least frequently mentioned. Male and female officers had similar concerns; however female officers were somewhat more concerned with family issues while male officers were more interested in financial and training issues.

Figure 3: Army comments by theme by gender
(% of total comments containing the theme)

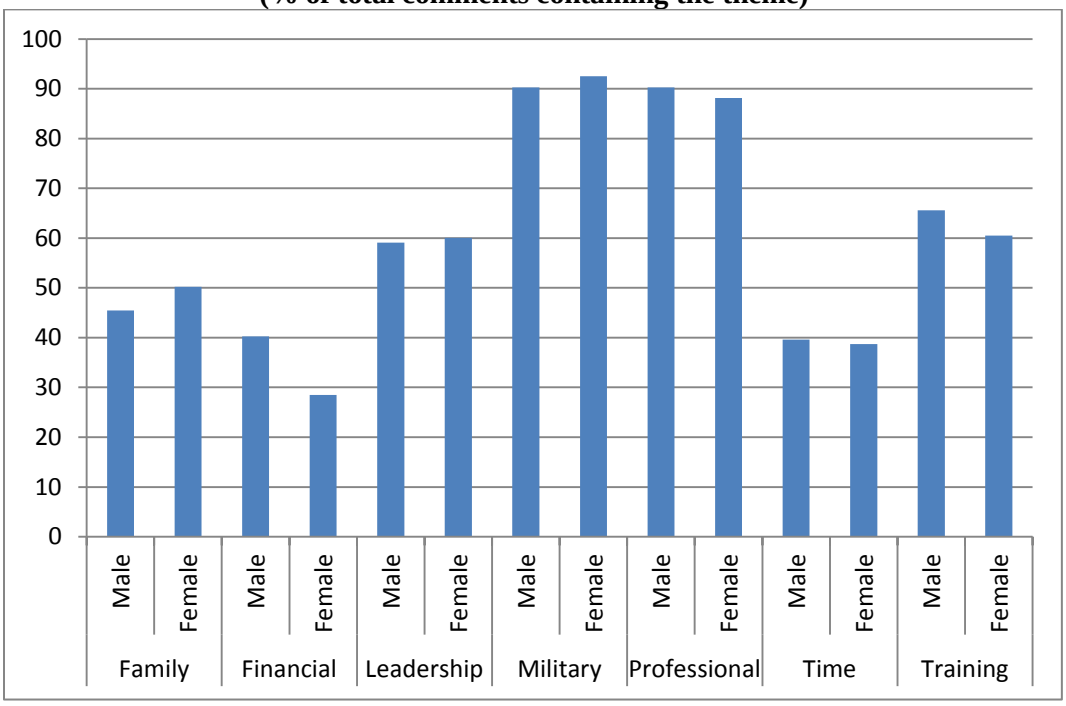


Figure 4: Army comments by rank by theme (% of total comments)

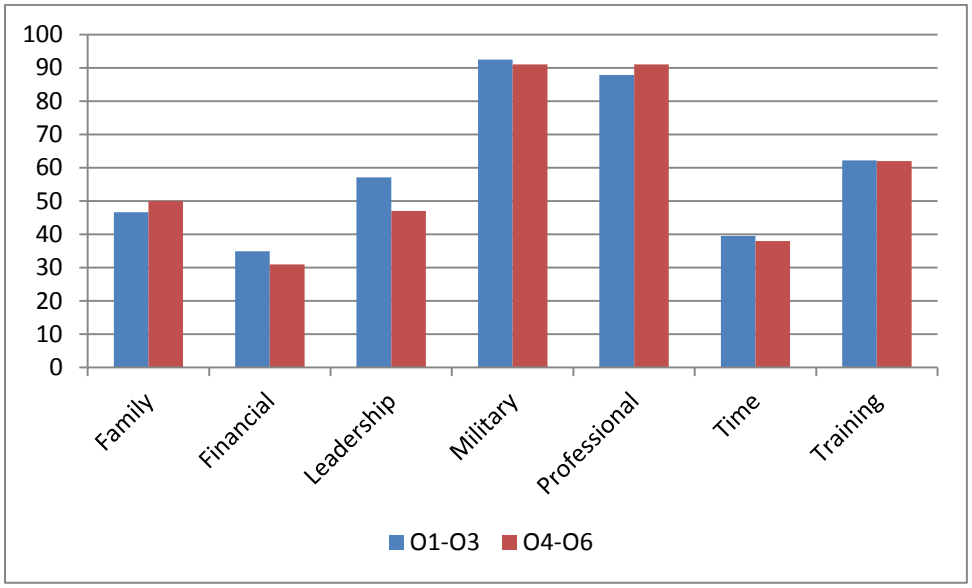


Figure 4 shows the Army results by rank (O1-O3) and (O4-O6). Junior and senior Army officers had similar concerns, however senior officers commented somewhat more frequently on the family theme while junior officers were slightly more focused on leadership.

Army participants' responses related to the "military" theme centered on perceived inequities in deployment frequency, length of deployments, and the desire for more input into assignments. Within this theme, several nurses applauded new six months deployment cycles. "Professional" themes identified by Army participants generally related to the desire for a match between the nurse's skill set and their assignment, the need for better mentoring between nurses at the staff level and their immediate supervisor, a desire for additional formal education, and utilization of nurses to their fullest capabilities during deployments. Comments under the "family" theme dealt primarily with the negative impact of frequent deployments on families, a perception that the needs of single soldiers did not receive adequate attention, difficulties in securing childcare for those nurses who worked 12-hour shifts, and the problems spouses had in securing employment when the participant had frequent permanent duty station changes.

Navy Results

Figure 5 shows Navy results by theme by gender. Male and female Navy officers were similar in concerns about military and professional issues that were the most frequently occurring topics. However they differed slightly in concerns about family issues, financial issues, leadership issues, and training.

Figure 5: Navy comments by theme by gender

(% of total comments containing the theme)

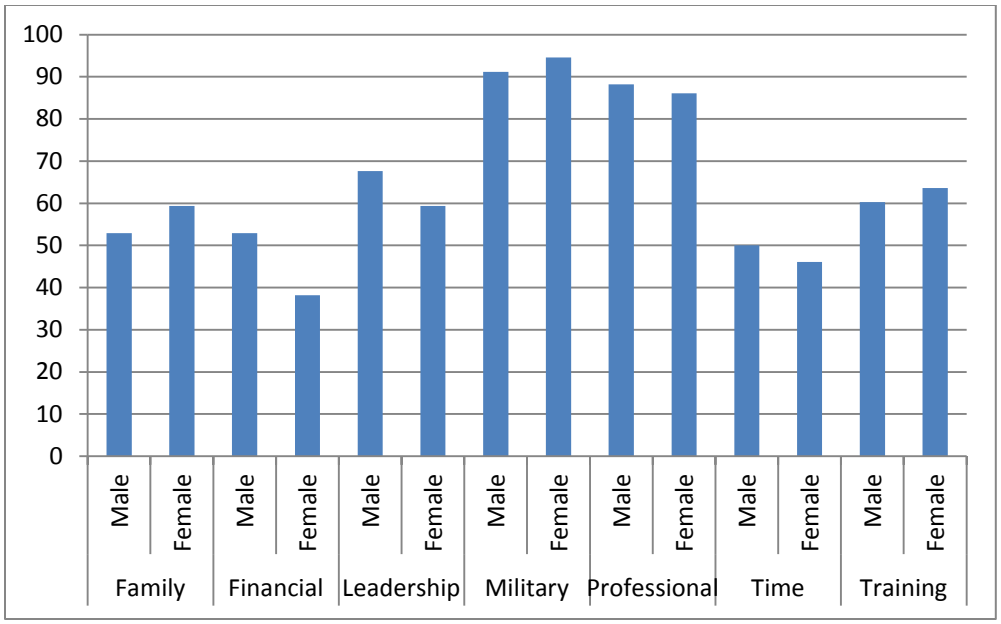


Figure 6 illustrates the percentage of total comments made by junior and senior Naval officers by theme. Both groups were most concerned about military and professional issues, with junior officers slightly more concerned than senior officers in both categories. Senior officers were slightly more concerned about leadership and time while junior officers focused more on family, financial, and training issues.

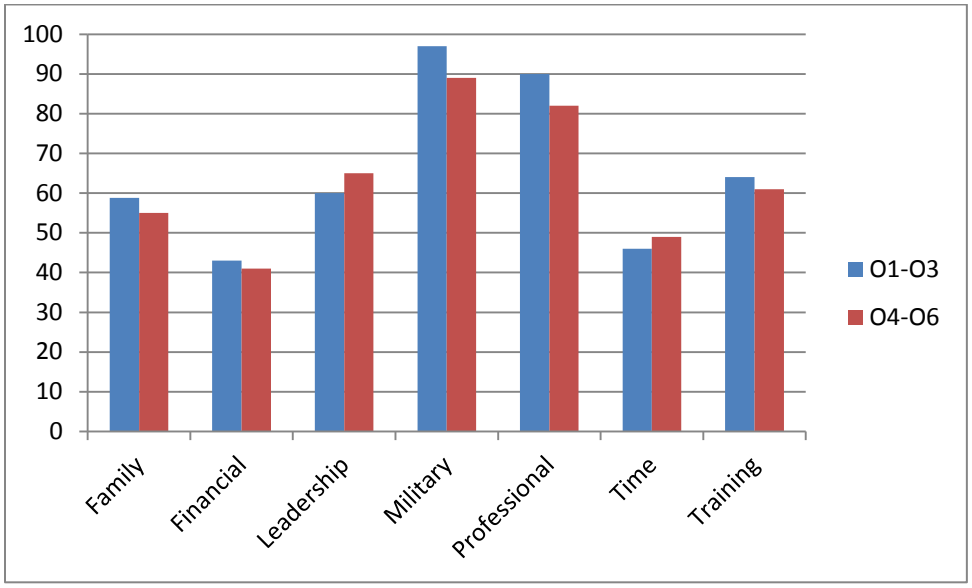
Navy respondents identified "homesteading" issues, where some Navy nurses stayed in one location while others experienced frequent deployments as a retention problem under the "military" theme. Additionally, "military" themes in the Navy concerned the retention of nurses who were not deployable, and the perception that those in leadership positions are more concerned with their own careers rather than mentoring junior officers. Under the "professional" theme, respondents reported assignments outside of their specialty or area of advanced certification as a barrier to retention. Navy respondents further noted there was a lack of mentorship of junior officers. "Family" theme issues noted by Navy respondents included difficulties obtaining qualified child care, problems locating child care for those who worked shifts and holidays, and hardships spouses encountered finding a job when the Navy officer was relocated to a new duty station.

Air Force Results

Figure 7 shows the results for Air Force officers by gender by theme. Both groups commented most on military and professional issues. Female officers more frequently commented on family, leadership, time, and training issues while male officers commented more often on financial issues.

Air Force officers focused the majority of their comments on military and professional issues in both junior and senior office ranks. Senior Air Force officers were slightly more concerned with family, financial, time and leadership issues while junior officers were a little more interested in military and training issues. However, for the most part the groups were remarkably similar in their concerns. Within the "military" theme, Air Force nurse respondents noted geographically distant assignments for joint active duty spouses. These nurses also reported limited promotion opportunities and felt that they were not allowed to remain in clinical positions. Additionally, they believed that medical corps officers were promoted much more rapidly than their nurse corps officer counterparts, many of whom had had more deployments. Within the theme of "leadership", Air Force respondents felt that those in leadership positions should devote at least some portion of their time to remaining clinically current.

Figure 6: Navy comments by rank by theme (% of total comments)



As with the other services, Air Force participants voiced the need for better mentoring by their immediate supervisors. These Air Force nurses also reported that promotions were at times based not on ability but other factors, such as personality and how well a supervisor wrote your OER.

Family themes identified by Air Force nurse participants concerned difficulty obtaining child care for those working rotating shifts. Frequent deployments were another factor affecting these nurses willingness to remain in the Air Force. The Air Force respondents further noted that their spouses had difficulty finding employment due to frequent changes in duty station, even if they were a G.S. employee.

Figure 7: Air Force comments by theme by gender
(% of total comments containing the theme)

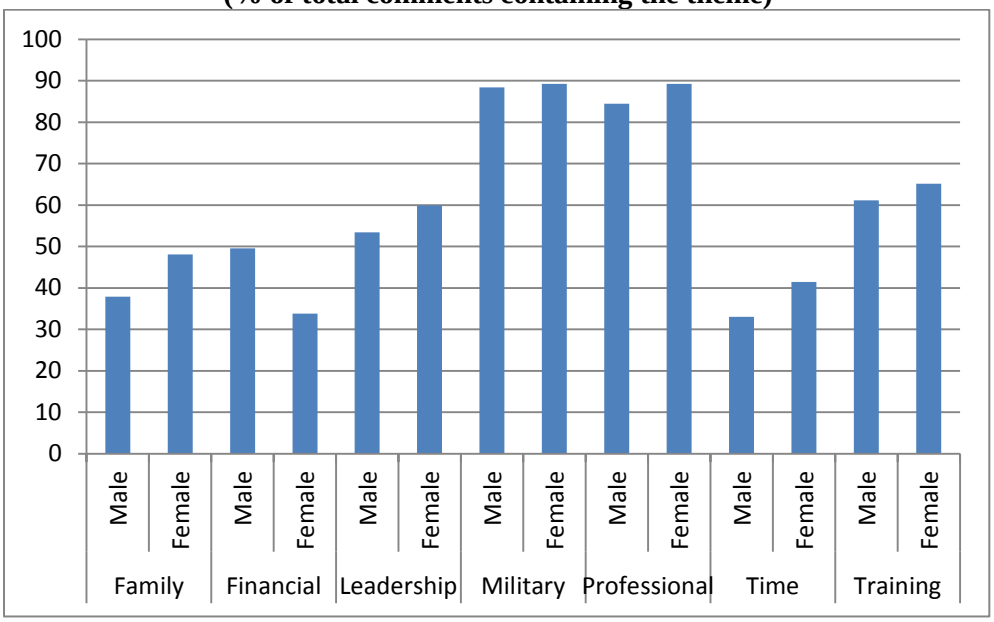
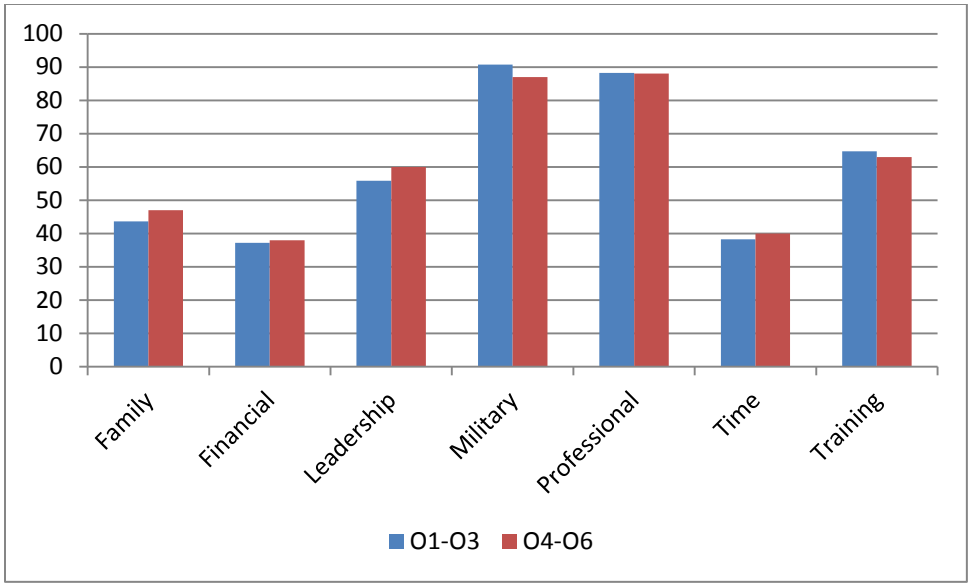


Figure 8: Air Force comments by rank by theme (% of total comments)



Relationship of current findings to previous findings: Zangaro and colleagues conducted a study of Navy nurses in 2004 and found similar findings. While this study used a revised version of the Price and Mueller instrument, the variables were basically the same. These findings indicate that for the Navy things have not changed much and the nurses are reporting the same issues they were several years ago. The impact of consistent geographical moves has been a concern for several years in military nursing (Kocher and Thomas, 2004; Tillman, Paradis & Kelley, 2001; Zangaro and colleagues, 2004).

Effect of problems or obstacles on the results: There were no significant problems with the results of the study. However, the approvals needed for the study were a problem with the timely execution of the study. It took approximately 9 to 12 months to obtain a survey control number which caused a delay in administering the survey. The delay resulted in the survey being administered over the Thanksgiving and Christmas holiday periods, which could have had an impact on response rates. However, the survey dates were extended into the end of January to allow for increased responses rates.

Limitations: The intent of the study was to collect data that will inform decision-making regarding recruitment and retention of military nurses. However, there are limitations that must be acknowledged. Surveys use self-reported data and thus data quality can be affected by problems associated with respondent recall, denial and deception. When attitudes are assessed such as in this study, the time the survey is completed may be influenced by recent events or experiences that influence responses. A single administration, such as this survey was, does not allow for any check of the stability of responses. Another limitation is the use of email addresses to reach respondents. Military personnel are transient individuals and this may decrease respondent responses. However, multiple emails were sent informing the respondents about the survey so the potential for sampling bias was minimized. Overall, the threats to validity of the study were minimal and there were no significant effects to the results of the study.

Conclusion:

There was little difference in the mean scores for military job satisfaction and intent to stay across the services. Overall, the nurses are satisfied with their jobs and have an intent stay. With regard to the Work factors, routinization had the lowest mean scores which indicates that nurses felt that they had little variety in their jobs. While role conflict had the low mean scores that is indicating that nurses do not feel conflicted in their roles and that leadership is providing a consistent message to the staff. The nurses also reported a high level of social support from their co-workers, which demonstrate team spirit. Autonomy was also a positive indicator to consider because nurses reported that they felt they could be autonomous in their roles. Across all three services, the nurses reported having support from the command for readiness to deploy. Deployment was not a negative issue for those nurses who answered the survey. Nurses indicated that they felt there were opportunities for professional growth in the military and promotional opportunity was good. All of the services reported stress on family life and marriage as a result of continued relocation.

In the structural models, work factors have the strongest direct effect on military job satisfaction (0.669) as well as a direct effect on intent to stay (.227). As expected, there is a strong direct effect between military job satisfaction and intent to stay (.434). Covariates were added to the model including gender (Female = 0, Male = 1), Rank (04-06 = 0, 01-03 = 1), marital status (all other = 0, married = 1), service commitment (It's over = 0, still owe = 1), and having children (No = 0, Yes = 1). The model with covariates was tested on invariance across 3 military services. Although the measurement model was invariant across 3 services (i.e., the same constructs were measured across 3 services), there was no invariance of structural model parameters across 3 services. Therefore, this model was tested separately in each military branch.

For the Army, military job satisfaction was significantly associated with intent to stay (.434). Work factors were positively associated with both military job satisfaction (.656) and intent to stay (.243). Relocation-related family issue was negatively related to military job satisfaction (-.120) and intent to stay (-.127). This is not a surprising finding considering the descriptive statistics which indicated stress related to relocation. Gender was significantly associated with relocation (.100) and job opportunity (.079). After reading some of the narrative comments, married couples felt that their spouse suffered from the constant relocation because he or she had to begin new jobs and in some cases new careers. Marital status was significantly associated with relocation (.124) and military job satisfaction (.076). Rank was significantly associated with work (.137), in that the higher-ranking officers were less satisfied with their jobs as compared to lowered ranking officers. Service commitment was associated with military job satisfaction (-.059), which indicates that the more time the nurse was committed to in the military the less satisfied he or she is. Having children was not found to be significantly related to factors.

For Navy, military job satisfaction was significantly associated with intent to stay (.669). Work was positively associated with military job satisfaction (.632), which indicates that Navy officers are satisfied with their jobs. Also, relocation-related family issue was negatively related to military job satisfaction (-.120), this indicates that the more times a person is expected to move during his or her career the less satisfied he or she will be. However, relocation-related family issue was not associated with intent to stay which is a good because this may not be a significant factor in whether a service member will stay in the Navy. Gender (.124) was significantly related to job opportunity, which means males reported greater job opportunities as compared to females. Rank was significantly related to work (.137) and military job satisfaction (.144). In the Navy, the lower ranking officers were more satisfied with their jobs as compared to the more senior officers. Marital status (.098) and children (.076) were significantly related to relocation-related family issues. Respondents reported increased stress with relocation when they were married and had children. Probably due to the fact that the children have to switch schools to frequently.

The Air Force model also shows the strong positive relationship between military job satisfaction and intent to stay (.628). This is not a surprising finding in any of the services because this relationship has been tested multiple times in the literature and the association is the same. Work was positively associated with military job satisfaction (.648) which means nurses are satisfied with work related factors. Relocation-related family issue was negatively related to both military job satisfaction (-.090) and intent to stay (-.072). For the Air Force, this finding is important because the more frequent moves that an officer has to make the less satisfied they are and the less likely they are to remain on active duty. These data indicate that, in the Air Force relocation is affecting retention. Military job satisfaction was related to gender (-.059) and rank (.130). Males reported a higher level of satisfaction as compared to females and junior officers were more satisfied as compared to senior officers. Rank was also related to intent to stay (-.081) and work (. 148). The junior officers are less likely to stay in the Air Force as compared to senior officers. Marital status was related to work (.114). Officers who reported having children reported a higher level of stress in regards to relocation.

Work Factors

Considering that the work factor had such a strong effect in all services, path modeling was done to illustrate the individual effects.

Briefly, the strongest effect on job satisfaction for all three services was promotional opportunity (standardized coefficient .2 or greater). Across all three services the officers reported that the more routine an officers job is the less satisfied he or she will be. The more opportunities for professional growth the more satisfied officers were across all three services. Across all three services relocation-related family issues had significantly negative effects on military job satisfaction. Autonomy had positive direct effect on military job satisfaction in both the Army and the Navy. Marital status had positive direct effect on military job satisfaction in the only Army. No significant direct effect of having children on military job satisfaction was found across three services. Gender, marital status, and having children had varying direct effects on relocation-related family issue. In the Army and the Air Force, gender had significant positive effects on relocation–related family issue. Marital status had significant positive effect on relocation-related family issue in the Army and the Navy.

The direct path regression coefficients for intent to stay are worth mentioning. Overall, the conclusions based on these direct paths indicate that there is a need to revisit the relocation policy in all services to determine how stress might be reduced on family life because constant moves are having a significant negative effect on service members' intent to stay. Nurses were asking to be able to remain in one geographical area for longer periods of time provided this would not impact their promotional opportunity. Additionally, single military members felt that they were expected to be more flexible with relocations and deployments. Further, if promotional opportunities decline service members will be less likely to stay. The service members reported good professional growth opportunities which are associated with an increase in intent to stay. Nurses are also concerned about job opportunities and if these continue to decline in the civilian market, they are less likely to staff. These opportunities are related to spouses. Overall, deployments were not a significant factor in determining job satisfaction or intent to stay. Most service members were happy to deploy and saw this as part of their mission and patriotic duty. Retention efforts need to be focused on ameliorating factors that are causing nurses to leave the military and identifying the specific needs for each of the services and among the junior and senior officers.

Content Analysis Conclusions:

As a portion of the Military Nurse Corp Officer Retention Survey, officers we asked to identify any particular concerns they may have. There were 1541 (59%) of the respondents who chose to make

comments and 1061 did not. The individual service members who commented were 581 (22.3%) Army, 349 (13.4%) Navy, and 589 (22.6%) Air Force; while 40.7% of the total sample made no comment and 1% did not identify their service branch." Using summative content analysis, seven themes were identified as areas of concern by the participants: military, profession, family, leadership, time, training and financial. Three themes, military issues, professional issues and family issues accounted for 82% of concerns of Army participants, 83% of Air Force participants, and 82% of Navy participants.

Army participants responses related to the " military" theme centered around perceived inequities in deployment frequency, length of deployments, and the desire for more input into assignments. Within this theme, several nurses applauded new six months deployment cycles. "Professional" themes identified by Army participants generally related to the desire for a match between the nurse's skill set and their assignment, the need for better mentoring between nurses at the staff level and their immediate supervisor, a desire for additional formal education, and utilization of nurses to their fullest capabilities during deployments. Comments under the "family" theme dealt primarily with the negative impact of frequent deployments on families, a perception that the needs of single soldiers did not receive adequate attention, difficulties in securing childcare for those nurses who worked 12 hour shifts, and the problems spouses had in securing employment when the participant had frequent permanent duty station changes.

Navy respondents identified "homesteading" issues, where some Navy nurses stayed in one location while others experienced frequent deployments as a retention problem under the "military" theme. Additionally, "military" themes in the Navy concerned the retention of nurses who were not deployable, and the perception that those in leadership positions are more concerned with their own careers rather than mentoring junior officers. Under the "professional" theme, respondents reported assignments outside of their specialty or area of advanced certification as a barrier to retention. Navy respondents further noted there was a lack of mentorship of junior officers. "Family" theme issues noted by Navy respondents included difficulties obtaining qualified child care, problems locating child care for those who worked shifts and holidays, and hardships spouses encountered finding a job when the Navy officer was relocated to a new duty station.

Within the "military" theme, Air Force nurse respondents noted geographically distant assignments for joint active duty spouses. These nurses also reported limited promotion opportunities and felt that they were not allowed to remain in clinical positions. Additionally, they believed that medical corps officers were promoted much more rapidly than their nurse corps officer counterparts, many of whom had had more deployments. Within the theme of "leadership", Air Force respondents felt that those in leadership positions should devote at least some portion of their time to remaining clinically current. As with the other services, Air Force participants voiced the need for better mentoring by their immediate supervisors. These Air Force nurses also reported that promotions were at times based not on ability but other factors, such as personality and how well a supervisor wrote your OER.

Family themes identified by Air Force nurse participants concerned difficulty obtaining child care for those working rotating shifts. Frequent deployments were another factor affecting these nurses willingness to remain in the Air Force. The Air Force respondents further noted that their spouses had difficulty finding employment due to frequent changes in duty station, even if they were a G.S. employee.

Significance of Study or Project Results to Military Nursing

Military nursing and civilian nursing organizations are competing for the same pool of registered nurses. However, the military faces their own unique issues in recruitment and retention of nurses. In combination, these have led to nurses leaving the military after meeting their obligations. As a result, the impact of the nursing shortage is particularly acute and the Nursing leadership in the Army, Navy and Air Force are challenged to develop, mentor and retain nursing staff. They are taking their roles and this nursing shortage very seriously and are trying to determine strategies for retaining military nurses at all ranks.

While there are issues common to all hospitals (e.g., salary, promotional opportunities, job stress), the military has unique issues in both recruitment and retention. A military nurse is required to sign a contract for a fixed number of years and it is likely that he/she will move across geographical locations within a few years. Additionally, single or married military members who have children in school are concerned about the impact geographical moves will have on their child's education. Satisfaction with work and military life, location and family were shown to have significant effects on retention of Army nurses (Kocher and Thomas, 1994). In a more recent study by Zangaro (2004), Navy Nurses reported dissatisfaction with having to relocate frequently and balancing work and family life was difficult at times.

During a time when the shortage of nurses is increasing and end strength is declining in military nursing it is extremely relevant to conduct a retention study to isolate specific factors contributing to military nurse retention. The findings from this study allow the nursing leadership across all services to ameliorate factors that are having a negative impact on nurse retention.

A nurse's role is critical in maintaining the health of active duty members during peacetime, but nurses also have a much more crucial role to play during a wartime situation. Military hospitals have to develop innovative ways to recruit and retain nurses because of the increased care needs of personnel who have returned from Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). The Army, Navy and Air Force are all well prepared and experienced in the rapid mobilization and deployment of large volumes of personnel, equipment, and supplies. During a wartime crisis, one of the most crucial groups of healthcare personnel are nurses. Operational readiness will be affected if the military services are not able to recruit and retain nurses at all ranks. Recruitment and retention of nurses is essential to maintain the strength of the Nurse Corps in all services at a level that will allow nursing to preserve its overall stability.

While the focus of this study was active duty military nurses, it is also important for additional research to be conducted with civil service nurses. The civil services nurses provide a wide range of support and experience at military health care facilities. The perspectives of the civil service nurses are just and important and in some ways more important than the military nurses because when military are deployed health care facilities rely on civil service nurses to step up and provide exceptional care to wounded warriors and military beneficiaries. In addition, future research should also focus on the reserve component of the military as they play a critical role in the health care facilities during peace and wartime situations.

There is also a need to continue to update measurement instruments to assess job satisfaction and retention issues in the military work environment. There are several generations of nurses employed at each facility and there are differences in generational expectations that need to be assessed in military facilities. This study was the first to be conducted across all three services. The findings from this study indicate that there are little differences in the perceptions of each service in relation to the work environment.

The current study is a good starting point for nurse researchers to nurse leaders to examine their nursing workforce needs and consider different strategies to recruit and retain military nurses. In addition, military nurse researchers must work across the services and along with their civilian counterparts to address concerns that may affect retention of military and civil service nurses. Previous work on nurse retention has been descriptive in nature, future research should focus on longitudinal intervention studies to better address the factors affecting retention in military work environments. Military nurse researchers must conduct research across all services to permit the nursing leadership to make sound decisions that will result in successful changes to enhance the work environments for both military and civil service nurses.

Changes in Clinical Practice, Leadership, Management, Education, Policy, and/or Military Doctrine that Resulted from Study or Project

This study was conducted to determine factors associated with retention of Army, Navy and Air Force Nurses serving on active duty. One of the major findings from this study indicated that there is a need for administrative decision making and policy changes related to nurses having to relocate every 2 to 3 years. Moving military service members and their families every few years is expensive. During the current economic times, this is an area where a cost savings might occur. Considering a policy change in this area would likely benefit both the service member and the government. Ensuring that the policy change will not affect a service members' ability to be promoted in a timely fashion is also a concern. The findings from this study are also important because this is the first study to analyze all 3 services together. Army, Navy and Air Force health care facilities are becoming joint facilities and all 3 services are having to work together in the same environment. The need to standardize practices across all services is necessary to ensure that team spirit remains across the services. Finally, a consistent review of nurses perceptions of their work environment and organizational issues is needed to ensure change continues and the voices of all generations are heard.

References Cited

Kocher, K.M., & Thomas, G.W. (1994). Retaining Army nurses: A longitudinal model. Research in Nursing and Health, 17, 59-65.

Tillman, H.J., Paradis, R.J., & Kelley, P.W. (2001, April). Correlates of junior Navy nurse corps officer retention and attrition. Paper presented at the Shea-Arentzen Nursing Symposium, Crystal City, VA.

Zangaro, G.A. (2004). Factors associated with retention of nurses: Phase I instrument testing. TSNRP funded study, MDA-905-02-1-TS10.

Summary of Dissemination

Type of Dissemination	Citation	Date and Source of Approval for Public Release
Other	Report of findings was provided to all Corps Chiefs in January 2012. In addition, a report to Congress was also provided.	TriService Approval January 2012.

Reportable Outcomes

Reportable Outcome	Detailed Description
Applied for Patent (if none, type "none")	None
Issued a Patent (if none, type "none")	None
Developed a cell line (if none, type "none")	None
Developed a tissue or serum repository (if none, type "none")	None
Developed a data registry (if none, type "none")	None

Recruitment and Retention Table

Recruitment and Retention Aspect	Number
Subjects Projected in Grant Application	9000
Subjects Available	9000
Subjects Contacted or Reached by Approved Recruitment Method	9000
Subjects Screened	N/A
Subjects Ineligible	N/A
Subjects Refused	N/A
Human Subjects Consented	9000
Subjects Who Withdrew	N/A
Subjects Who Completed Study	2602
Subjects With Complete Data	2574
Subjects with Incomplete Data	28

Demographic Characteristics of the Sample

Characteristic	
Age (yrs)	38.75±9.10
Women, n (%)	1777(69%)
Men, n (%)	777(30%)
Race	
White, n (%)	2048(80%)
Black, n (%)	320(13%)
Hispanic or Latino, n (%)	179(7%)
Native Hawaiian or other Pacific Islander, n (%)	130(5%)
Asian, n (%)	16(0.6%)
American Indian / Native American	33(1.3%)
Other, n (%)	27(1%)
Military Service or Civilian	
Air Force, n (%)	988(38%)
Army, n (%)	996(39%)
Navy, n (%)	590(23%)
Service Component	
Active Duty, n (%)	2574(100%)