

The Readiness Estimate and Deployability Index and Psychometric Properties in Army Reserve Nurses and Medics

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The Readiness Estimate and Deployability Index measures the level of individual deployment readiness in Army Nurse Corps officers. The primary purposes of this pilot study were to determine the psychometric properties of the measure for Army Reserve component nurses and enlisted medical personnel and to compare the reliability between groups. The convenience sample consisted of 92 subjects. Internal consistency reliability for three of the six competencies and construct validity using the contrasted-groups approach were examined. Nurses reported greater competency than enlisted personnel in clinical and operational nursing skills but were lower in their self-assessment of soldier and survival skills. Findings suggest that more training in warrior tasks and drills is needed for both groups and that enlisted soldiers must enhance their clinical and operational skills. Unit commanders can use the Readiness Estimate and Deployability Index to measure individual readiness.

Introduction

The U.S. Army Reserve (USAR) Medical Command provides critical medical assets to the Army. Approximately 68% of the Army's medical assets are contained in the USAR.¹ Commanders of USAR Medical Command units have the responsibility to ensure both unit collective readiness and individual professional readiness to achieve the mission of "conserving the fighting strength." Unit collective medical readiness is determined through, for example, performance at Joint Readiness Training Center exercises, which occur at predetermined times in the USAR Force Generation model. However, there is currently no metric available to a unit commander to assess individual professional readiness for deployment. It is important to have data about individual readiness because of the high volume of individual cross-leveling assignments taking place to support current operations. The Readiness Estimate and Deployability Index (READI) may be one tool that commanders can use to assist them in determining the individual professional readiness of nurses and medics; however, there has been limited evaluation of the reliability and validity of the tool in USAR populations.

The READI was developed to provide an estimate of the individual readiness of active duty Army Nurse Corps officers² and

has been used to evaluate the readiness of U.S. Army Professional Filler System (PROFIS) personnel.³ However, only one effort to determine the applicability and psychometric properties among USAR nurses or medics has been reported.⁴ The purpose of this pilot study was to ascertain whether the READI is valid and reliable in determining the individual readiness of USAR nurses and enlisted medical personnel.

Literature Review

Individual readiness has been theoretically defined as "a dynamic concept with dimensions at the individual, group, and system levels, which together influence one's ability to prepare to accomplish the mission."⁵ Operationally, individual readiness was determined to consist of six components, that is, clinical nursing competency, operational nursing competency, soldier and survival skills, personal and physical readiness, leadership and administration support, and group integration and identification. The READI contains 93 items that measure aspects of these six dimensions scaled on either a 5-point scale (ranging from not competent to totally competent, from not familiar to totally familiar, or from low to high) or a 2-point yes/no scale. Initial evaluation of the READI indicated that it was psychometrically stable, and factor analysis supported six components of individual readiness.²

Subsequent testing of the measure was performed in two groups of nurses attending the officer basic course, with published results for three of the subscales, namely, clinical nursing competency, operational nursing competency, and soldier and survival skills.⁴ The convenience sample consisted of one group of reserve component (RC) nurses ($n = 53$) and one group of active component (AC) nurses ($n = 118$), with the RC nurses having 8.5 times more clinical nursing experience than the AC nurses (average of 5.74 years vs. 0.67 years). The RC nurses were found to report higher scores for clinical competency and operational competency than AC nurses but slightly lower scores for soldier and survival skills.

Rivers et al.³ administered the READI to 131 PROFIS personnel, including 79 officers and 52 enlisted personnel. The group had an average of 7 years of enlisted time and 5.5 years of civilian experience. The results of that study indicated differences in the respondents' perceived competency based on the facility to which they were assigned. Those assigned to the William Beaumont Army Medical Center ($n = 102$) had slightly higher scores than those assigned to the Darnell Army Community Hospital ($n = 29$) in the areas of clinical nursing competency, operational nursing competency, and personal and physical readiness. In general, however, the scores for all respondents in all six competency areas were lower than reported in previous studies. The READI was revised for use with

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Air Force RC nurses and Air Force certified registered nurse anesthetists and was found to be a valid reliable measure of individual readiness in this population of military nurses.^{6,7}

Although the READI was found to be a reliable valid measure of individual professional readiness among AC Army Nurses, Air Force certified registered nurse anesthetists, and Air Force RC nurses, only one study reported the reliability of the READI among RC nurses (*n* = 53) and those nurses were attending the officer basic course, with very limited knowledge and experience in military nursing. Furthermore, the one study that included enlisted medical personnel contained a mixture of military occupational specialties, several of which do not provide direct bedside patient care (e.g., surgical technician and behavioral health technician), which might have confounded the findings. Given the need to be able to reliably ascertain individual professional readiness, it was deemed important to estimate the reliability and validity of the READI for RC nurses and medics. Therefore, the objectives of this pilot study were to estimate the reliability and validity of the READI for USAR nurses and enlisted soldiers (68W series) and to describe differences and similarities in individual readiness of USAR nurses and enlisted medical personnel.

Methods

Study Sample

A convenience sample was obtained from two USAR field hospital units in the southeastern United States in spring 2004, from a possible pool of 112 USAR nurses and 240 enlisted medical personnel (68 series). Hospital commanders and chief nurses were briefed on the study and agreed to provide time for interested individuals to complete the questionnaire during a regularly scheduled battle assembly (drill). Human subject protection was ensured by storing signed consent forms separately from the completed surveys, which were coded by identification number only. Subjects completed the informed consent form before answering the READI. The chief nurses then mailed completed questionnaires to the principal investigator, with consent forms and completed tools mailed separately. Because chief nurses were asked to distribute the READI at a regularly scheduled battle assembly, it is not known how many surveys were actually distributed.

Statistical Analyses

The reliability of the READI was determined by calculating Cronbach's α for the six competency areas. Basic statistical summaries were calculated for categorical (relative frequencies) and continuous (mean \pm SD) variables. Construct validity of the READI in this sample was estimated by using the contrasted-groups approach.⁸ The rationale for considering officers and enlisted as contrasted groups was based on two assumptions, namely, that officers would have higher scores than enlisted medical personnel in the competency areas of clinical nursing and operational nursing, because the majority worked full time in their civilian careers as registered nurses, and lower scores in the area of soldier and survival skills, because, as direct-commission RC officers, they attended only a 14-day officer basic training course and were assumed to have had minimal institutional training in basic soldier skills. Means for reliable com-

petency areas were compared between nurses and medics by using multivariate analysis of variance. In cases of detected differences, post hoc comparisons between the two groups were performed by using two-sample *t* tests with Bonferroni adjustment. Additionally, individual items were compared separately for each competency area, also using two-sample *t* tests with Bonferroni adjustment.⁹ Data analyses were performed by using SPSS 13.0 (SPSS, Chicago, Illinois) and SAS 9.1 (Cary, North Carolina) statistical software.

Results

The READI was returned by 52 officers (57%) and 40 enlisted medical personnel (43%), for a total response rate of 26% from all potential subjects (Table I). The officer/enlisted personnel distribution of those completing the READI was 1.3:1; the Army nurse/enlisted personnel ratio found on the Modified Table of Organization and Equipment is 1:2. Of the subjects, 52 soldiers (56.5%) were male and 40 (43%) were female. Twenty-one of the male respondents (40%) and 31 of the female respondents (78%) were officers. The largest proportion of officers completing the READI held the rank of major (*n* = 18; 35%), and the largest proportions of enlisted soldiers were either specialists (*n* = 11; 28%) or staff sergeants (*n* = 11; 28%). In terms of ethnicity, 59 (63%) of the respondents were Caucasian, 24 (26%) were African American, and 9 (10%) were of Hispanic/Spanish origin or ancestry.

The years of service of all respondents ranged from a minimum of 6 months to a maximum of 32 years. The average

TABLE I
SAMPLE DESCRIPTION

	No. (%)
Total sample size	92
Gender	
Female	40 (43)
Male	52 (56.5)
Ethnicity	
Caucasian	59 (63)
African American	24 (26)
Hispanic	9 (10.5)
Officers	52 (56.5)
2LT	3 (3)
1LT	16 (17)
CPT	11 (12)
MAJ	18 (35)
LTC	3 (3)
COL	0
Officer gender	
Male	21 (40)
Female	31 (60)
Enlisted personnel	40 (43)
PFC or below	3 (3)
SPC	11 (28)
SGT	7 (7)
SSG	11 (28)
SFC or higher	8 (9)
Enlisted personnel gender	
Male	31 (78)
Female	9 (22)

TABLE II
CRONBACH'S α FOR EACH READI SECTION

Section Title	Cronbach's α
Clinical nursing competency	0.97
Operational nursing competency	0.84
Soldier and survival skills	0.90
Personal and physical readiness	0.55
Leadership and administration support	0.47
Group integration and identification	0.27

number of years of service was 11.2 (SD, 8.3 years). Twenty-eight enlisted soldiers (70%) identified their military occupational specialty as emergency medical technician/licensed practical nurse (68WM6); six (15%) identified their military occupational specialty as surgical technician (68D). Twenty-four officers (46%) identified their area of concentration (AOC) as medical surgical nurse (66H00), 12 (23%) identified their AOC as critical care nurse (66H8A), and six (12%) identified their AOC as nurse practitioner (66H8E).

The first study objective was to estimate the reliability of the READI in a sample of RC nurses and enlisted medical personnel. Internal consistency reliability was determined through use of Cronbach's α . These values ranged from 0.27 to 0.97 for the different sections of the questionnaire (Table II).

The degree of internal consistency reliability for three of the sections (personal and physical readiness, leadership and administration support, and group integration and identification) was unacceptable.¹⁰ Therefore, these sections were not considered in further analyses, and the remainder of the analyses focused only on the first three competency areas of the READI, that is, clinical nursing competency, operational nursing competency, and soldier and survival skills. These are key areas to be considered in determining whether a soldier is prepared to fulfill the demands of deployment. These three sections of the READI also provide commanders with the most critical information needed for their training assessments and readiness determinations for individual soldiers.

Differences between officers and enlisted medical personnel in the means in three competency areas were detected (multivariate analysis of variance; $p < 0.0001$) (Table III). Post hoc comparisons indicated that officers considered themselves to be most competent in clinical nursing ($p < 0.0001$) and operational skills ($p = 0.0036$), whereas the enlisted medical personnel considered themselves to be most competent in soldier and survival skills ($p = 0.0125$). For these three post hoc comparisons, overall significance was established if the p value for the comparison was smaller than $0.05/3 = 0.017$. Additional analyses examined the differences between these two groups on an item-by-item basis for each competency area (Tables IV to VI).

TABLE IV
CLINICAL NURSING COMPETENCY

Variable	Competency Score (mean \pm SD)		p
	Officers	Enlisted Personnel	
Shock types	4.3 \pm 0.79	3.3 \pm 1.18	0.000 ^a
Shock care	4.4 \pm 0.85	3.2 \pm 1.21	0.000 ^a
Clinical documentation	3.0 \pm 1.34	2.6 \pm 1.15	0.138
Intravenous calculation	4.0 \pm 1.08	2.8 \pm 1.56	0.000 ^a
Orders competency	4.7 \pm 0.76	3.0 \pm 1.50	0.000 ^a
BSA competency	4.0 \pm 0.84	3.4 \pm 1.28	0.005
Triage for ICU	4.4 \pm 0.67	3.5 \pm 1.27	0.000 ^a
ACLS competency	4.0 \pm 1.05	2.6 \pm 1.45	0.000 ^a
Injury competency	4.2 \pm 0.96	3.1 \pm 1.31	0.000 ^a
NBC competency	3.1 \pm 1.01	2.8 \pm 1.03	0.130
IED competency	3.4 \pm 1.24	2.7 \pm 1.09	0.006
Pneumothorax competency	4.0 \pm 1.02	3.1 \pm 1.23	0.000 ^a
Burn competency	3.6 \pm 1.33	2.7 \pm 1.32	0.001 ^a
Blood competency	4.2 \pm 1.01	2.5 \pm 1.24	0.000 ^a
Disease non-battle injury competency	4.4 \pm 0.61	3.0 \pm 1.26	0.000 ^a
Ventilator competency	2.6 \pm 1.36	2.6 \pm 1.15	0.810
Airway competency	4.6 \pm 0.70	3.7 \pm 1.11	0.000 ^a
Category competency	4.1 \pm 0.95	3.4 \pm 1.33	0.002
Clinical competency	4.3 \pm 0.82	3.1 \pm 1.25	0.000 ^a
Refugee competency	3.3 \pm 1.40	2.8 \pm 1.25	0.40
Obstetric competency	3.1 \pm 1.34	2.6 \pm 1.26	0.58
Infection competency	3.8 \pm 1.07	3.1 \pm 1.20	0.009
Orthopedic competency	3.7 \pm 1.14	2.8 \pm 1.27	0.001 ^a
Neurological competency	3.8 \pm 0.95	2.4 \pm 1.12	0.000 ^a
PE competency	4.4 \pm 0.75	3.1 \pm 1.03	0.000 ^a
PE techniques	4.1 \pm 1.20	2.8 \pm 1.33	0.000 ^a
PE complete	4.6 \pm 0.67	3.0 \pm 1.43	0.000 ^a

BSA, body surface area; IED, improvised explosive device; ICU, intensive care unit; ACLS, advanced cardiac life support; PE, physical examination.

^a Individual $p = 0.0019 = 0.05/27$.

Table IV describes the perceived clinical nursing competency of officers and enlisted medical personnel, with higher scores representing greater perceived competency. As expected, clinical competency was significantly higher for nurses than for enlisted personnel for the majority of skills. The skills for which there was no significant difference were clinical documentation, body surface area calculation, caring for those with nuclear/biological/chemical (NBC) injuries, treating improvised explosive device or ballistic missile injuries, field ventilator competency, implementing triage categories (category competency), caring for refugees, obstetrics competency, and competency in field infection control.

TABLE III
MEANS FOR THREE AREAS OF THE READI

	Score (mean \pm SD)		
	Clinical Nursing Competency	Operational Nursing Competency	Soldier and Survival Skills
Officers	3.85 \pm 0.66	3.67 \pm 0.89	3.66 \pm 0.78
Enlisted personnel	2.93 \pm 0.93	3.09 \pm 0.95	4.05 \pm 0.67

TABLE V
OPERATIONAL NURSING COMPETENCY

Variable	Competency Score (mean ± SD)		p
	Officers	Enlisted Personnel	
EKG competency	3.7 ± 1.33	2.3 ± 1.15	0.000 ^a
Evacuation competency	3.4 ± 1.21	3.1 ± 1.12	0.314
Echelon competency	3.6 ± 1.09	2.9 ± 1.14	0.005 ^a
Report competency	4.1 ± 1.08	3.8 ± 1.07	0.313
Sanitation competency	3.9 ± 1.03	3.8 ± 1.10	0.648
DEPMEDS competency	3.4 ± 1.23	3.1 ± 1.27	0.301

EKG, electrocardiography; DEPMEDS, deployable medical system.

^a Individual $p = 0.05/6 = 0.0083$.

TABLE VI
SOLDIER AND SURVIVAL SKILLS

Variable	Score (mean ± SD)		p
	Officers	Enlisted Personnel	
M16 competency	3.5 ± 1.43	4.6 ± 0.75	0.000 ^a
9-mm competency	3.6 ± 1.09	3.4 ± 1.28	0.541
Defense competency	4.1 ± 0.92	4.2 ± 1.05	0.417
MOPP competency	3.8 ± 0.99	4.1 ± 0.96	0.158
Navigation competency	3.5 ± 0.98	4.2 ± 0.80	0.000 ^a
Weapons competency	3.6 ± 1.30	4.7 ± 0.74	0.000 ^a
Field competency	4.3 ± 0.67	4.0 ± 0.92	0.110
Decontamination	3.6 ± 1.06	3.9 ± 0.90	0.104
Geneva Convention	3.8 ± 1.14	3.9 ± 1.10	0.523
Resistance	3.6 ± 1.14	4.3 ± 0.97	0.005
Communications	3.1 ± 1.06	3.4 ± 0.97	0.101

MOPP, mission-oriented protective posture.

^a Individual $p = 0.05/11 = 0.0045$.

Significant differences between groups were reported for the skills of obtaining an electrocardiogram and understanding the echelons of care, with nurses reporting higher perceived competency. Differences between the groups in the other four skills were minimal and not statistically significant. Enlisted medical personnel rated their soldier and survival skills higher for 3 of the 11 identified skills.

There are limitations to the findings of this pilot study. First, a convenience sample was used, thus limiting the generalizability of the data. Use of a convenience sample could be a source of selection bias if only reservists with a high level of confidence in their skills completed the READI. We found, however, that the majority of the means in all six skill areas were <4 on a 5-point scale. This could suggest that the respondents were reasonably realistic in their self-assessments. Second, our sample size ($n = 92$) represents a 26% response rate from the two units selected for participation in the project. Although some would consider this an unacceptable response rate and it was lower than in previous published studies of the READI, it was deemed to be an acceptable rate of response, given that this was a pilot study. Any future research should strive to increase the sample size.

Discussion

A great deal of focus has been placed on the individual readiness of USAR soldiers in the aftermath of September 11, 2001. However, little attention has been paid to the levels of professional and operational competency and subsequent readiness of individual USAR nurses and enlisted medical personnel, many of whom have been cross-leveled out of their units to fill vacancies in other mobilizing units or to meet needs in active duty hospitals. This increase in operational tempo has highlighted concerns regarding current competency in the AOC and/or additional skill identifier of some mobilized nurses. For example, a nurse in the RC may hold the AOC/additional skill identifier of 66H8A (critical care nurse) but work as a nurse practitioner in her civilian career and not have current clinical experience in a critical care environment. This pilot study was designed to evaluate whether the READI would be a reliable valid tool in identifying the clinical and operational competency of USAR nurses and enlisted medical personnel before they were mobilized as individual "fillers" via a cross-leveling action. The objectives of this pilot study were to estimate the reliability and validity of the READI for USAR nurses and enlisted soldiers (68W series) and to describe differences and similarities in the individual readiness of USAR nurses and enlisted medical personnel.

Internal consistency reliability for three of the six competency areas of the READI ranged from 0.84 to 0.97. High reliability was expected for a tool that has been used in a variety of populations and might therefore be expected to have a stable level of reliability.¹¹ These findings are also consistent with other reports of internal consistency reliability.^{4,6}

The READI demonstrated internal consistency reliability in the competency areas of clinical nursing, operational nursing, and soldier and survival skills. Each of these competency areas contained between 11 items (operational nursing and soldier and survival skills) and 35 items (clinical nursing) (only items measured with a Likert scale are reported in this article). The length of each section, as well as the completeness of the data, influenced these estimates of reliability.

We were unable to demonstrate internal reliability for the last three of the six competency areas on the READI (personal and physical readiness, leadership and administration support, and group integration and identification). These areas had very low levels of internal consistency ($\alpha = 0.545-0.271$). These data differ from previous reports,^{4,6} in which Cronbach's α was reported to exceed 0.7 for all competency areas. Several factors might have contributed to this finding. The instrument is very lengthy and detailed, including 93 separate items (excluding demographic information), and requires ~20 to 30 minutes to complete, which might have resulted in missing data and subsequently lower levels of internal consistency. The item format is somewhat confusing, which might have resulted in missing data. Subjects also might have been somewhat unprepared for and upset by some of the items on the psychosocial readiness subscale (asking about personal preparation for their own death and the carnage seen on the battlefield), which might have caused some missing data and thus had a negative impact on reliability.

Inconsistency in the response set on items asking about related topics can affect reliability scores.¹¹ In the READI, 62 of the 93 items required the respondents to answer using a 5-point scale (Table VII). Other items asked for either a yes/no or

TABLE VII
DISTRIBUTION OF READI ITEMS BY COMPETENCY AREA

Competency Area	No. of Items				Total
	1-5 Scale	Yes/No or True/False	Range	Other	
Clinical nursing	27	4	2	2	35
Operational nursing	6	3		2	11
Soldier and survival skills	11				11
Personal and physical readiness	14	10	2	1	27
Leadership and administration support	1			4	5
Group integration and identification	3		1		4
Total	62	17	5	9	93

true/false answer. Other items asked the respondents to select from a specified list of choices, whereas still others asked respondents to select the correct answer from five possible choices. To simplify scoring and to facilitate interpretation, raw scores could be transformed onto a linear scale (such as 0-100) and responses could be combined into a single subscale score.¹²

Subjects also were inconsistent in their responses to two-part questions, which affected reliability for competency areas 4, 5, and 6. For example, when asked if they had been separated from their family/significant other for >6 months, 23 subjects responded that they had. However, when they were asked to describe their families' reaction to the separation, 43 individuals provided a response to the item.

Finally, α is influenced by the number of related items in the survey. Therefore, competency areas with fewer numbers of items would be expected to have a lower degree of internal consistency.⁷ On the READI, competency area 6 (group integration and identification) has four items covering four different topical areas (sleeping quarters, number of days training with the assigned unit, familiarity with the unit's mission, and familiarity with the duty assignment). Because there is only one item on each topic and because each topic asks for very different pieces of information, a finding of satisfactory internal consistency reliability would be unexpected.

The READI was found to be a valid measure of readiness for deployability in this sample of officers and enlisted medical personnel. Findings supported the assumption that Army nurse officers would have higher scores in their competency for clinical nursing and operational nursing, where enlisted personnel would score higher on soldier and survival skills. Only one previous report included enlisted medical personnel in the sample.³ That report did not provide an estimate of validity for their sample of 133 personnel (60% officers and 40% medical personnel), but the data provided by the comparison between their groups suggested a trend similar to the findings in this pilot study. The READI was also shown to be useful in comparing skill performance for two groups of officers.⁴

Differences between the competencies of officers and enlisted medical personnel were in the direction hypothesized. We had hypothesized that the Army nurse officers would consider themselves more competent in their clinical and operational nursing skills than the enlisted medical personnel, because larger numbers of USAR nurses work in the medical field in their civilian careers, compared with enlisted personnel. Our findings supported our assumptions about anticipated differences in nursing skills between RC officers and enlisted medical personnel. On a question-by-question basis, we can see from Table IV that, for 18 of the 27 skills, the differences between the officer and enlisted personnel groups in the means of their self-rated clinical nursing competencies were significant. These findings were less distinct in the operational nursing competency area, with the only significant differences being found in electrocardiography competency and perceived competency in performance at all echelons of care. These data are quite similar to those for the same skills for PROFIS personnel employed in military facilities.³ The consistency in reports of low competency in both electrocardiography and echelon-of-care skills across multiple samples²⁻⁴ suggests that these items need clarification.

The data were also examined to determine whether USAR nurses or enlisted medical personnel considered themselves to be below average in any of these three competency areas. Using a cutoff point of 3 (average skill performance), we identified the skills that might require specific training to enhance the clinical and operational competency levels of both officers and enlisted personnel. For the officers, additional training appears to be warranted in the use of a field ventilator. For enlisted Medical personnel, however, additional training may be necessary for the following skills: advanced cardiac life support protocols, antepartum/postpartum care, care of patients with NBC injuries, orthopedic nursing, care of patients with improvised explosive device injuries, knowledge of the five techniques used to perform a physical examination, universal blood donor protocol, clinical documentation, use of a field ventilator, 12-lead electrocardiography, caring for refugees, echelon of care, and intravenous calculation.

These data are congruent with findings on clinical competency for PROFIS personnel.³ Rivers et al.³ found that their subjects ($n = 133$), who all worked full time in fixed military facilities, rated themselves low in >50% of the clinical competency skills. Further research is needed to clarify differences in clinical competency between RC enlisted medical personnel and enlisted medical personnel on active duty.

We also anticipated that the enlisted medical personnel would consider themselves more competent in their soldier and survival skills than the officers, because they spend significant time in basic training learning these skills and could be expected to have a strong foundation in this area. Although only three questions resulted in statistically significant differences between the two groups, all differences were in the hypothesized direction. These findings are consistent with other reports showing moderate to low self-reports of soldier and survival skills for both officers and enlisted medical personnel.³ The Army's requirement to ensure that both officers and enlisted personnel are trained and proficient in warrior tasks and drills was supported.¹³

Recommendations for Revision

The READI is a reliable tool, but we recommend that it be streamlined and modified before widespread use for RC nurses and enlisted medical personnel. A version of the READI that specifically addresses skills needed for competent intensive care nursing is one possible modification that would assist in determination of 66H/8A readiness. A version specific to enlisted medical personnel (68W and 68WM6) is also suggested, because this study and the one reported by Rivers et al.³ are the first to test the READI with enlisted medical personnel. The skills used to measure clinical nursing competency are more appropriate to nursing responsibilities and do not represent the scope of practice expected of enlisted medical personnel.

We also suggest that the READI be shortened and limited to the first three competency areas and that the questions in each area use a consistent response set. The use of a 5-point Likert scale is appropriate and allows respondents sufficient latitude in their responses; furthermore, consistency in item response choices reduces chance error.^{7,11} Incorporation of additional application-level questions, which require more complex thinking⁷ and situation-specific responses, would provide stronger evidence of performance ability.

We think that such changes would enhance the utility of the READI in future evaluations of the readiness of USAR medical personnel. Furthermore, developing an electronic version of the measure, as reported by Rivers et al.,³ would allow for easy scoring by unit commanders to estimate individual readiness, as well as providing a metric for individual professional readiness.

Given the limitations in the sample size and the use of a convenience sample, it is difficult to generalize the results of this pilot study. Additionally, the validity of the READI for USAR personnel could not be estimated because of the small sample size. A minimum of 385 subjects (5 subjects per item \times 77 items) would be needed to ascertain construct validity through the use of factor analysis for the three competency areas of clinical nursing, operational nursing, and soldier and survival skills (77 items).⁸ A full-scale test of the revised instrument should include a sample of RC Army nurse officers and enlisted medical personnel selected randomly from USAR Medical Command, to mitigate issues of selection bias, internal reliability, and external validity. Further testing should also incorporate a predeployment/postdeployment test of the READI, to add to the validity and reliability of the measure.

Conclusions

The READI is a reliable tool for determining the readiness of USAR nurses and 68W series enlisted medical personnel in

terms of their clinical and operational nursing skills, as well as their soldier and survival skills. It can also be used to identify the differences in these competencies between groups of USAR medical personnel. These data support other research suggesting that individuals provide a relatively accurate assessment of their own strengths and weaknesses.¹⁴ These findings highlight the need to ensure competency in the nursing skills of enlisted medical personnel, who are less likely to work in the medical field in their civilian jobs than are Army nurses. The findings also emphasize the need to ensure competency in warrior tasks and drills for both officers and enlisted medical personnel.

The READI could be easily adapted for electronic administration, to provide a metric for individual professional readiness. This would be a valuable tool for command and control elements, commanders, and individual officer/soldiers, to use in assessing individual skill performance. A unit commander could administer the READI as part of a training assessment and use the results to build the yearly training calendar. USAR nurses and enlisted medical personnel assist in conserving the fighting strength, and having skilled personnel is critical to the achievement of this mission.

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