

**Encouraging Nurse Autonomy Through Skills Validation to Increase Dysphagia Screenings in**

**Adults**

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### Abstract

Globally as well as in the United States, dysphagia is a prevalent problem (Abu-Snieneh & Saleh, 2018; American Speech-Language-Hearing Association, 2020). Nurses primarily assess dysphagia risks and implement initial screenings as a means of secondary prevention pertaining to aspiration. There are multiple screening tools but limited data to create a standard protocol for nurse-led dysphagia screening leading to inconsistent screening, documentation, and screening techniques (Abu-Snieneh & Saleh, 2018; Dysphagia Screen - Patient Population, The Joint Commission, 2016). The purpose of this project was to determine if skills validation regarding the nurse-administered bedside swallow evaluation will help close practice gaps. The project was a six-month mixed methods design. The sample size consists of approximately 176 critical care nurses who participated in a validation process that included a pretest, post-test, and qualitative survey to determine if skills validation increases knowledge, increases screenings, and closes practice gaps related to documentation. A retrospective chart review was used to compare pre-validation and post-validation results. Post-test scores and appropriate documentation improved significantly after skills validation. No significant difference was observed in the number of referrals to speech therapy or increased screenings after validation. The qualitative survey revealed nurses believe autonomy and skills validation is necessary to appropriately screen patients for dysphagia. Nurses expressed a fundamental lack of knowledge and skill related to the dysphagia screening. Skills validation is a useful tool to increase education, improve implementation, and increase appropriate documentation of practice. More research is needed to determine if skill validation can increase the number of patients screened for dysphagia and improve patient outcomes.

*Keywords:* Autonomy, Dysphagia, Skills Validation, Nurse-led dysphagia screening, Yale Swallow Protocol, Aspiration, Critical Care Nurses, Adult Population, Practice Gap Analysis

## **Encouraging Nurse Autonomy Through Skills Validation to Increase Dysphagia Screenings in Adults**

Dysphagia is a structural or neurological problem often resulting in the inability of muscles and nerves to facilitate effective swallowing (Dysphagia, NIH, 2018). Any process that interferes with these muscles and nerves may cause dysphagia yet there is no global or domestic standard for screening patients in high-risk populations (Abu-Snieneh & Saleh, 2018; Dysphagia Screen - Patient Population, 2021). Common medical diagnoses associated with dysphagia include poor dentition, drug overdose, trauma, community acquired pneumonia, Parkinson's disease, stroke, head injury, cleft palate, cancer of the head, neck, or esophagus, and people suffering from dementia or cognitive impairment (Dysphagia, NIH, 2018).

Speech pathologists estimate one in twenty-five adults experience dysphagia annually (American Speech-Language-Hearing Association, 2020). In the general population 16% of adults over 18 years old have experienced dysphagia at some point and three percent reported weekly bouts of dysphagia (Cho et al, 2015). The conditions leading to dysphagia are more prominent in the critical care population than the general population. Moreover, when comparing dysphagia screening to other secondary screenings routinely assessed in the critical care population with a similar statistical ratio dysphagia is often underassessed (Healthcare Settings, CDC, 2019; National Institute of Mental Health, 2018).

Dysphagia is a primary risk factor contributing to poor medical outcomes including aspiration pneumonia, longer hospital stays, malnutrition, antibiotic resistance, and sepsis. Approximately 13.8% of patients hospitalized for community-acquired pneumonia will aspirate (Sanivarapu, 2019). These adverse events increase the morbidity and mortality of patients with dysphagia and significantly increase the overall cost of healthcare (Lo et al, 2018; Marin et al, 2020). Frequently, unrecognized factors influenced by dysphagia affect the quality of life for patients including malnutrition and reduced socialization increasing the vulnerability of patients (Adult Dysphagia, 2019; CDC, 2020; Howells et al, 2019).

Currently the Joint Commission, responsible for accrediting over 22,000 health care organization in the United States, only makes recommendations for screening acute neurologically impaired patients

leaving nurses with no standards for screening other populations. The lack of core measures for screening subjects patients to a higher risk of silent dysphagia and aspiration (Abu-Snieneh, & Saleh, 2018; Dysphagia Screen -Patient Population, The Joint Commission, 2021).

The fundamental absence of standardized screening protocols for the adult population creates a system dependent on nurses to autonomously assess patients at risk for dysphagia. A lack of knowledge, skills, and screening practice may contribute to inconsistent dysphagia screening and practice gaps (Dysphagia Screen - Patient Population, The Joint Commission, 2021).

### **Literature Review**

Formal skills training to teach nurses who to screen, when a patient should be screened, and how to implement screening for dysphagia has not been widely established in the health care system (Abu-Snieneh & Saleh, 2018). The American Heart Association's review of evidence-based practices for nurse-led bedside swallow evaluations recommends nurses screen patients using a validated tool such as the Yale Swallow Protocol. However, no formal tool exists to test nurses' dysphagia screening competence (Fedder, 2017).

A framework presented by the University of California in Los Angeles focuses on three mechanisms to close practice gaps: knowledge, skills, and practice (Course Planning Tip Sheet Gap Analysis, 2016). . According to the framework the initial step in a gap analysis is to determine if there is an educational deficit related to knowledge, skill, and/or practice. Knowledge is foundational to any practice. The next step is to determine if gap is due to an inability to perform a skill. Once the nurse understands the concept and how to apply the knowledge when performing the skill, it can be put into practice (Course Planning Tip Sheet Gap Analysis, 2016).

### ***Knowledge***

A skills validation process must coincide with a screening tool that increases nursing knowledge providing an accurate assessment (Abu-Snieneh & Saleh, 2018; Arbuthnott & Krätzig, 2015; Toney-Butler, 2021). The Yale Swallow Protocol with the three-ounce water challenge has a high rate of sensitivity and specificity at the bedside when administered correctly by trained nurses (Jiang, 2016; Palli,

2017; Suiter, 2014). Ward et al. (2020) found the Yale Swallow Protocol, when administered by speech pathologist, has a 95.4% rate for specificity, a positive predictive value of 77.6%, and negative predictive value of 92.4% making it an appropriate tool for a diverse group of patients. An earlier study conducted by Warner et al, (2013) found the accuracy of educated and validated registered nurses administering the Yale Swallow screening is 98%. The steps of the Yale Swallow Protocol are aligned with nursing assessment, cost effective, and efficient. The Yale Swallow Protocol screening has a simple pass or fail outcome at each step of documentation that includes assessing level of consciousness, structural problems, neurological deficits, history, and administration of the three-ounce water challenge (Fedder, 2017). The water challenge is completed by instructing the patient to consume the three ounces of water without interruption. The nurse then observes for signs of aspiration or dysphagia that include coughing, wet voice, gurgling, drooling, or adventitious breath sounds (Fedder, 2017, Suiter, 2014, The Yale Swallow Protocol, 2014). The nurse then has the responsibility to determine if the patient is safe to consume a regular diet with thin liquids or defer to the physician to order a speech therapy consult. Correct administration of the Yale Swallow protocol should not result in inappropriate referrals for speech evaluations due to high sensitivity (Jiang, 2016; Palli, 2017; Suiter, 2014).

### ***Skills***

Training deficits can be eliminated using skills validation and return demonstration (Arbuthnott & Krätzig, 2015; Course Planning Tip Sheet Gap Analysis, 2016). Incorporating the widely used process of skills validation will ensure nurses understand not only who to screen but how to implement, administer, and document screenings per the protocol. Skills validation is internationally recognized as a learning tool to ensure nurses are aware of proper application and execution of nursing practice (Clinical Governance for Nurses and Midwives National Model Clinical Governance Framework, 2017; Competency Validation Position Statement, North Carolina Board of Nursing, 2021; Nursing Skills Competency Program, 2020; Saleh, 2018; Toney-Butler, 2021).

### ***Practice***

The last dynamic addressed by literature focuses on increasing administration of dysphagia screenings in nursing practice (Course Planning Tip Sheet Gap Analysis, 2016). When implemented correctly nurse administered dysphagia screenings effectively identify patients at risk for aspiration (Edmiaston et al, 2010; Fedder, 2017). An integrative review of critical care nursing competence found autonomy, work experience, and technology improves work performance and is a vital part of job satisfaction for nurses (DeGrand et al., 2018; Labrague et al, 2018). Failure by the nurse to practice autonomy and assess patients for dysphagia can have a significant impact on the hospital length of stay increasing the average admission by three days and cost by as much as 40% (Stacie et al, 2018). Nurse administered dysphagia screenings may reduce the number of patients diagnosed with aspiration pneumonia and identify patients at risk before signs of aspiration are evident, leading to an improved quality of care and decreased healthcare cost justifying the need for increased dysphagia screenings in high-risk populations (Schrock et al, 2018). Warner et al, (2013) recommends nurses rescreen critical care patients after twenty-four hours to observe rapid improvements. Rescreening would also identify patients who have had a decline in status.

The purpose of the project was to determine if skills validation of critical care registered nurses would increase knowledge, appropriately documented bedside swallow evaluation steps, overall nurse-led screenings, rescreening, and speech therapy referrals. The study also aimed to evaluate nurses' perceptions of autonomy and skills validation regarding dysphagia screening.

## **Methods**

### **Context**

The project was a six-month mixed methods design targeting the adult critical care nursing population. A convenience sample of registered nurses with an active registered nurse license, currently practicing at the bedside in neuroscience, cardiac, surgical, and medical critical care units were asked to voluntarily participate in the study. The sample size consisted of approximately 176 critical care nurses.

### **Intervention**

Each specialty unit received one on one in-service education with pre-testing of dysphagia screening knowledge, validation with the criteria outlined in the Yale Swallow Protocol, post-validation testing, and a qualitative survey to measure nurses' perceptions about the validation process and autonomous nurse-led dysphagia screening. The validation sheets, pretest, posttest, and surveys were collected to confirm the number of registered nurses validated and marked with a four-digit code selected by the participant for comparison of pre-test and post-test scores. The code allowed for anonymity and ensured each copy was original and data was not duplicated.

All critical care nurses who met the criteria were asked to voluntarily participate in the project and were given written informed consent. Post validation, nurses were asked to consistently implement dysphagia screenings at their discretion or per physician's order. A total of 176 nurses consented to participate in the validation process and completed the pretest and posttest. At the end of a three-month implementation a pre-validation retrospective chart review of 174 randomly selected charts was done to assess the number of completed screenings and appropriate documentation compared to 155 randomly selected post-validation charts. Referrals to speech therapy were also measured during the pre-validation and post-validation periods. A qualitative survey was administered and analyzed to assess the nurses' perspectives about skills validation and the autonomy to screen patients without a physician's order.

## **Results**

### **Frequencies and Percentages**

The first goal of the validation process was to explain the documentation process and encourage nurses to complete documentation when administering dysphagia screenings for data accumulation. The most frequently observed category of Documentation Completed Correctly within the Pre-validation category of Pre-validation and Post-validation was yes ( $n = 96, 55\%$ ). The most frequently observed category of Documentation Completed Correctly within the Post validation category of Pre-validation and Post-validation was yes ( $n = 118, 69\%$ ). Correct documentation increased by 14% in the post-validation period.

### **Fisher's Exact Test**

A Fisher's exact test was conducted to examine whether Correct Documentation and Validation were independent. The results of the Fisher exact test were significant based on an alpha value of 0.05,  $p < .001$ , suggesting that Correct Documentation and Validation were related to one another.

### **Two-Tailed Paired Samples *t*-Test**

The result of the two-tailed paired samples *t*-test was significant based on an alpha value of 0.05,  $t(175) = -15.54$ ,  $p < .001$ . This finding suggests the difference in the mean of Pretest Scores and the mean of Post-test Scores were significantly different from zero. The mean of post-test scores was significantly higher than pre-test scores. The post-test scores increased by an average of 18%. The mean test score was 77.65% post-validation compared to a pre-validation score mean of 59.3%.

There was not an increase in the number of nurse-led dysphagia screenings in the post-validation period compared to the retrospective chart review, 53% of patients were screened pre-validation compared to 47% post-validation. No patients were found to be rescreened or have multiple nurse-led screenings. Patients who failed dysphagia screenings in critical care equaled 27%. Speech therapy was ordered in 14% of the pre-validation charts reviewed and 11% of the post-validation charts. The results of the Fisher exact test were not significant based on an alpha value of 0.05,  $p = .107$ , suggesting that Pre-validation and Post-validation chart review indicated referrals to speech therapy could be independent of one another. This implies that the observed frequencies were not significantly different than the expected frequencies.

The qualitative survey results indicated 96% of the population agreed the validation process improved the nurse's ability to accurately screen patients for dysphagia through new knowledge and improved skills performance. Return demonstration was indicated to be a necessary part of the validation process by 83% percent of the respondents to improve skills implementation, reinforce education, and complement individual learning styles. Validation promoted autonomous screening and added to job satisfaction according to 94% of the nurses and 95% confirmed they learned new information from the process. Nurses most common reasons for acquiring autonomy included improving quality of care for the patients, increasing independence, improving critical thinking skills, and efficiency, The most common



new information learned by nurses respectively included the amount of water to use for screening, to instruct the patient to drink the water in consecutive swallows, and the water should not contain ice. Nurses also stated they learned more about the scope of practice and nursing assessment expectations.

### **Descriptive Survey Statistics**

Of the 176 nurses surveyed 100% agreed the validation process improved their ability to accurately screen patients, 86% agreed return demonstration during validation was a necessary part of learning how to screen patients, 98% stated they were comfortable autonomously screening patients for dysphagia without a physician order after validation, 98% of nurses agreed autonomy adds to job satisfaction and 99% stated they learned new information during the validation process. During the validation process nine of the 176 participants were able to accurately complete a dysphagia screening with the appropriate amount of water and correct instructions for the patient.

### **Qualitative Survey Thematic Analysis**

Themes deduced from the analysis of the post-validation qualitative survey centered heavily on improved skills and the importance of nursing autonomy. Subjective statement frequencies indicated 46 of 90 nurses learned the appropriate amount of water to use in the screening. Visual components of skills validation were an important factor in teaching nurses the correct screening process. One nurse stated, “90mls was more than I expected” and another said, “I was not using enough water.” Thirty-four of 90 nurses learned how to instruct the patient to consume the water in consecutive swallows. Many nurses did not understand changing the way the water is administered changes the sensitivity of the screening and alters the results meaning they are operating outside of their scope of practice. A cardiac critical care nurse stated, “I learned you can fail a patient from a sip of water”, but you cannot pass a patient until they consume the full amount of water appropriately without adverse effects. Fourteen of the 90 stated they learned not to put ice in the water. A nurse wrote, “I have been screening patients incorrectly my whole career.”

Subjective reasons given for acquiring nurse autonomy were as follows; 19 of 90 stated autonomy improves quality of care for the patient, 16 of the 90 stated nurse autonomy encourages nurses to work

independently, 15 of the 90 stated nurse autonomy improves critical thinking, and 14 of 90 stated nurse autonomy improves efficiency in caring for patients. Ten percent of those surveyed believed increasing nurse autonomy shows respect for the profession. One nurse stated, “any nurse driven initiative improves patient satisfaction, speeds up care, and improves nurse satisfaction.” Other statements regarding autonomy included, “adds to critical thinking and keeps things interesting” and allows nurses to “use our critical thinking skills and rationales to make the best and most appropriate decisions for patients.” Another nurse wrote autonomy supports their ability to “know my patients’ needs and can help them in a timely fashion.”

### **Discussion**

Dysphagia screening is recognized as a nursing assessment. Therefore, critical care nurses have an obligation to practice autonomy and screen patients at risk for dysphagia. One of the primary advantages of critical care nursing is the low nurse to patient ratios. This allows the nurse to observe the patient more closely and recognize factors that contribute to dysphagia that might be missed in units with lower acuity and higher nurse to patient ratios. Compared to four percent of the general population experiencing dysphagia, patients who failed dysphagia screenings in critical care equaled 27%. However, speech therapy was only ordered in 14% of the pre-validation charts reviewed and 11% of the post-validation charts. No patients were found to be rescreened or have multiple nurse-led screenings. This could indicate there is a gap in patients that suffer dysphagia and patients that receive follow up treatment. Warner et al, (2013) recommends nurses rescreen critical care patients after twenty-four hours to observe for rapid improvements. Rescreening after twenty-four hours could also be beneficial to document a decline in status of critical care patients. Consistent screening is a vital part of providing an accurate assessment (Abu-Snieneh & Saleh, 2018; Arbuthnott & Krätzig, 2015).

Approximately nine of the 176 participants were able to accurately convey the process for screening and administering the water challenge to patients implying there is a systemic disconnect between education and initiation of nurse-led dysphagia screenings. This could be due to the lack of standardized procedures for dysphagia screenings domestically and globally (Fedder, 2017). The most

frequently misunderstood aspects of screening implementation were the amount of water to use in the challenge, how to administer the water, and how to instruct the patient to drink the water. Future education and skills validation of nurses should include the purpose of water challenge and the significance of the amount of water used. Nurses were often afraid to administer the full three ounces of water for fear of patient aspiration. Nurses were often relieved to understand a patient can fail a dysphagia screening from a small sip of water but before the patient can pass the screening and be cleared for a regular diet and thin liquids the patient must prove they can adequately manage consumption of three ounces of water. Nurses should understand though it is in their scope of practice to assess dysphagia it is outside the scope of practice to alter the screening process. Altering the amount of water given during the screening and inconsistent patient instructions changes the sensitivity of the screening and may inadvertently put patients at risk (Clinical Governance for Nurses and Midwives National Model Clinical Governance Framework, 2017; Competency Validation Position Statement, North Carolina Board of Nursing, 2021; Nursing Skills Competency Program, 2020; Saleh, 2018; Toney-Butler, 2021).

Approximately 169 nurses who completed the validation process also completed the yes and no portion of the qualitative survey. Approximately 90 of the validated nurses gave subjective responses to the survey questions. Skills validation was stated by nurses as an important factor in increasing knowledge regarding appropriate screening of patients based on the results of test scores and the qualitative survey. Nurses' most common reasons for acquiring autonomy included improving safety/quality of care for the patients, increasing independence, improving critical thinking skills, increasing respect for nurses, and efficiency. This may also reduce the workload on providers and improve job satisfaction for multiple disciplines. Job satisfaction and preventing burnout in nursing is pertinent to providing quality care (DeGrand et al., 2018; Labrague, et al, 2018). Implementation and standards for screening also varied among nurses. Skills validation ensures all nurses know the correct amount of water and how to instruct the patient to complete the water challenge. Consistent implementation will validate future data regarding dysphagia screening outcomes.

The validation process did not increase screening numbers and did not result in unnecessary referrals to speech therapy though this could have been due to patient census, nursing turnover, and airborne precautions due to the global pandemic.

### **Limitations**

The dysphagia screening validation process using criteria from the Yale Swallow Protocol was completed with 176 critical care nurses including the pre-test and post-test. Post-Implementation insights revealed the validation process is difficult to implement while nurses are responsible for caring for patients. The validation process may have been better implemented in an educational setting but was implemented during work hours as to encourage participation in the project.

Barriers to implementation included interruptions due to emergent care, environmental distractions, varying schedules, and limited time frames. The Covid-19 pandemic also complicated the outcomes due to a high rate of nurse turnover and required continuous education and validation of new nurses. Due to time constraints and limited manpower the study did not consider diagnosis or reasons for not screening patients who met criteria including mortality.

### **Conclusions**

The literature review revealed there is a lack of reliable data to support standardized dysphagia screening protocols. This project encouraged nurses to record data accurately and completely to support future research regarding dysphagia screening. There was evidence to support the inclusion of dysphagia screening as part of the annual nursing skills validation criteria, but this may be viewed as a fundamental problem to be addressed as a primary skill in nursing schools. However, this would require a standard protocol for dysphagia screening to optimize the education. Validation gives nurses the opportunity for hands on experience as well as the chance to ask questions, understand the evidence-based practice, and clarify information. In the acute care setting, validation may help establish a standard for implementation and ensure all nurses are using the same criteria to screen patients per facility protocols. Nurse-led rescreening may identify patients with acute decline in status, help patients maintain their prior level of swallowing function, prevent unnecessary nasogastric tubes, and/or prevent delays in nutritional intake

leading to better patient outcomes. More research is needed to determine if dysphagia screening validation improves patient outcomes. A broader study of diagnosis and reasons for not screening high risk patients would be useful to determine if nurses are effectively using their autonomy to screen.

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