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Clinician Survey of ASHA's Adult National Outcomes Measurement System:
Use and Attitudes

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Idaho State University

A thesis

submitted in partial fulfillment

of the requirements for the degree of

Master of Science in Speech-Language Pathology

Idaho State University

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Committee Approval

To the Graduate Faculty:

The members of the committee appointed to examine the thesis of MICHELLE WALLIOR find it satisfactory and recommend that it be accepted.

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Thu, Mar 5, 2015 at 11:34 AM

March 5th, 2015

Michelle Friesz
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RE: regarding study number IRB-FY2015-50: ASHA'S NOMS: Use and Implications for Productivity Standards and Research

Dear Ms. Friesz:

I agree that this study qualifies as exempt from review under the following guideline: Category 2: Anonymous educational tests, surveys, interviews, or observations. This letter is your approval, please, keep this document in a safe place.

Notify the HSC of any adverse events. Serious, unexpected adverse events must be reported in writing within 10 business days.

You are granted permission to conduct your study effective immediately. The study is not subject to renewal.

Please note that any changes to the study as approved must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. Contact Tom Bailey (208-282-2179; fax 208-282-4723; email: humsubj@isu.edu) if you have any questions or require further information.

Sincerely,

Ralph Baergen, PhD, MPH, CIP
Human Subjects Chair

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Abstract

This research study utilized an electronic survey to examine reporting of data to the American Speech-Language-Hearing Association (ASHA) National Outcomes Measurement System (NOMS). Specifically, given the increasing reliance on quantifiable outcomes for insurance benefits associated with the treatment of communication disorders, as well as for SLP reimbursement of services, the rationale behind this research question lies in ensuring accuracy and consistency of data reporting across NOMS participants. This system was established to meet third-party payers' desire for quantitative data regarding the effectiveness of speech-language pathologist (SLP) intervention of communication disorders in all age groups, within multiple settings (i.e., hospitals, rehabilitation facilities, private clinics, etc.). Results demonstrated inconsistent training practices among NOMS participants, with clinicians expressing both concerns and appreciation for various components of NOMS, and openness to making NOMS data available to individuals who do not collect or report data.

Clinician Survey of ASHA's National Outcomes Measurement System: Use and Attitudes

The American Speech-Language-Hearing Association's (ASHA) National Outcomes Measurement System (NOMS) is a useful system for speech-language pathologists, clients or patients, and third-party payers. NOMS is a database that provides information about the efficacy and impact of speech-language pathologist (SLP) intervention for adults with various communication and swallowing disorders. Additionally, for NOMS participants—those who report clinical data to ASHA—data are available for comparison to national outcomes; this allows for more specific information about the clinical efficacy of a particular setting (American Speech-Language-Hearing Association, 2012). In addition to the clinical benefits for clients, the Centers for Medicare and Medicaid Services' (2006) guidance document emphasized the importance of evidence-based practice as a condition of coverage for services. This highlights the fact that financial benefits for professionals necessitate a reliable outcomes measurement system.

Cognitive and communication disorders come with high costs: economically, personally, and socially. In pediatric populations, characteristics of communication disorders or delays are readily recognized as atypical, meaning the child's behavior is not developmentally appropriate, and services are provided accordingly. However, in adult populations, specifically among the elderly, it is generally expected that advancing age results in decreased cognitive ability and independence. This can impact the provision of services for adults with communication disorders, as the individuals are not expected to be fully independent. These biases and stereotypes about the aging process have wide-

ranging effects including social isolation, depression, and anxiety; this can result in limited access to services, which can lead to poverty or even homelessness (Ronch & Novotny, 2009). These effects are magnified in the presence of communication disorders, emphasizing the importance of outcomes reporting to highlight the benefits of services.

With the acceptance of ASHA's National Outcomes Measurement System by a major benefits provider, the Center for Medicare & Medicaid Services (CMS), as a trusted registry for the reporting of speech-language pathology quality measures ("NOMS approved as quality measure registry," 2010), it is important to ensure the continued reliability and validity of reported data. Further, emphasizing the accuracy of data yielded through these methods strengthens the research conducted utilizing the NOMS archive. With this in mind, the following research questions were established: Is there enough consistency in application of ASHA's National Outcomes Measurement System to provide outcomes data for speech-language pathology? How confident are practicing clinicians in the application and value of ASHA'S NOMS? Do practicing clinicians believe that NOMS data should be made available to those not participating in data collection?

Communication Disorders

Communication disorders are addressed and accounted for by ASHA's National Outcomes Measurement System with use of Functional Communication Measures (FCMs), which specifically identify speech-language pathology diagnoses including aphasia, apraxia, cognitive-communication disorders, dysarthria, dysphagia, fluency disorders, and voice disorders. For the purposes of this study, dysphagia will be included under the subheading "Communication Disorders," since swallowing disorders often co-

occur with other communication disorders and frequently exhibit similar social effects on clients, including depression, anxiety, and social isolation (Dark & Sander, 2014; Ekberg, Hamdy, Woisard, Wuttge-Hannig, & Ortega, 2002; Verdenshot, Baijens, Serroyen, Leue, & Kremer, 2013; Zhang, Huang, Wu, Chen, & Huang, 2014). Additionally, ASHA provides a designated “Functional Communication Measure” for swallowing.

ASHA defines a communication disorder as:

...impairment in the ability to receive, send, process, and comprehend concepts or verbal, nonverbal and graphic symbol systems. A communication disorder may be evident in the processes of hearing, language, and/or speech...may range in severity from mild to profound...may be developmental or acquired. Individuals may demonstrate one or any combination of communication disorders. A communication disorder may result in a primary disability or it may be secondary to other disabilities (American Speech-Language-Hearing Association, 1993).

ASHA’s definition highlights the burden inherent in a communication disorder; at its core, communication is fundamental to staving off isolation and loneliness. More than a physical disability, which can co-occur, communication impairments isolate individuals from others, both mentally and emotionally.

The World Health Organization (WHO) utilizes the International Classification of Functioning, Disability, and Health (ICF) as its framework for measuring health and disability; the principles behind ICF reinforce the assertions of the researcher that communication disorders impact individuals physically, mentally, and emotionally as they deal with changing functional and social components of their lives. As such, disability is recognized not just as a health problem, but also as “...a complex

phenomenon, reflecting the interaction between features of a person's body and features of where he or she lives" (WHO, 2015). Under this model, "disabilities" is an umbrella term that covers impairments (problems in body function or structure), activity limitations (difficulty in executing a task or activity), and participation restrictions (problem with involvement in life interactions), which may be transient or permanent.

In healthcare, quantifying these disorders and limitations is often completed through use of speech, language, and cognitive communicative rating scales. As O'Halloran, Worrall, and Hickson (2009) point out, utilizing full, standardized assessments is not always feasible within a hospital setting, due to variables such as patient fatigue and rapid changes in ability or function limit the viability of these results. They also identify that, in practical terms, administration is often difficult in an acute hospital setting. These researchers identified multiple areas that could prove problematic in establishing reliability and validity. They reported the importance of interrater agreement and demonstrated that, without sufficient rating scale detail, clear language, and established guidelines for determining if sufficient information is available to obtain a rating, disagreement occurs on level of ability. It should also be noted that O'Halloran, Worrall, and Hickson pointed out the effect of interaction between communication disorders on ratings (i.e., cognitive communicative impairment secondary to dementia) as a confounding factor for providing an accurate patient rating. Of particular import was their assertion that reliability and validity can be impacted by experience of the clinician, familiar with the rating scales in use, and familiarity with the communication disorder or population. Because of the complex effects communication disorders have on all aspects

of patient life, ensuring that the data provided in terms of treatment outcomes is valid, is of immeasurable importance.

National Outcomes Measurement System (NOMS)

The adult component of the National Outcomes Measurement System utilizes a system of fifteen, seven-point scales of Functional Communication Measures (FCMs). Depending on the areas of deficit presenting and identified for treatment, the clinician scores a client/patient on one or more of these scales at both admission and discharge. In addition to the FCM scoring, the clinician records specific demographic information during admission. This information includes age, date of admission, primary medical diagnosis, date of diagnosis onset, gender, race/ethnicity, SLP diagnosis(es), current treatment setting, treatment setting prior to admission, previous receipt of services, and funding source. The intake and discharge forms thus provide a rich source of data for research purposes.

It is important to note that the National Outcomes Measurement System is considered proprietary to ASHA. This constraint placed multiple limitations on the information available to the researcher, including the body of NOMS data available, information regarding who reports to NOMS, access to the reporting system, etc. A search of research databases including CINAHL, PubMed, and EBSCOhost revealed no information regarding validation or development of the adult NOMS component or associated FCMs. Robert Mullen (2004) discussed justification for, as well as methodological limitations and strengths of, ASHA's three NOMS databases (Adult, Pre-Kindergarten, and Schools), but did not collect quantifiable data regarding these components. Instead, he addressed the need not only for evidence supporting clinical

practice but for a means of relating these outcomes in functional, understandable ways; essentially, rather than reporting a difference in performance on a standardized assessment, instead clinicians should describe these gains in terms of functional ability and independence level. Mullen also identified the limitations of this approach; despite providing localized data (facilitating a site's ability to utilize findings based on their own patients) and having large sets of data, there are no patient controls in place (i.e., absence-of-treatment or placebo groups) to compare outcomes and no information regarding specific treatment protocols. These are significant limitations and should be addressed in research.

Despite the lack of research available, some information was obtained. T. Frymark (personal communication, October 29, 2014), Associate Director of ASHA's National Center for Evidence-Based Practice in Communication Disorders (N-CEP), member of the NOMS-developing Task Force on Treatment Outcomes and Cost Effectiveness, and the point of contact for the Adult NOMS component, provided information related to NOMS validation. She related that face validity was established through the use of 100-150 ASHA-certified SLPs; each FCM was peer-reviewed and revised throughout the developmental process. To ensure reliability prior to implementation, patient case histories were randomly selected from a range of ability levels and scored by SLPs. The task force and the National Center for Treatment Effectiveness in Communication Disorders (NCTECD) required consistency of 80% or greater for an FCM to be considered reliable.

In addition to the steps taken during development, the Adult NOMS component has several procedures in place to ensure reliability and validity of the data it collects.

This includes a specific manual for completion of admission and discharge forms, with examples for specific situations. ASHA also requires completion of an online self-study program prior to becoming a registered NOMS subscriber. It was important to identify these procedures in order to develop an exhaustive survey.

Personal impact

When deficits in communication are introduced into a person's life, the psychosocial effects are often severe. Given the very nature of communication, which is that of *interaction*, a loss in this area often results in feelings of loneliness and isolation (Heine & Browning, 2002). Given that many communication deficits are the result of stroke or traumatic brain injury (nearly 60% of individuals in the NOMS database had primary diagnoses of cerebrovascular accident [CVA], respiratory disease, or traumatic brain injury [ASHA, 2012]) there is often a physical component to their condition. For example, Flowers, Silver, Fang, Rochon, and Martino (2013) found a high rate of dysarthria among patients following a first stroke (i.e., 42%). Dysarthria is caused by weakness, paralysis, or incoordination of the muscles required for speech; there is a physical impact. These physical impacts limit a client's ability to be independent. Combined with the struggle to simply express basic needs or wants, which can also negatively impact independence, the psychological effect is magnified (Brady, Clark, Dickson, Paton, & Barbour, 2011). Continuing to hone clinical knowledge of short-term and long-term outcomes can prove beneficial in multiple ways, including establishment of the most efficacious treatment approaches and the ability to provide real data to patients regarding typical outcomes.

Economic impact

Compounding the personal impacts felt by individuals with a communication disorder are the economic impacts. As one example, Ellis, Simpson, Bonilha, Mauldin, and Simpson (2012) found that Medicare paid out an average \$20,734 in medical expenses (including services provided by hospitals, Part B providers, nursing homes, outpatient, home health, and durable medical equipment), over periods of up to 365 days for stroke patients with aphasia versus \$18,683 for those stroke patients without aphasia. They also reported that stroke with aphasia was positively correlated with greater lengths of stay, which they posited accounted for an increase in cost. Additionally, Ellis et al. (2012) reported that discharge was often to a skilled nursing facility. They suggested that aphasia was associated with increased costs related to additional lengths of stay, age, and discharge site. Other costs associated with communication disorders have less to do with the medical component and more to do with therapy and assistive devices. Wallace and Bradshaw (2011) discussed the funding difficulties associated with augmentative and alternative communication (AAC) devices. They noted that, while insurance may cover full or partial costs, the paperwork necessary is often substantial. Additionally, they noted that, in general, insurance does not cover devices costing less than \$1,000 (though waivers from Medicare or other services may be available). This can be a substantial burden for some families, particularly in conjunction with hospital or therapy bills.

It is not just the clients and families who experience this financial toll. The economic toll on the United States, from communication disorders among adults and children, may be as high as \$154 billion to \$186 billion per year in combined unemployment, underemployment, medical, habilitation, and special education costs

(Ruben, 2009). Ruben (2009) also found that communication disorders are associated with a significantly higher unemployment rate: 41.9% compared to 29.5% for the same working-age population (ages 21-58) without disability. These economic costs, both personally and nationally, emphasize the importance of reliable outcomes data. This source of accountability pushes clinicians to work harder and be more efficacious in their practice. In demonstrating the potential for positive outcomes over time, it also acts as a means of justifying continued benefits coverage for treatment.

Clients reported

The Adult User's Guide (ASHA, 2003) specifically excludes patients seen only for evaluation from NOMS reporting; since they do not receive treatment, they cannot contribute to the annual outcomes report. Additionally, adults with developmental disabilities should not be included, since their outcomes will differ from adults with a history of typical development. For the purposes of outcomes data collection, ASHA considers any individual, 16 years of age or older with a recommendation of speech and language treatment for a minimum of two sessions, as eligible for participation in NOMS.

Every patient reported under the Adult NOMS component receives a patient ID number. In order to maintain outcomes consistency and accuracy, the patient ID must be consistent across treatment settings. An area of concern might be when a client moves from a hospital setting to private care, in which case it is incumbent upon the recipient clinician to ensure continuity for NOMS reporting.

FCM limitations

In order to control for outcomes disparities, the FCMs are specifically defined for appropriate populations. Specifically, the Fluency FCM explicitly states that it is not

appropriate for individuals “who exhibit difficulty with rate and prosody as a result of a neurological impairment, cluttering, foreign dialect, or developmental disability” (American Speech-Language-Hearing Association, 2003). Instead, it would be appropriate for an adult who stutters, without an underlying neurological involvement. The Spoken Language Expression and the Writing FCMs should not be used to assess client use of an augmentative/alternative communication system (ASHA, 2003). Individuals who have had a laryngectomy or tracheostomy, or have resonance disorders, should not be scored using the Voice FCM (ASHA, 2003); a separate scale for Voice Following Laryngectomy was developed. Individuals with swallowing difficulties resulting from poor dentition alone are not applicable for the Swallowing FCM (ASHA, 2003). In order to ensure continuity, it is important to ensure that NOMS reporters are aware of and comply with these FCM restrictions, particularly when utilizing alternate methods of reporting (i.e., G-codes).

Diagnoses

The Adult NOMS user guide (2003) specifies that NOMS participants should report the primary medical diagnosis and any secondary diagnoses associated with the client’s communication deficits. The forms also allow for the addition of any unlisted ICD-9-CM codes (International Classification of Diseases, Ninth Edition, and Clinical Modification). These codes are reported separately from the communication disorder ICD-9-CM codes, which are reported under the SLP Diagnosis heading. However, participants are notified to only list SLP diagnoses for the disorder(s) they are currently treating. A possible confounding factor for reliable outcomes data could be if a client has multiple SLP diagnoses, but only one is treated (and thus reported); without that

knowledge of diagnoses, the outcomes data will not reflect the impact of one diagnosis on another. Additionally, during the development of this study, conversation with a licensed, NOMS-subscribed SLP demonstrated that some SLPs may be unaware that they can enter multiple diagnostic codes, especially when an electronic system is being utilized.

Changes during treatment

In order to control for variables during a treatment period that might impact outcomes numbers, the Add/Close FCM form enables the NOMS participant to make changes. This form allows the clinician to add a goal for treatment, or drop a goal if the client returns to pre-morbid function. Additionally, the NOMS manual (2003) states that in the event of a significant medical event, or following five consecutive missed sessions, the client must be discharged and readmitted. Ostensibly, this ensures that the outcomes data remains reliable. However, this provides another opportunity for methods breakdown, particularly if the NOMS participant is unclear on the circumstances that dictate use of the Add/Close FCM form.

Summary

These features written into the NOMS protocol are intended to ensure the reliability of outcomes data, which may, in turn, impact productivity standards. “Productivity” refers to the number of hours spent in direct patient care divided by the total number of hours worked, while “outcomes” refers to the amount of change in an individual’s communication or swallowing over a given amount of time receiving speech-language pathology services. One feature of the NOMS program is the ability of reporters to compare their outcomes to other facilities across the nation; comparing this

data to facility productivity requirements may impact acceptability of said productivity standards. However, given the complexity of the program and reporting, it is imperative to ensure methodology continuity across settings and participants. A knowledge check component to the survey was not feasible, as respondents might decide to look up answers while taking the survey, or get frustrated at being tested and exit prior to completion, which could compromise the overall study results. As such, questions targeting training and specifics of actual use were utilized to identify potential areas of weakness.

Communication Disorders and NOMS: Methodology

The current store of speech-language pathology and neurologic research examines specific communication disorders as related to specific etiologies; however, it frequently sidesteps the interaction of multiple disorders on intervention outcomes (ex: How does dysarthria impact swallowing outcomes?). This results in a piecemeal body of research, which limits the breadth of analysis possible for extrapolating to larger populations. For example, the adult NOMS database contains intervention data for over 13,000 individuals around the country (American Speech-Language-Hearing Association, 2012). With the increased focus on evidence-based practice by the public and insurance providers, this number is likely to increase, building a potentially lucrative body of research data that the United States is lacking. Given the cognitive, linguistic, and social effects that communication disorders can have, this shortage of available data poses significant limitations. One area that could prove problematic is the use of G-codes for NOMS reporting: G-codes are assigned for electronic labeling of patient conditions. These are entered into the patient's chart and then submitted to NOMS; however, because G-codes

were implemented to correspond with Medicare coding, the form reported to NOMS may differ slightly from the traditional NOMS admission and discharge forms. Additionally, there are only seven corresponding G-codes to the NOMS FCMs: Swallowing, Motor Speech, Spoken Language Comprehension, Spoken Language Expression, Attention, Memory, and Voice, with an eighth “Other SLP Functional Limitation” G-code (which does not have an FCM correspondent). Other disparities in methodology include adherence to FCM restrictions and appropriate use of add/drop FCM procedures. This emphasizes the importance of uniformity of reporting methods as a key component of current NOMS use and any future growth of the system.

This research will examine current reporting methods by NOMS participants as a means of establishing consistency of intervention outcomes data, with an emphasis on the implications for additional research and the field of communication sciences and disorders as a whole. The research questions addressed in this study are: Is there enough consistency in application of ASHA’s National Outcomes Measurement System to provide outcomes data for speech-language pathology? How confident are practicing clinicians in the application and value of ASHA’S NOMS? Do practicing clinicians believe that NOMS data should be made available to those not participating in data collection?

Methods

To address the lack of information available in the existing knowledge base regarding continuity across methods of reporting for ASHA's National Outcomes Measurement System, the researcher carried out a survey of registered NOMS participants to gain further detail on consistency of method application. Specifically, the researcher sought to obtain specific details about three components: NOMS and facility training requirements for clinicians who report data, participant adherence to the procedures in place that theoretically ensure validity and reliability of reported data, and implications for the NOMS database as a foundation for future clinical research. Here, frequency and duration of training, information on the method of reporting data to the NOMS database, knowledge of specific NOMS FCM and G-codes ratings, and frequency of use of specific ratings scales were collected to provide a complete and comprehensive view of NOMS practices across settings. Following collection and review of survey responses, the research sought to identify problem areas (such as lack of familiarity with FCMs, form completion, adding or dropping FCMs, continuity of patient identification across settings, clinician concerns, etc.) in the application of NOMS methodology in order to ascertain possible areas for improved training or reporting.

Participants

To obtain consistent and relevant data, an anonymous survey of participating NOMS reporters within the United States was conducted. Participants were primarily located and contacted through the relevant state speech, language, and hearing associations, as well as Facebook groups dedicated to practicing speech-language pathologists. In total, 80 individuals from 25 states and one individual from India initiated the survey (see

Appendix B). Of those 81 individuals who began the survey, 57 completed it; the individual from India was excluded for not meeting study criteria. In order to qualify as a study participant, individuals were required to 1) be a current, registered NOMS participant; 2) provide services to an adult population; 3) specifically report adult NOMS data. Individuals who did not treat adult clients, or who did not report data to NOMS, were directed to the end of the survey.

Additionally, in order to gain the greatest number of responses, survey questions were not designated as “forced response;” if participants wished to answer some, but not all questions, they were allowed to do so. At the end of the study period, incomplete survey responses were included with the rest of the participant responses.

Materials

This research study relied on participant self-report. Materials included an electronic survey with an embedded electronic consent as the first question (see Appendix A for all survey questions, possible responses, and guidelines for survey flow). The survey consisted of 28 questions; depending on their responses, individuals were not necessarily asked to complete all questions. Questions included yes/no, multiple-choice and three open-ended questions related to ASHA’s NOMS knowledge, training, satisfaction, and use. In addition to the survey itself, the researcher utilized scripts for recruitment and dissemination, with an information sheet identifying study aims and potential risks and benefits (See Appendix B for all recruitment materials).

Procedures

The researcher conducted an electronic survey of registered users of the adult component of ASHA’s National Outcomes Measurement System. Participants were

asked in what settings they complete NOMS reporting and their methodology (including code types and means of reporting). Additionally, they were asked questions related to type, quantity, and frequency of training. Following these questions, participants were asked opinion questions related to satisfaction with NOMS and willingness to make data available for research for non-subscribers. The survey ended with three open-ended questions regarding benefits, concerns, and improvement suggestions for NOMS. In addition to these topical questions, basic demographic information was collected, including state of practice, years of practice and caseload population.

A logical progression was utilized to tailor the survey to individual participants and ensure that each question was relevant to the participant. This progression also excluded those individuals not eligible for the survey (i.e., those not licensed as SLPs, those who work solely with the pediatric population, those who do not report to NOMS, or do not report adult outcomes to NOMS).

Data Collection & Analysis

All survey responses were collected through the *Qualtrics* online survey system. Survey data were exported into an Excel file for analysis. Charts specific to each survey question were created and stored in a separate Excel file. No identifying information was available or stored in these files. Survey responses were available to the researcher and thesis panel only.

Following the end of the study period, percentages were calculated and noted for each survey question (See Appendix C for complete survey results). Survey questions were voluntary and not forced response, therefore, some questions received more responses than others. This, combined with the small sample size and lack of true random

sampling, meant that additional statistical measures were not taken. Descriptive analysis was utilized instead to identify trends among respondents regarding the application of NOMS methodology and subjective opinions of the system.

Interpretation

The primary hypothesis was that the survey results would fail to demonstrate consistent application of the defined methodology of the adult component of ASHA's National Outcomes Measurement System, warranting the adoption of additional training practices. Specifically, disparities will be identified between settings that utilize G-codes (medical) for NOMS reporting and those that do not. It will also demonstrate the great potential for the NOMS system as a viable source of clinical data for research. These data must be made widely available to SLPs to allow for clinical decision-making in assessment and intervention. It is the researcher's intent that this study will facilitate additional interest in developing and maintaining a reliable database for research into communication disorders, and increasing awareness into the resources currently available to the practicing clinician. Additionally, encouraging the availability of data to all practicing clinicians—not just NOMS reporters—will facilitate increased participation in NOMS reporting and improve the quality of research conducted within the United States.

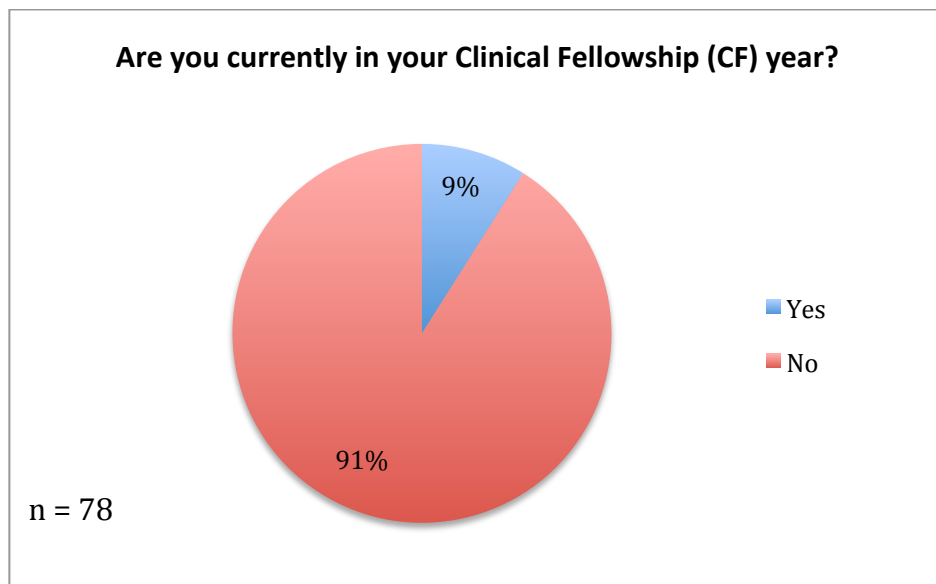
Results

The survey remained open from March 4, 2015, to March 29, 2015. In all, 81 individuals initiated the survey, with 57 completing it. Because all survey questions were voluntary, not forced response, the number of respondents for each question varied from 14 to 78 (excluding the electronic consent). For full survey results see Appendix C.

Demographics

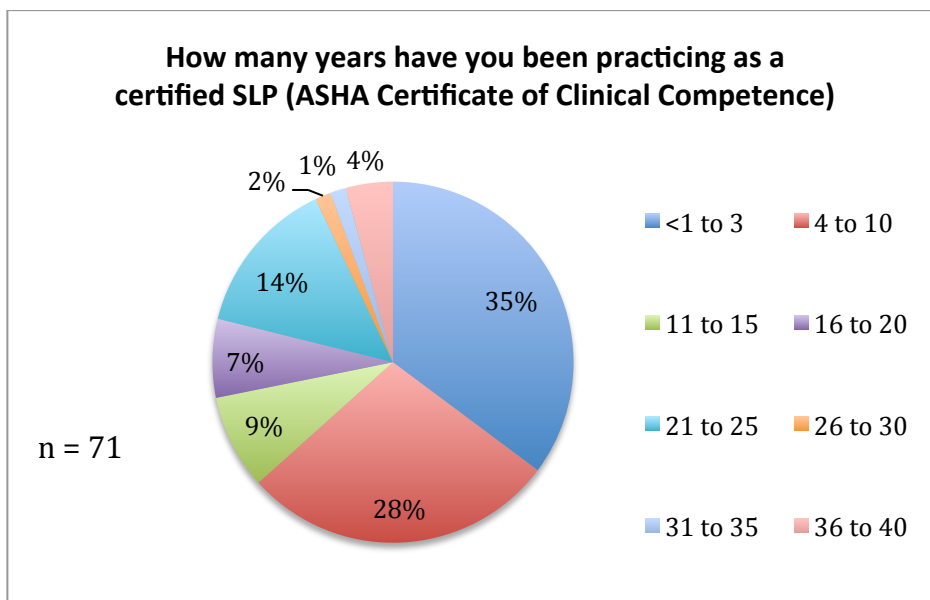
Of the 78 individuals who responded to the first question, only seven were currently completing their Clinical Fellowship (CF) year. Of those seven, five completed the survey.

Figure 1-1: Clinical Fellowship



Years of licensed clinical experience among the respondents were varied, ranging from less than one year of experience to 40. More than half of the survey participants fell in the <1 to 10 year experience range.

Figure 1-2: Years of Certified Practice



Respondents were excluded from the survey if they did not currently treat adult patients or report data for adult patients to NOMS. Although 13 respondents identified “Both Adult and Pediatric” as populations they serve, none of these individuals reported submitting pediatric data to NOMS. Following these exclusions, 40 respondents were eligible to complete the survey.

Figure 1-3: Populations Serviced

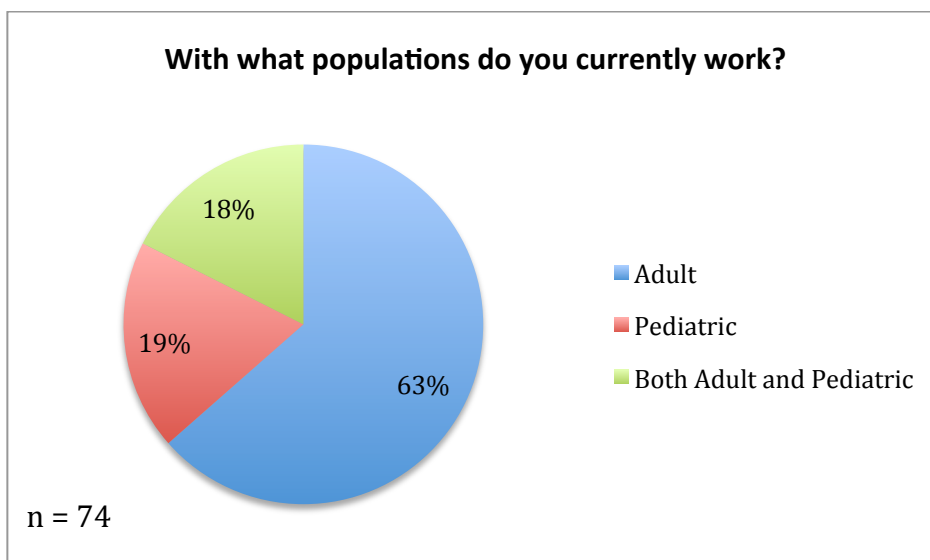
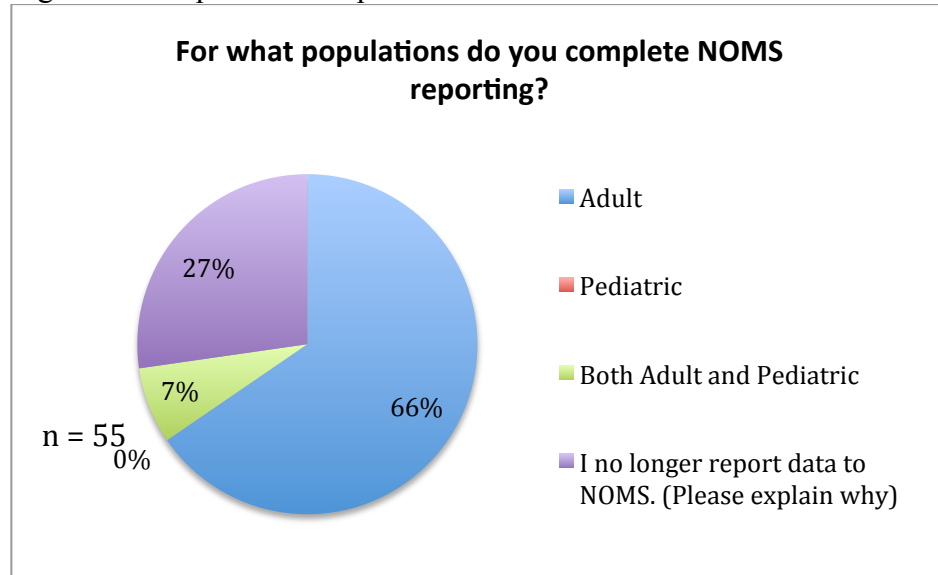
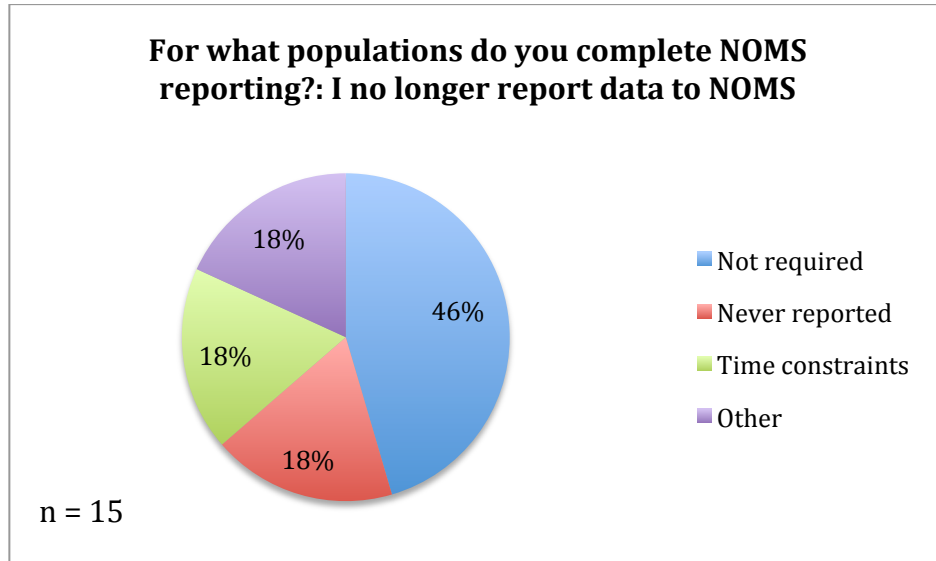


Figure 1-4: Populations Reported to NOMS



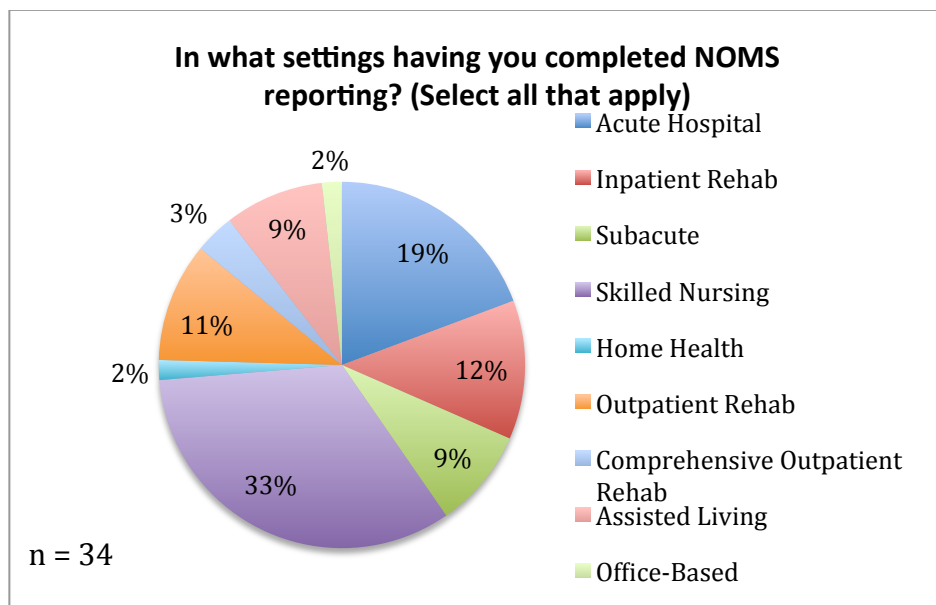
One possible answer to the question “For what populations do you complete NOMS reporting?” was “I no longer report data to NOMS (Please explain why).” Although 15 respondents selected this choice, only 11 explanations were provided. When the survey first posted, the option to provide an explanation was not included. Following feedback received via Facebook by an early respondent, the researcher added this component. The explanations provided were varied, with respondents stating they never reported to NOMS, that NOMS was not required at the facility where they currently worked, time constraints (or that it was too time consuming), and that it was utilized solely to guide G-code and FCM selection.

Figure 1-5: Reasons for Not Reporting to NOMS



The speech-language pathologists responding to the survey reported working in and providing data to NOMS from a wide range of settings. All possible setting responses were pulled from those options listed by ASHA for NOMS. The only setting not selected was “Day Treatment.”

Figure 1-6: Settings for NOMS Reporting



NOMS Training

This study sought to identify available and utilized training opportunities for NOMS participants. Of the 32 respondents who answered the question, “In addition to the NOMS-required online self-study program, did your program require mandatory training prior to your registration as a NOMS user,” only 10 reported additional required training. When asked about other training opportunities available and utilized, respondents reported the online self-study program as the primary resource, with informal, organization-provided training as the next most common. However, four individuals reported that they did not complete the self-study program (described after selecting “Other”).

Figure 2-1: Available Training Opportunities

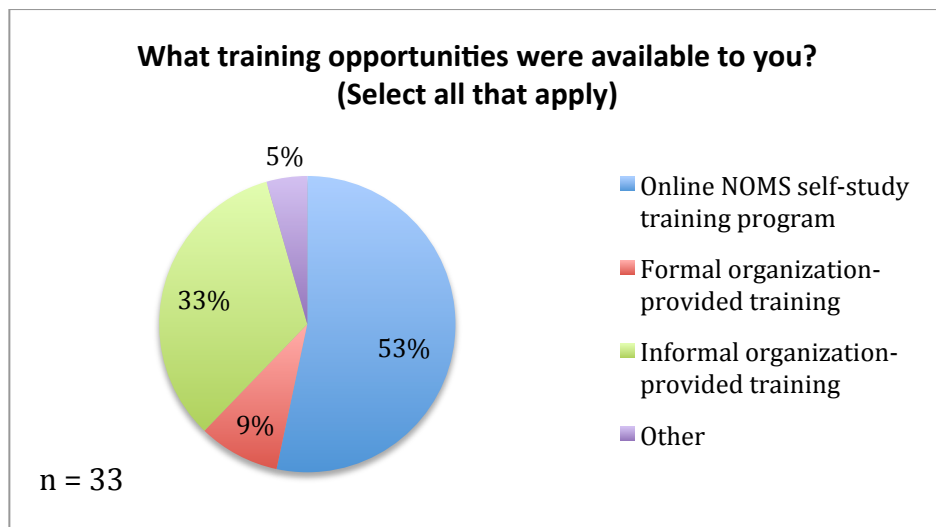
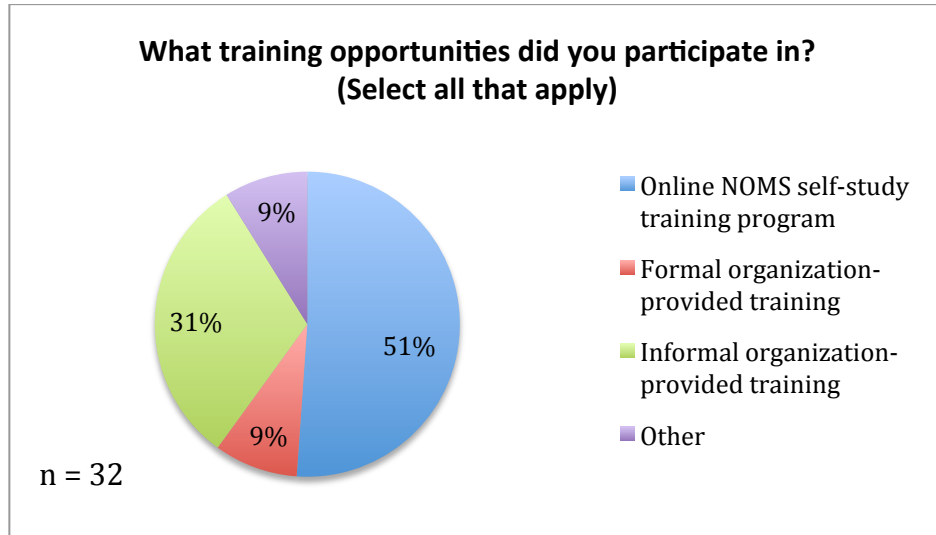
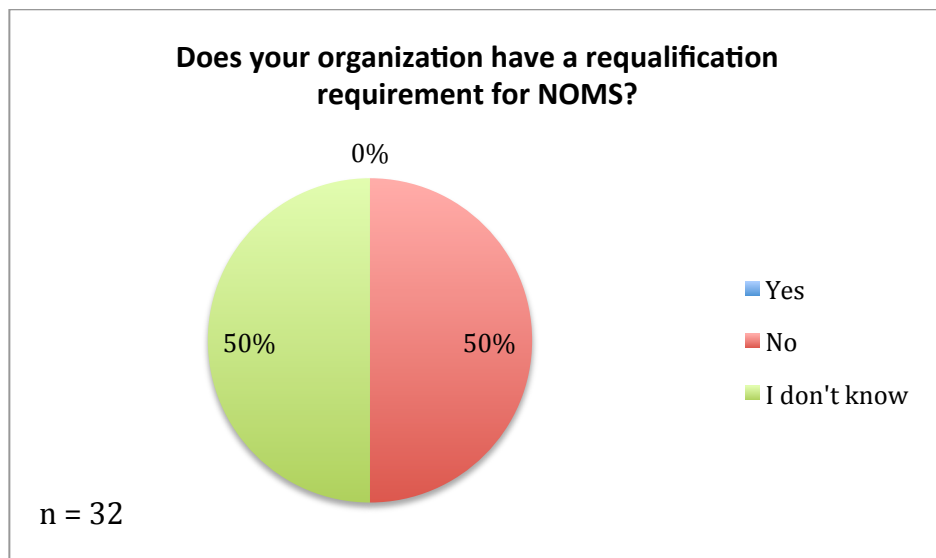


Figure 2-2: Training Opportunities Participated In



Respondents were also asked whether their organization required any requalification or continued training after the initial introduction to NOMS. Results on this question were split evenly between “No” and “I don’t know,” with no recorded instances of “Yes.”

Figure 2-3: Training Requalification Requirements



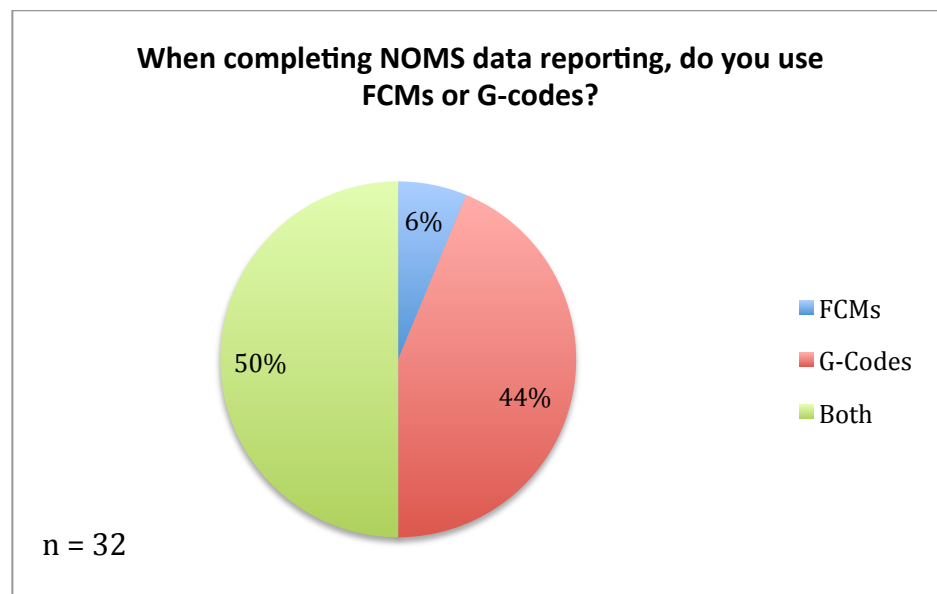
NOMS Use

In addition to length of time practicing as a licensed SLP, respondents were asked to indicate how long they have reported data to NOMS. Of the 32 total responses, 88%

(28 respondents) stated they have been using the system for three years or less, with one unknown, and only three individuals reporting durations of longer than three years.

Because of the Centers for Medicare/Medicaid Services acceptance of the National Outcomes Measurement System as a trusted registry for outcomes reporting (NOMS approved as quality measure registry, 2010), respondents were asked to identify whether they use the NOMS FCMs or G-codes for reporting. Nearly all respondents reported using G-codes, with about half of individuals using both G-codes and FCMs.

Figure 3-1: FCM or G-code Use



Depending on the response given, survey participants were asked what FCMs they have used when evaluating patients and what G-codes they have used when evaluating patients. All possible FCMs were selected by at least one SLP, though some (Alaryngeal Communication, Augmentative-Alternative Communication, Fluency, Pragmatics, Reading, Voice Following Tracheostomy, and Writing) were selected much less frequently (i.e., six or fewer times) than others. All G-codes were also selected at least once by survey participants, although with much more frequent selection across all codes;

that is, with the exception of “Other SLP Functional Limitation” which was selected six times.

Figure 3-2: FCMs Utilized

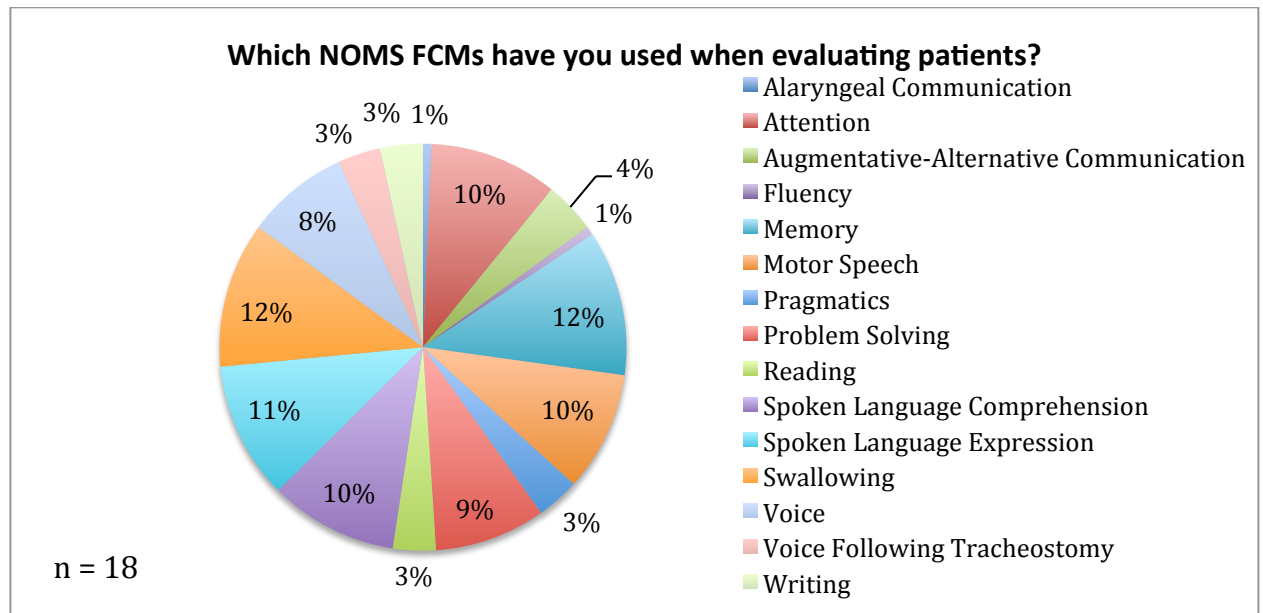
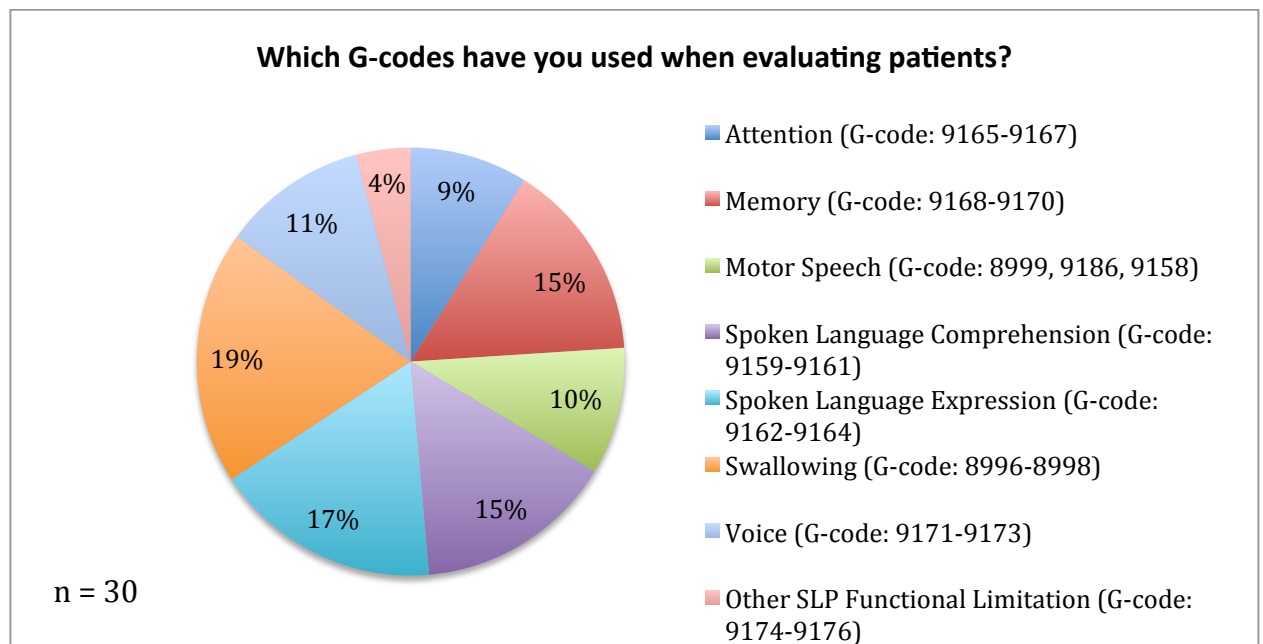


Figure 3-3: G-codes Utilized



Respondents were asked to identify up to five of the FCMs and G-codes they utilize most frequently. Survey participants demonstrated a range of selections with these questions, with only the FCMs of Augmentative-Alternative Communication, Fluency, and Reading not being selected, while all G-codes continued to be selected at least once. In examining the results of these two questions, amongst both FCM and G-code users the most frequently utilized ratings included Swallowing, Spoken Language Expression, Spoken Language Comprehension, and Memory; for FCM users, these categories made up 68% of respondent selections, while for G-code users they made up 78% of respondent selections.

Figure 3-4: FCMs Used Most Frequently

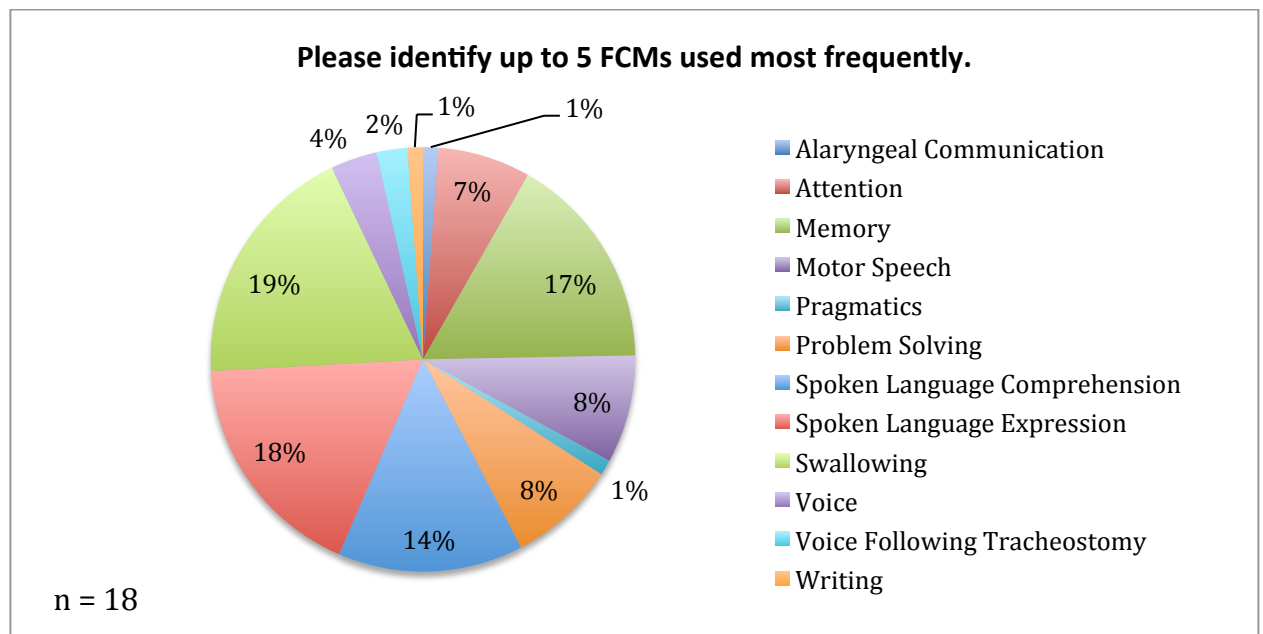
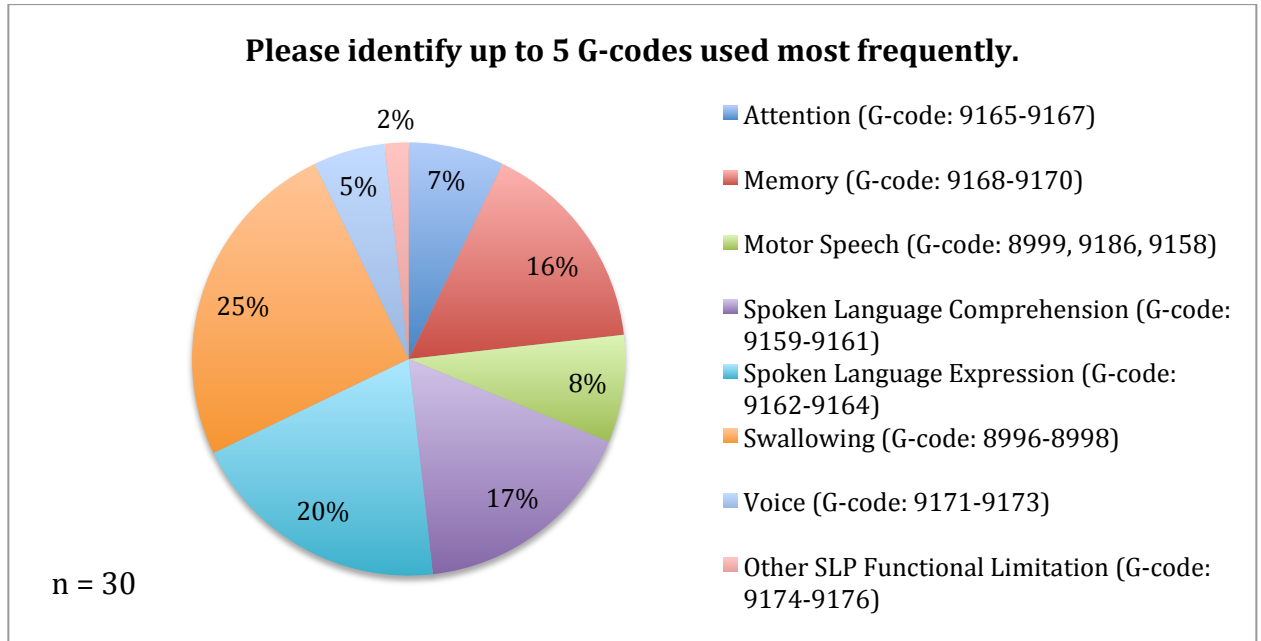
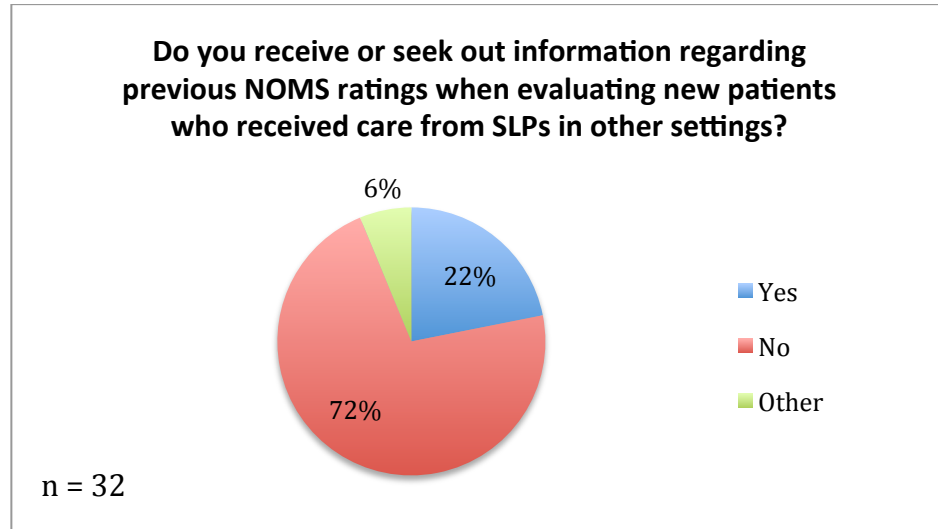


Figure 3-5: G-codes Used Most Frequently



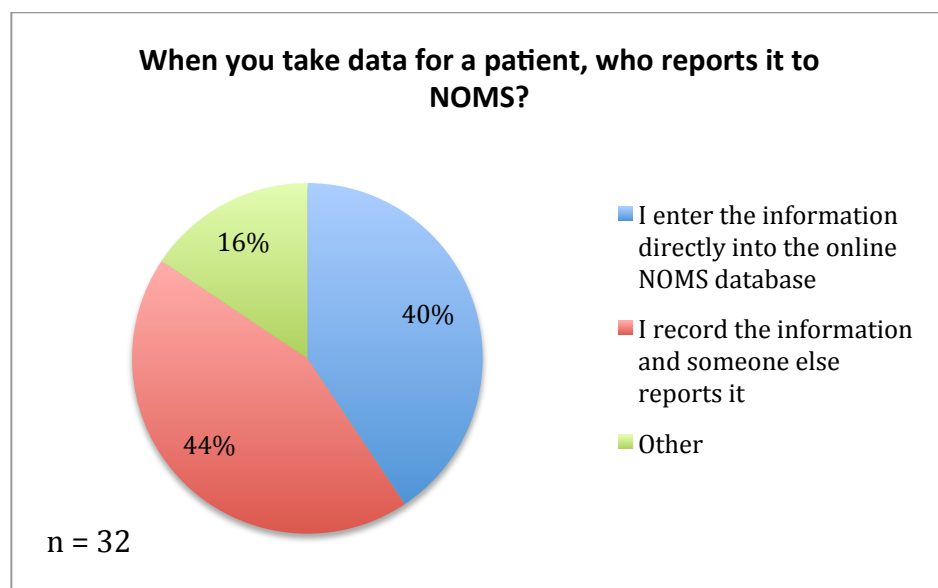
In addition to identifying FCM and G-code use, respondents were asked questions related to certain NOMS procedures. One area of interest was consistency of application across settings. The majority (78%) indicated they did not receive or seek out information regarding previous NOMS ratings when evaluating new patients who received SLP services in a previous setting. Some individuals reported looking for documentation and, upon not finding it, reported that they proceed with evaluating as new patients.

Figure 3-6: NOMS Use Across Settings



Another area of consistency targeted in the survey specifically addressed reporting. There was considerable individual variability regarding NOMS reporting procedures, with fewer than half of the respondents ($n = 13$) stating they enter data directly into the NOMS database. The rest of the respondents either indicated they recorded the information but that it is submitted by another individual ($n = 14$), or expressed uncertainty over who reported NOMS data and how it was reported ($n = 5$).

Figure 3-7: Reporting Data to NOMS



Ratings and Opinions

The last component of the survey involved subjective responses, including feelings of preparedness following training for NOMS and overall satisfaction with the purpose of NOMS in reporting outcomes data. Less than half of the respondents (n = 11; 39%) reported finding the online NOMS self-study training effective in preparing them for data collection and reporting, with the majority (n = 15; 54%) stating it was “somewhat effective.” Overall satisfaction with the purpose of NOMS in reporting outcomes data was similarly distributed, with the majority of responses split between “satisfied” (n = 12; 41%) and “neither dissatisfied or satisfied” (n = 11; 38%). More survey responders reported dissatisfaction with the purpose of NOMS (n = 5; 17%) than those who felt the training was not effective (n = 2; 7%).

Figure 4-1: Efficacy of Online NOMS Self-Study Training

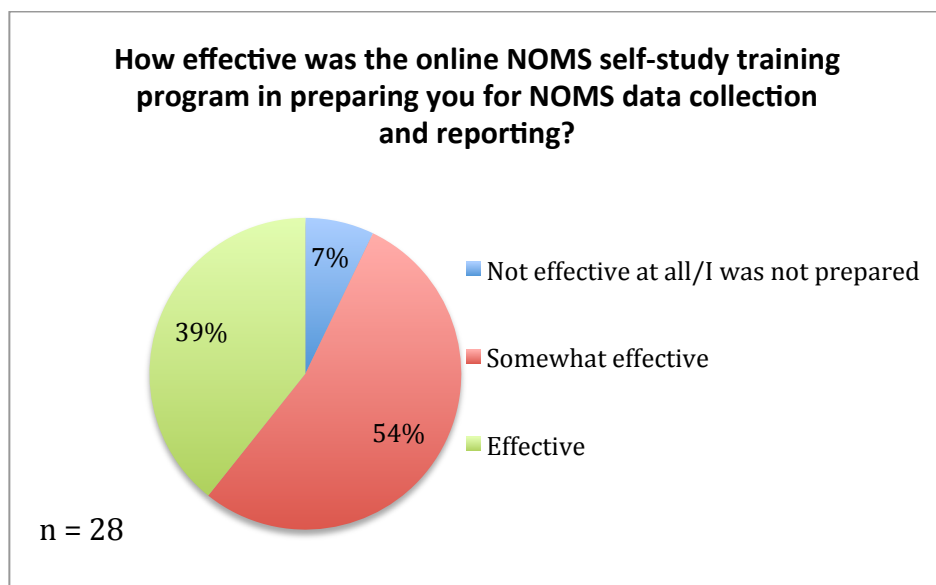
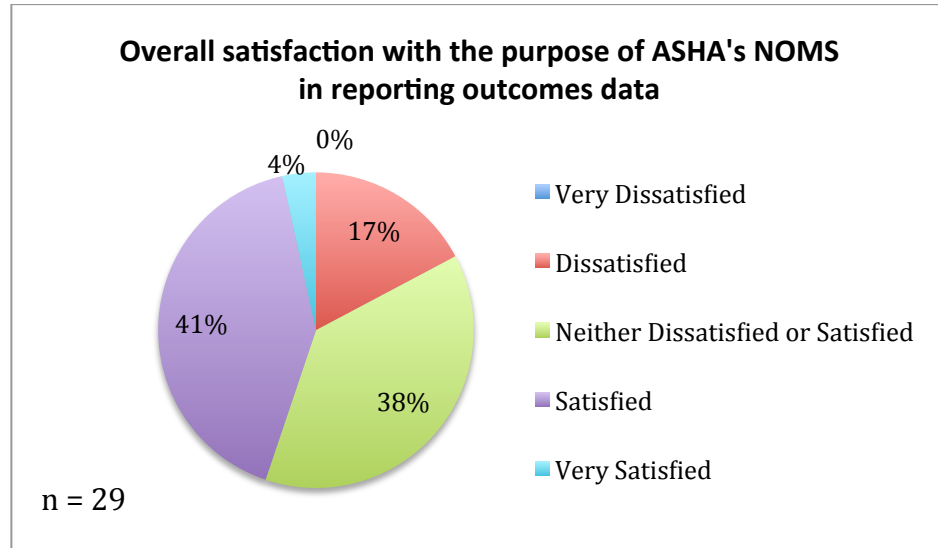


Figure 4-2: Satisfaction with NOMS



Due to the potential for valuable research data from the NOMS system, identification of NOMS participants' attitudes toward allowing open access to NOMS by non-participants was explored. Responses were split evenly amongst "yes" and "no" (n = 7 each; 23%), with the remaining majority of respondents expressing uncertainty toward the idea ("I don't know"; n = 16 respondents or 53%). These attitudes remained consistent in a strength of opinion question, with the majority expressing ambivalence ("Neither oppose nor approve"; n = 15 or 53%). These results skewed slightly toward a positive view, however, with eight respondents (29%) selecting "approve" or "strongly approve," and only five (18%) selecting "oppose" or "strongly oppose."

Figure 4-3: Support Open Access to NOMS Data

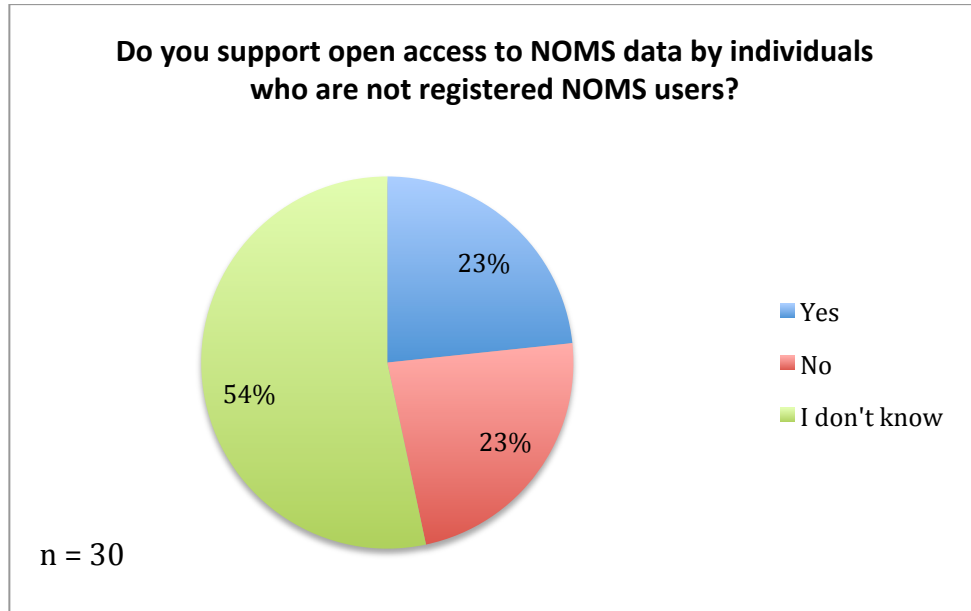
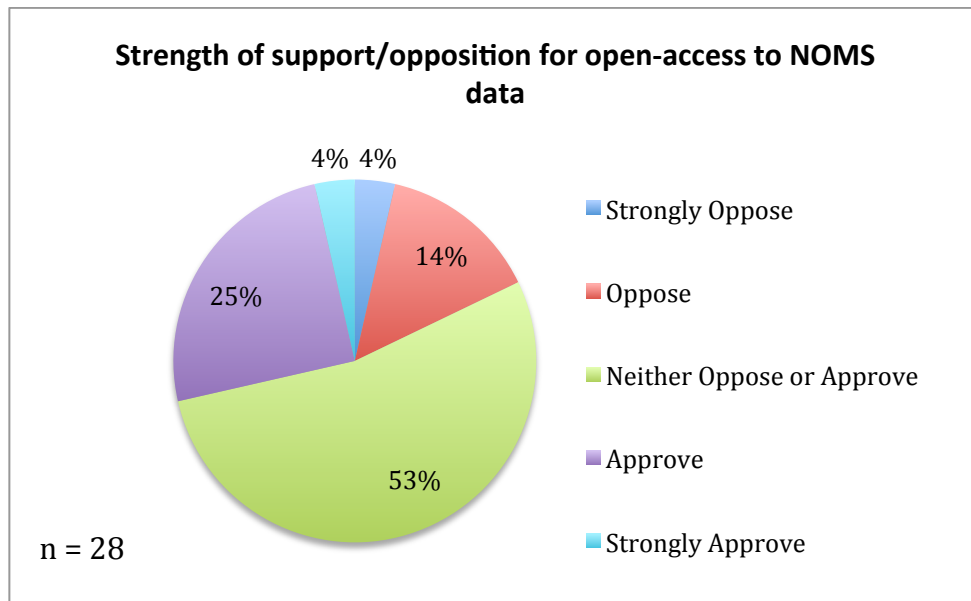


Figure 4-4: Strength of Support for Open Access to NOMS Data



The final questions of the survey were open-ended, allowing respondents to express their opinions without pre-selected choices. These questions targeted the most beneficial components of NOMS, the most concerning components of NOMS, and

suggestions for improving NOMS. Regarding benefits, 18 survey participants opted to express their opinions. Responses most frequently mentioned standardization across facilities, settings, and the field of speech-language pathology, as well as its assistance in developing appropriate and measurable patient goals, and information regarding progress and outcomes to facilitate buy-in for speech and language services. Respondents also expressed approval for the seven-point scale providing detailed levels of ability.

Respondents (17 individuals completed this section) identified several different areas of concern including: productivity and time constraints, lack of consistency of application and standards, feeling that the rating scales or modifier levels were not appropriate to their patients, and privacy concerns. Several participants reported that the system was too time-consuming, expressing that the system was too “cumbersome” or that inputting and updating information negatively impacted productivity goals. Some respondents reported a lack of consistency in application, with reasons for inconsistency ranging from concerns about insurance covering treatment (resulting in exaggeration of deficits or decline), to concerns about time/ease of reporting (resulting in errors or selection of “easiest” options), to lack of consistency from ASHA (with one respondent reporting failed training, but receiving feedback from ASHA that the answers were not “wrong”).

When asked to provide suggestions for improvement of NOMS, 14 participants responded. Desired improvements tended to address the concerns mentioned in the previous question (i.e., reliability, seamless tracking, streamline process, increased use). Other suggestions included expanded options for cognitive deficits (i.e., executive

functioning) and updated training. For a complete list of responses to the open-ended questions, refer to Appendix C.

Discussion

Is there enough consistency in application of ASHA's National Outcomes Measurement System to provide outcomes data for speech-language pathology?

Based on the results of the study, current training standards and NOMS implementation are inconsistent or unclear for practicing SLPs. While the majority of participants (73%) reported completing the online NOMS self-study training program, it was by no means universal or standardized. However, ASHA states that in order to report data to NOMS the individual must be a subscribed user, which requires completion of the online training. This finding indicates that, at least at some facilities, optimal training practices are not in use. Additionally, only 31% of respondents reported additional mandatory training requirements by their facility; of those who reported no mandatory training, over 90% reported that additional training was either unavailable or they were unaware of it.

As mentioned, the online NOMS self-study program was most often, though not universally, utilized by survey participants. This is concerning, given that ASHA requires the self-study program prior to submitting any data to NOMS. Additional training was available in the form of informal teaching, such as watching another clinician; only four participants (12-13%) reported the availability of, or participation in, formal, organization-provided training (other than the online self-study program). Without consistency of training, or adherence to ASHA training requirements, then any informal training provided may be flawed, compromising the integrity of the data provided to NOMS. This is especially important given the complexities of NOMS, particularly in the

areas of population restrictions for FCM use and the guidelines for adding or closing an FCM.

Another component that can impact the validity of data reported has to do with review of training. None of the survey respondents reported the availability or awareness of a requalification requirement for NOMS within their facility. Although all FCMs and G-codes were reported as having been used by at least one participant, many survey respondents did not have experience with certain codes. ASHA does not require any requalification or review of NOMS procedures in order to continue reporting data; however, without review of NOMS standards and requirements for FCM use, certain FCMs (particularly those less frequently encountered) may be incorrectly utilized, compromising the outcomes reports developed by NOMS.

While training practices were variable across the study sample, some survey respondents also indicated a lack of understanding for reporting data they obtained. Approximately 44% of respondents reported that they record NOMS data, but someone else submits that information to ASHA, while another 6% indicated they did not know how or if data was submitted to NOMS. This lack of understanding in regard to the collection of research data creates the opportunity for errors in reporting.

How confident are practicing clinicians in the application and value of ASHA'S NOMS?

When asked to rate different components of NOMS, such as efficacy of training or the overall purpose, responses were reserved. Although a large percentage of individuals found the training “effective” (39%), over half (54%) only rated it as “somewhat effective.” This moderate response was also seen in clinicians’ evaluation of the purpose of NOMS in reporting outcomes, with 79% of respondents split almost

evenly between “satisfied” and “neither dissatisfied or satisfied.” Only one individual felt “very satisfied” while five others reported feeling “dissatisfied.” While a lack of strong approval is preferable to strong disapproval, these results, combined with the concerns about time constraints impacting overall productivity and applicability to patients mentioned in the open-ended questions, indicates a need for more comprehensive training and education to increase clinician buy-in to the system.

Do practicing clinicians believe that NOMS data should be made available to those not participating in data collection?

Survey results indicated that participating clinicians are largely unconcerned with the question of opening the NOMS database to individuals who are not registered NOMS users (i.e., those who do not collect or report data). Over 50% of respondents stated they neither opposed nor approved of the idea, while 29% approved and only 18% opposed. These results indicate that a large proportion of NOMS users are, at minimum, open to the idea of allowing access to the NOMS database for research purposes; this proportion might increase with a requirement that access only be granted to: 1) individuals who report data to NOMS; 2) students completing research to fulfill graduate requirements; or 3) licensed clinicians or faculty ineligible to provide data to NOMS due to restrictions on university clinics.

Limitations

In order to present a balanced analysis and conclusion, it is important to recognize the limitations of the study and identify areas to address in future research. The sample size utilized in this study and the variable response rates for questions limits the amount of valid statistical analysis that can be conducted. In order to gain a comprehensive view

of current practices among registered NOMS participants, increasing the sample size and ensuring larger numbers of reporting clinicians from various settings will provide more opportunity for identifying patterns of use, consistency, and error in NOMS methodology.

Additionally, given the reports from some respondents that they did not complete the ASHA-required online NOMS self-study program, modifying the questions regarding completed training to allow respondents to describe their training may provide additional insight into current practices. In terms of open access to NOMS, including a question that specifically references access to NOMS for student and faculty researchers might prove beneficial in highlighting the underutilization of the NOMS database. This could facilitate increased support for a modification to NOMS access guidelines.

Perhaps the largest barrier to a comprehensive survey and research study was the lack of information available regarding NOMS development and validation. Although Frymark, the ASHA point of contact for the adult component of NOMS, was helpful in providing some information, the lack of printed and readily available data complicated the research process. Further, there has been little to no independent research into the use of NOMS as an outcomes-reporting system, which undermines the ability of researchers and other SLPs to make judgments on the reliability of reporting.

Conclusions

The negative impacts of communication disorders on an individual in terms of personal, social, and financial wellbeing are well established in research (Heine & Browning, 2002; Rubin, 2009; Ellis et al., 2012). The high cost of these disorders makes compiling a reliable store of outcomes data intrinsically important to both increasing

clinician accountability and to demonstrating the real benefits of our services to third-party payers. ASHA's Adult National Outcomes Measurement System, with their Functional Communication Measures rating scales, attempts to meet these clinical needs. However, due to the important role this system plays, particularly in light of the Center for Medicare & Medicaid Services' acceptance of NOMS as a trusted registry for the reporting of speech-language pathology quality measures ("NOMS," 2010), it is important to ensure the continued reliability and validity of reported data. This study's survey of NOMS use, training, and clinician outlook provides additional justification for reporting client information to the database and identifies areas of weakness to be addressed. Further, the difficulties associated with obtaining data related to communication disorders outcomes represent an opportunity to build support for a national communication disorder registry. This will ensure that the database currently available is valid and reliable, and provides a pool of significant and valuable information for clinicians and researchers.

There are multiple benefits to expanding research for reporting on communication disorders. Clinicians benefit from increased understanding of the disorders they are treating, as well as comprehension of the various ways multiple disorders influence each other. Patients benefit in multiple ways as well. If the clinician is confident in the intervention approach, that confidence reassures the patient (Hall, Dugan, Zheng, & Mishra, 2001). Further, discussing symptoms, function, and outcomes provides a more complete picture from which the patient and their family can make decisions about intervention sought, financial supports available, and expectations for recovery or improvement.

ASHA's National Outcomes Measurement System is a valuable system for tracking speech-language pathology patient outcomes, providing estimates of typical intervention timelines, and standardizing communication disorders ratings. However, as responses to this research survey indicate, consistency of training and reporting is still an issue. In order to ensure that the data reported to NOMS are consistent, continued and more extensive research is necessary to determine the most effective training approaches, increase clinician buy-in to the system, and meet the principles of evidence-based practice.

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APPENDIX A

Data Collection Survey

National Outcomes Measurement System (NOMS) Reporting and Clinical Practice

The purpose of this research is to investigate factors influencing the validity and reliability of data collected through the American Speech-Language-Hearing Association's (ASHA) National Outcomes Measurement System (NOMS) and its impact on productivity standards and clinical practice within the speech-language pathology field. This is a research project being conducted by Michelle Friesz, a second year speech-language pathology graduate student at Idaho State University (ISU), as part of her master's thesis, with assistance from Dr. Nicholas Altieri, her thesis advisor. You are invited to participate in this survey because you are a licensed speech-language pathologist (SLP) with knowledge of outcomes reporting.

Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate, you may withdraw from the survey at any time. You will not be penalized for opting out of the research study or withdrawing once you begin.

The survey will take 10-15 minutes to complete and consists of yes/no, multiple choice, rating, and three open-ended questions. Your responses will be confidential, and we do not collect any identifying information (i.e., name, email, or IP address).

Your survey responses will be kept confidential. Although there is always a small risk that survey data may be accessed in a way that results in a breach of confidentiality, all survey responses will be stored in a password-protected electronic format to best protect your privacy. The results of this survey will be used for scholarly purposes only and may be shared with ISU representatives. If you have any questions about the research study, please contact Michelle Friesz by email at wallmic8@isu.edu or by phone at (208) 447-9390. This contact information will also appear at the end of the survey.

Thank you for your time!

ELECTRONIC CONSENT: Please select your choice below.

By selecting "I agree," you indicate that:

- **You have read the above information.**
- **You voluntarily agree to participate.**
- **You are at least 18 years of age.**

○ I agree ○ I disagree If “I disagree” is selected, then skip to End of Survey
1) Are you currently in your Clinical Fellowship (CF) year? ○ Yes ○ No
2) How many years have you been practicing as a certified SLP (ASHA Certificate of Clinical Competence)? _____
3) In what state(s) do you currently practice? _____
4) With what populations do you currently work? ○ Adult ○ Pediatric ○ Both Adult and Pediatric If “Pediatric” is selected, then skip to End of Survey
5) For what populations do you complete NOMS reporting? ○ Adult ○ Pediatric ○ Both Adult and Pediatric ○ I no longer report data to NOMS (<i>Please explain why</i>) _____ If “Pediatric” or “I no longer report data to NOMS” is selected, then skip to End of Survey
The following questions are regarding the reporting of data to NOMS <i>for adult patients only.</i>
6) What month and year did you begin NOMS reporting? (<i>Estimates are okay.</i>) _____

7) In what settings* have you completed NOMS reporting? *(Please select all that apply)*

*Setting descriptions from: American Speech-Language-Hearing Association. (2012). *National Outcomes Measurement System: Adults in healthcare--Outpatient national data report 2012*. Rockville, MD: National Center for Evidence-Based Practice in Communication Disorders.

- Acute Hospital (*i.e., inpatient care provided in an acute care medical facility*)
- Inpatient Rehab (*i.e., free-standing rehab hospitals and rehab units in acute care hospitals; support intensive, interdisciplinary rehab*)
- Subacute (*i.e., comprehensive, inpatient care for acute illness, injury, or exacerbation of a chronic disease process; provided immediately following or in place of acute care; use if your program is specifically defined as a subacute program for marketing*)
- Skilled Nursing (*i.e., both skilled nursing and intermediate or extended care facilities*)
- Home Health (*i.e., services are provided in the home*)
- Outpatient Rehab (*i.e., outpatient services provided in a hospital*)
- Comprehensive Outpatient Rehab (*i.e., coordinated, comprehensive outpatient diagnostic, therapeutic, and rehab services in a single location for injuries, disabilities, and sicknesses*)
- Day Treatment (*i.e., non-residential, interdisciplinary rehab program focused on community and vocational re-integration; typically a structured group setting*)
- Assisted Living (*i.e., residential living facility with limited medical care, assistance with personal care and activities of daily living*)
- Office-Based (*i.e., any freestanding speech, language, and hearing clinic or private practice clinic*)
- Other (*Please describe*)

8) In addition to the NOMS-required online self-study program, did your organization **require mandatory** training prior to your registration as a NOMS user?

- Yes
- No

9) Did your organization provide **offer** additional training prior to your registration as a NOMS user?

- Yes
- No
- I don't know

Display if "No" was selected in question 8

10) What training opportunities were available to you prior to becoming a NOMS user? <i>(Please select all that apply)</i> ☐ Online NOMS self-study training program ☐ Formal organization-provided training <i>(i.e., designated block of time set aside for NOMS training)</i> ☐ Informal organization-provided training <i>(i.e., having you watch another employee complete NOMS reporting, etc.)</i> ☐ Other <i>(Please describe)</i> _____
11) What training opportunities did you participate in prior to becoming a NOMS user? <i>(Select all that apply)</i> ☐ Online NOMS self-study training program ☐ Formal organization-provided training <i>(i.e., designated block of time set aside for NOMS training)</i> ☐ Informal organization-provided training <i>(i.e., having you watch another employee complete NOMS reporting, etc.)</i> ☐ Other <i>(please list)</i> _____
12) Do you know who your NOMS Subscriber <i>(i.e., the liaison between your organization and ASHA)</i> is? ☐ Yes ☐ No
13) Does your organization have a “refresher course” requirement for NOMS (ex: re-qualify 1x/year) ☐ Yes <i>(Please describe)</i> _____ ☐ No ☐ I don’t know
14) When completing NOMS data reporting, do you use Functional Communication Measures (FCMs) or G-codes? ☐ I use FCMs ☐ I use G-codes ☐ I use both FCMs and G-codes
15) Which of the NOMS Functional Communication Measures (FCMs) have you used when evaluating patients? <i>(Please select all that apply)</i> ☐ Alaryngeal Communication ☐ Attention ☐ Augmentative-Alternative Communication ☐ Fluency ☐ Memory ☐ Motor Speech ☐ Pragmatics ☐ Problem Solving

○ Reading ○ Spoken Language Comprehension ○ Spoken Language Expression ○ Swallowing ○ Voice ○ Voice Following Tracheostomy ○ Writing Display if “I use FCMs” or “I use both FCMs and G-codes” are selected in question 14
16) Please identify up to 5 FCMs that you use most frequently? ○ Alaryngeal Communication ○ Attention ○ Augmentative-Alternative Communication ○ Fluency ○ Memory ○ Motor Speech ○ Pragmatics ○ Problem Solving ○ Reading ○ Spoken Language Comprehension ○ Spoken Language Expression ○ Swallowing ○ Voice ○ Voice Following Tracheostomy ○ Writing Display if “I use FCMs” or “I use both FCMs and G-codes” are selected in question 14
17) Which G-codes have you used when evaluating patients? <i>(Please select all that apply)</i> ○ Attention (G-code: 9165-9167) ○ Memory (G-code: 9168-9170) ○ Motor Speech (G-code: 8999, 9186, 9158) ○ Spoken Language Comprehension (G-code: 9159-9161) ○ Spoken Language Expression (G-code: 9162-9164) ○ Swallowing (G-code: 8996-8998) ○ Voice (G-code: 9171-9173) ○ Other SLP Functional Limitation (G-code: 9174-9176) Display if “I use G-codes” or “I use both FCMs and G-codes” are selected in question 14
18) Please select up to 5 G-codes that you use most frequently. ○ Attention (G-code: 9165-9167) ○ Memory (G-code: 9168-9170) ○ Motor Speech (G-code: 8999, 9186, 9158)

○ Spoken Language Comprehension (G-code: 9159-9161) ○ Spoken Language Expression (G-code: 9162-9164) ○ Swallowing (G-code: 8996-8998) ○ Voice (G-code: 9171-9173) ○ Other SLP Functional Limitation (G-code: 9174-9176) Display if “I use G-codes” or “I use both FCMs and G-codes” are selected in question 14
19) Do you receive or seek out information regarding previous NOMS ratings when evaluating new patients who received care from SLPs in other settings? ○ Yes ○ No ○ Other (<i>Please describe</i>)
20) When you take data for a patient (i.e., at admission or discharge, when adding or closing an FCM, etc.), who reports it to NOMS? ○ I enter it directly into the online NOMS database ○ I record the information and someone else enters it into the online NOMS database. ○ Other (<i>Please describe</i>)
21) Please rate your satisfaction with the online self-study training program provided by ASHA. ○ Very Poor ○ Poor ○ Neither Poor or Good ○ Good ○ Very Good
22) Please rate how effective the online self-study training program was in preparing you for NOMS data collection and reporting: ○ Not effective at all/I was not prepared ○ Somewhat effective ○ Effective
23) Please rate your overall satisfaction with the purpose of ASHA’s NOMS in reporting outcomes data: ○ Very Dissatisfied ○ Dissatisfied ○ Neither Dissatisfied or Satisfied ○ Satisfied ○ Very Satisfied

24) Do you support open access to NOMS data by individuals who are not registered NOMS users (i.e., do not collect or report data)? ☐ Yes ☐ No ☐ I don't know
25) Please rate how strongly you approve or oppose allowing those who are not registered NOMS users (i.e., do not collect or report data) to have access to the NOMS database: ☐ Strongly Oppose ☐ Oppose ☐ Neither Oppose or Approve ☐ Approve ☐ Strongly Approve
26) Please provide your comments regarding the most beneficial components of NOMS: _____
27) Please provide your comments regarding the most concerning components of NOMS: _____
28) Please provide your suggestions for improvement of NOMS. _____

APPENDIX B

Recruitment Announcements and Information Sheet

Survey Recruitment Email

Dear [Organization],

My name is Michelle Friesz. I am a graduate student in the Communication Sciences & Disorders department at Idaho State University. I am conducting an ***anonymous*** survey about the American Speech-Language-Hearing Association's (ASHA) Adult National Outcomes Measurement System (NOMS) to examine the accuracy and reliability of the data collected for productivity standards within the speech-language pathology field. Additionally, I am hoping to identify areas of concern and strengths as reported by practicing clinicians, and gain insight into their recommendations for improved reporting. To participate, the respondent must be a speech-language pathologist who uses or has used NOMS to report patient ratings and outcomes. The survey is voluntary.

At this time, I need assistance in distributing the survey to practicing clinicians, and hope that you can help. I have attached an information sheet regarding my research.

If you have any questions, concerns, or suggestions, please contact me by email at

wallmic8@isu.edu or phone (208) 447-9390.

Thank you for your time,

Michelle Friesz
Idaho State University
CSD Graduate Research Assistant

Survey Email

Good [morning/afternoon]!

My name is Michelle Friesz. I am a graduate student in the Communication Sciences & Disorders department at Idaho State University. I am conducting an ***anonymous*** survey about the American Speech-Language-Hearing Association's (ASHA) adult National Outcomes Measurement System (NOMS) to examine the accuracy and reliability of the data collected for productivity standards within the speech-language pathology field. Additionally, I am hoping to identify areas of concern and strengths as reported by practicing clinicians, and gain insight into their recommendations for improved reporting. To participate, the respondent must be a speech-language pathologist who uses NOMS to report patient ratings and outcomes. The survey is voluntary, and you may withdraw at any time.

Your time and assistance is greatly appreciated! I have attached an information sheet regarding my research. If you have any questions, concerns, or suggestions, please contact me by email at wallmic8@isu.edu or phone (208) 447-9390.

Please follow the below link to reach the survey. The survey ***must*** be accessed from a laptop or desktop computer.

https://isudhs.az1.qualtrics.com/SE/?SID=SV_bOZJKGj7vVi6jVr

Thank you for your time,

Michelle Friesz
Idaho State University
CSD Graduate Research Assistant

Follow-Up Survey Email

Good [morning/afternoon]!

My name is Michelle Friesz, I am a graduate student in the Communication Sciences & Disorders department at Idaho State University. I recently sent an email about an ***anonymous*** survey regarding the American Speech-Language-Hearing Association's (ASHA) adult National Outcomes Measurement System (NOMS).

This is a reminder that the survey will close March 29th at 11:55pm (Mountain Time Zone). Your time and assistance is greatly appreciated! I have attached an information sheet regarding my research. If you have any questions, concerns, or suggestions, please contact me by email at wallmic8@isu.edu or phone (208) 447-9390.

If you have already participated in this survey, thank you! If you have not, please follow the below link. The survey ***must*** be accessed from a laptop or desktop computer.

https://isudhs.az1.qualtrics.com/SE/?SID=SV_bOZJKGj7vVi6jVr

Thank you for your time,

Michelle Friesz
Idaho State University
CSD Graduate Research Assistant

Information Sheet for Survey:
*ASHA's National Outcomes Measurement System (NOMS)—Use and Implications for
Productivity Standards and Research*

Purpose: The purpose of this research is to investigate factors influencing the validity and reliability of the data collected for productivity standards within the speech-language pathology field, through use of the Adult component of ASHA's NOMS. Information including general knowledge of the system, training, and opinion regarding areas of concern and strength, as reported by practicing clinicians, as well as insight into recommendations for improved reporting, is sought.

Participants: Participants must be speech-language pathologists who use NOMS to report patient ratings and outcomes. SLP aides or assistants are not eligible to participate in this survey.

Procedure: The survey should take approximately 10-15 minutes to complete and consists of approximately 28 questions. Questions include yes/no, multiple-choice, and three open-ended questions related to ASHA's NOMS knowledge, training, satisfaction, and use. Participants will be asked in what settings they have completed NOMS reporting and their methodology (including code types and means of reporting). Additionally, they will be asked questions related to type and quantity of training. Following these questions, participants will be asked opinion questions related to satisfaction with NOMS and willingness to make data available for research for non-subscribers. The survey will end with three open-ended questions regarding benefits, concerns, and improvement suggestions for NOMS. In addition to these topical questions, basic demographic information will be collected, including state of practice, years of practice and caseload population.

Risks and Benefits: There are no identifiable risks in this survey. There is always a small risk that survey data may be accessed in a way that results in a breach of confidentiality; however, no information that could be used to identify participants will be collected. Additionally, all survey responses will be stored in an electronic, password-protected format. There are no direct benefits or compensation provided to survey participants. However, participation may help to improve understanding and implementation of productivity data collection and standards.

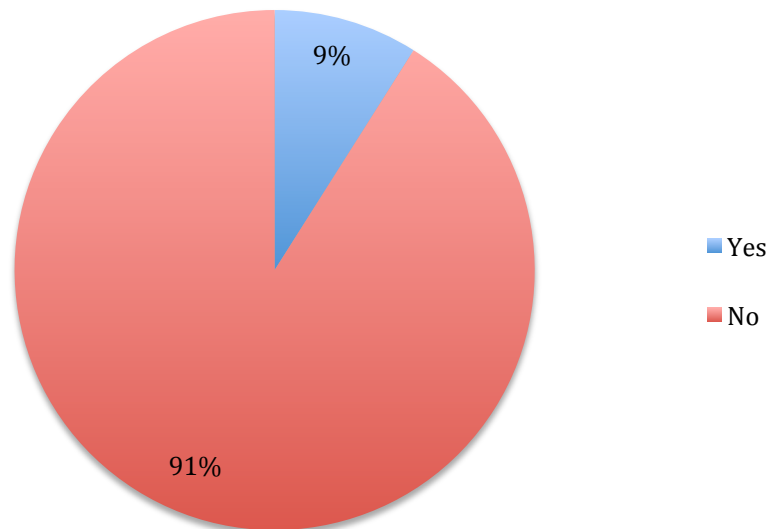
Results: Participants will respond to questions about NOMS reporting related to Functional Communication Measures (FCMs), G-codes, or both. The data will be analyzed primarily by Michelle Friesz, a master's degree student in Speech-Language Pathology, for her master's thesis with assistance from Dr. Nicholas Altieri, her thesis advisor. All information will be kept for analysis for two years or until manuscripts have been accepted for publication.

Contact: If you have any questions about the study, please contact Michelle Friesz by email at wallmic8@isu.edu or by phone at (208) 447-9390.

APPENDIX C

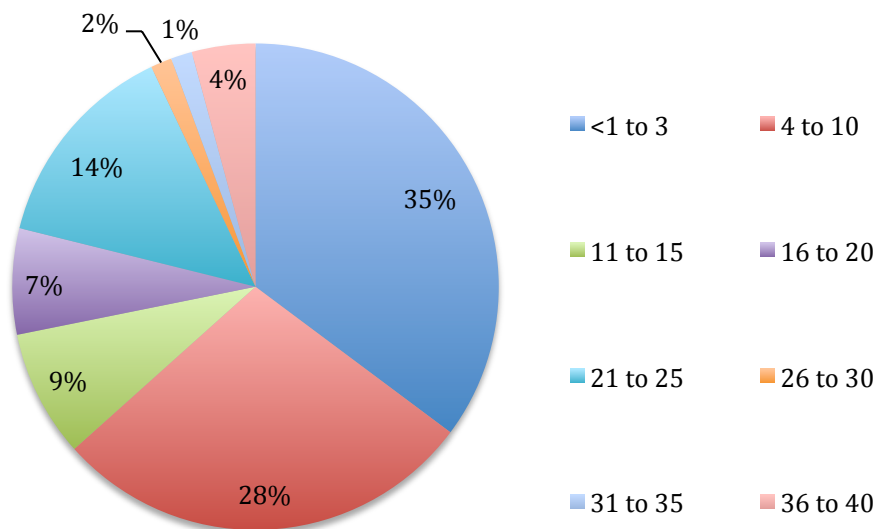
Survey Question Response Charts

Are you currently in your Clinical Fellowship (CF) year?

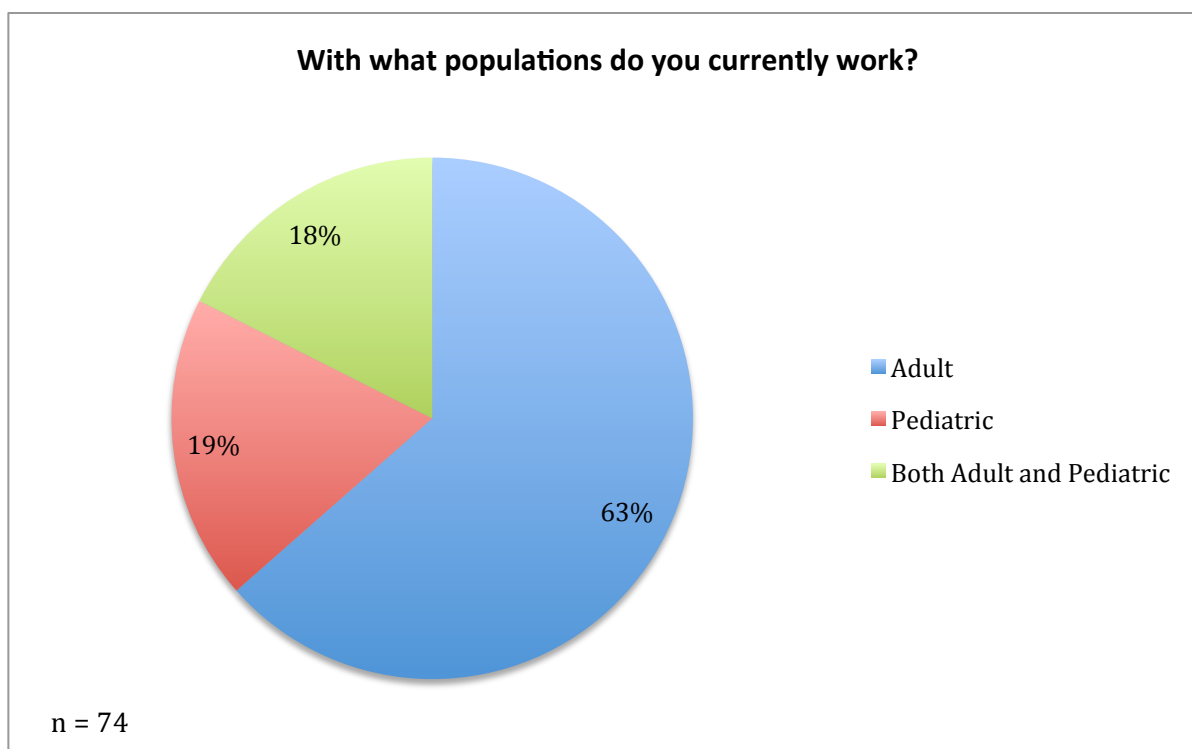
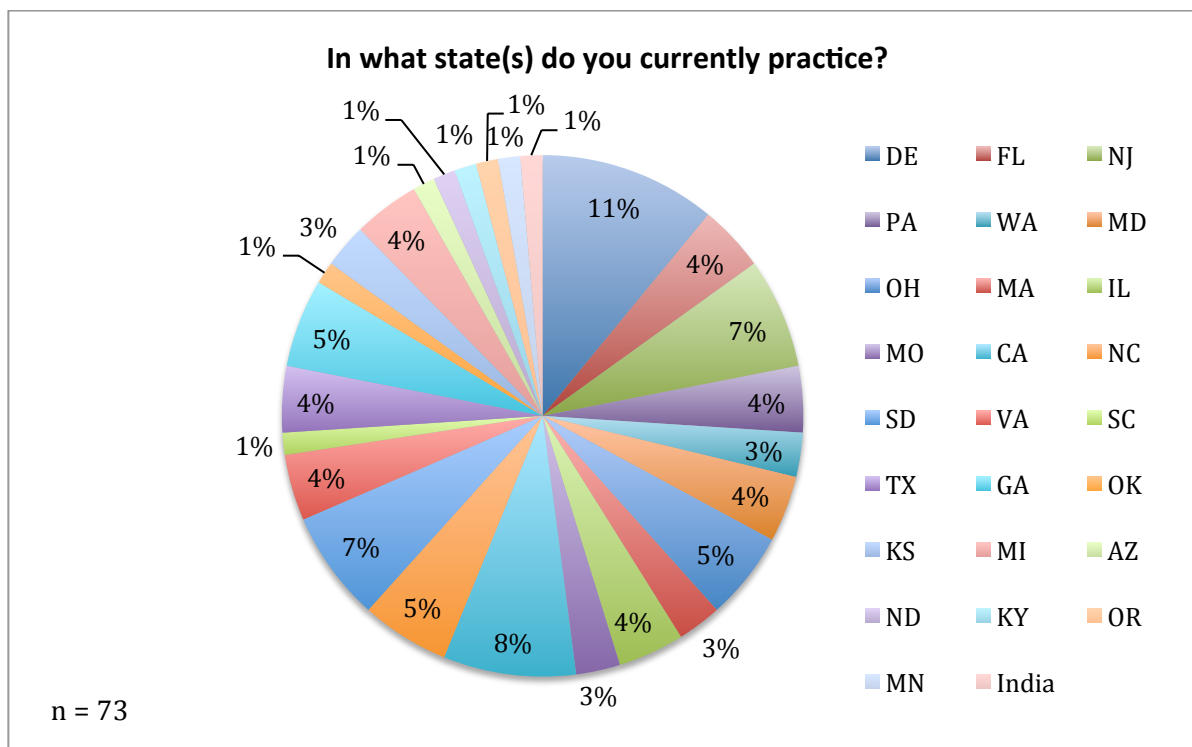


n = 78

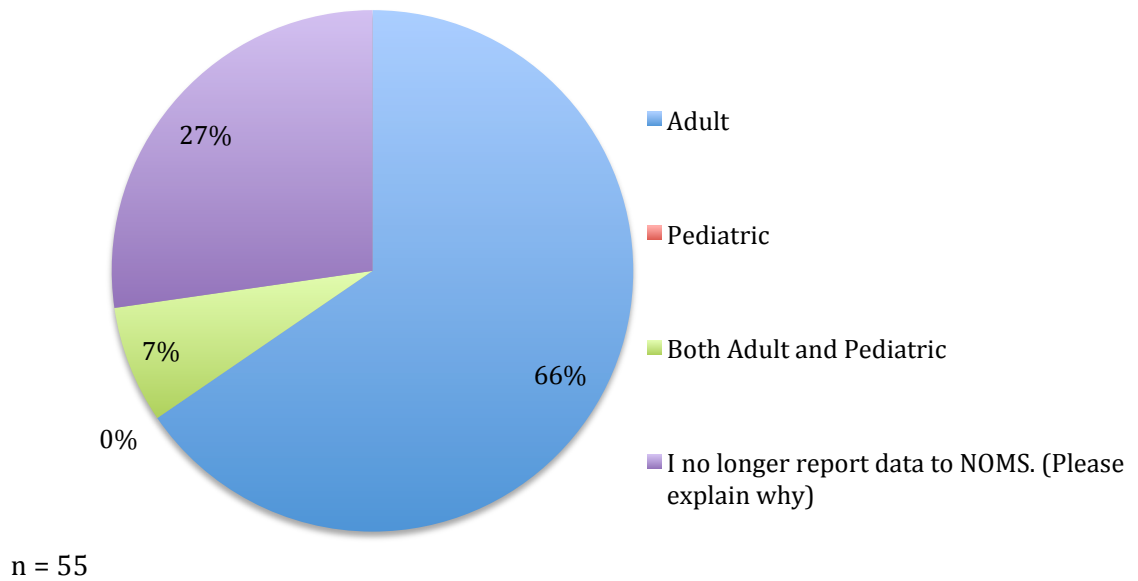
How many years have you been practicing as a certified SLP (ASHA Certificate of Clinical Competence)



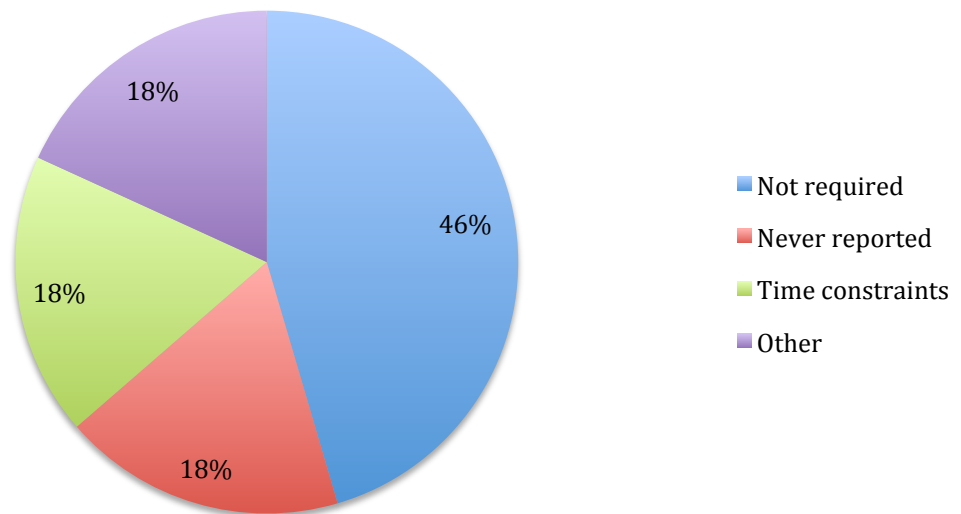
n = 71



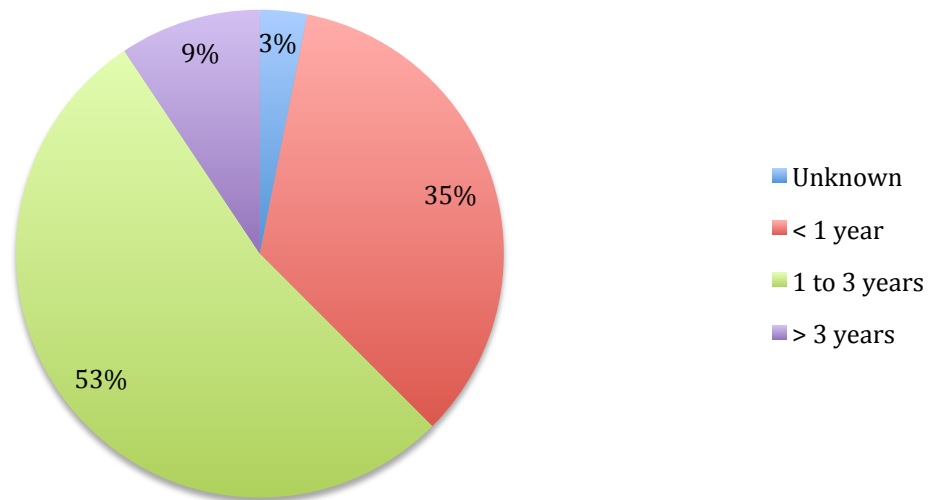
For what populations do you complete NOMS reporting?



For what populations do you complete NOMS reporting?: I no longer report data to NOMS

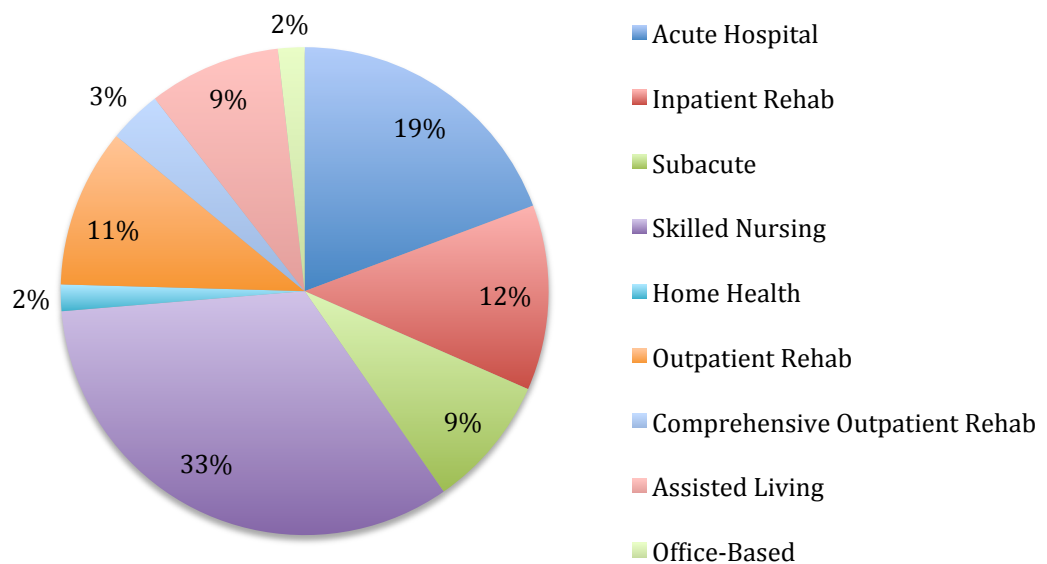


Length of Time Reporting to NOMS (What month and year did you begin NOMS reporting?)



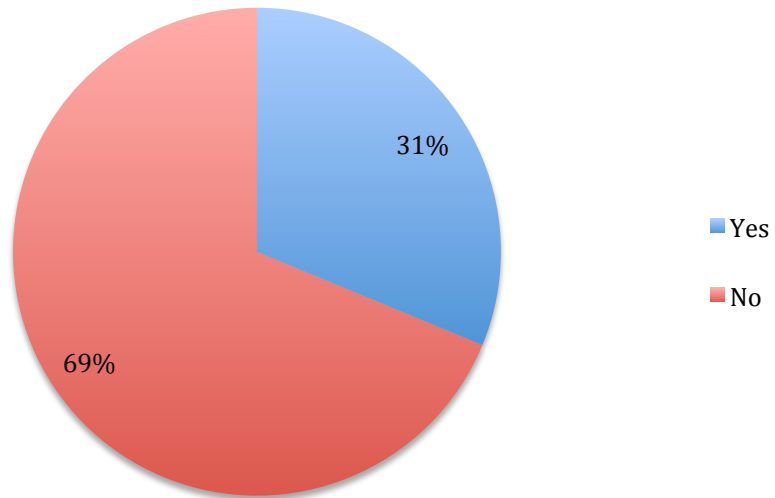
n = 32

In what settings having you completed NOMS reporting? (Select all that apply)



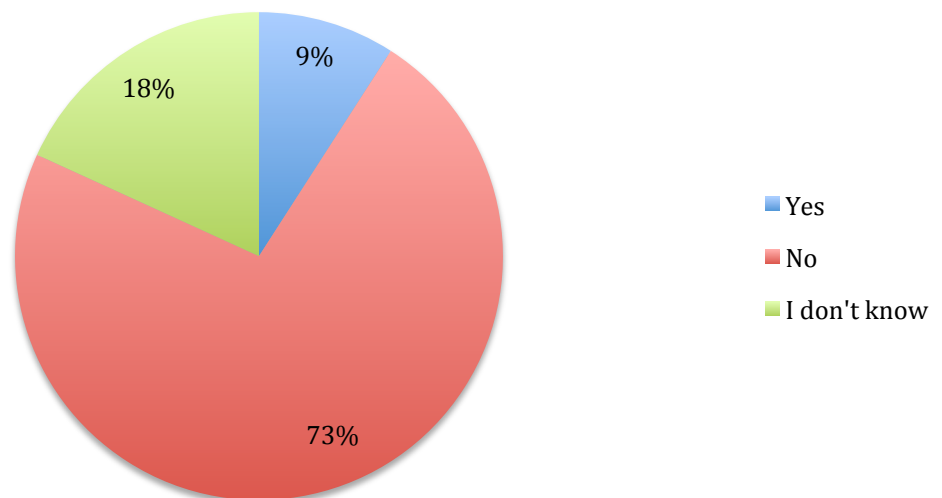
n = 34

Did your organization require mandatory training in addition to the NOMS online self-study program?



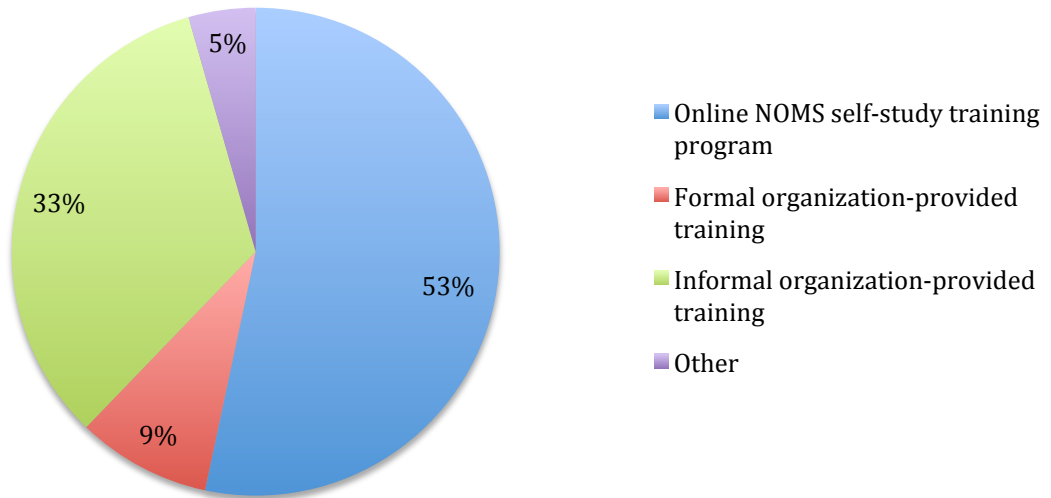
n = 32

Did your organization offer additional training in addition to the NOMS online self-study program?



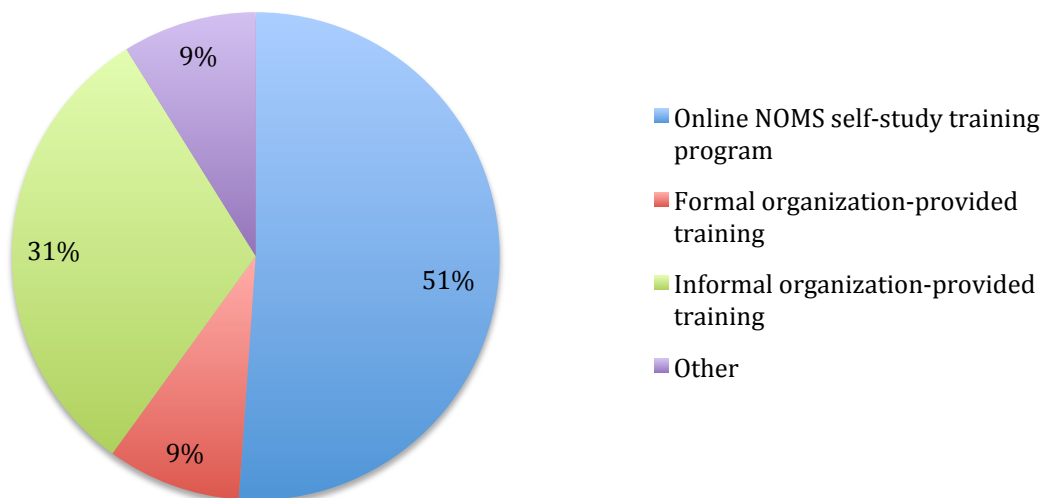
n = 22

What training opportunities were available to you? (Select all that apply)



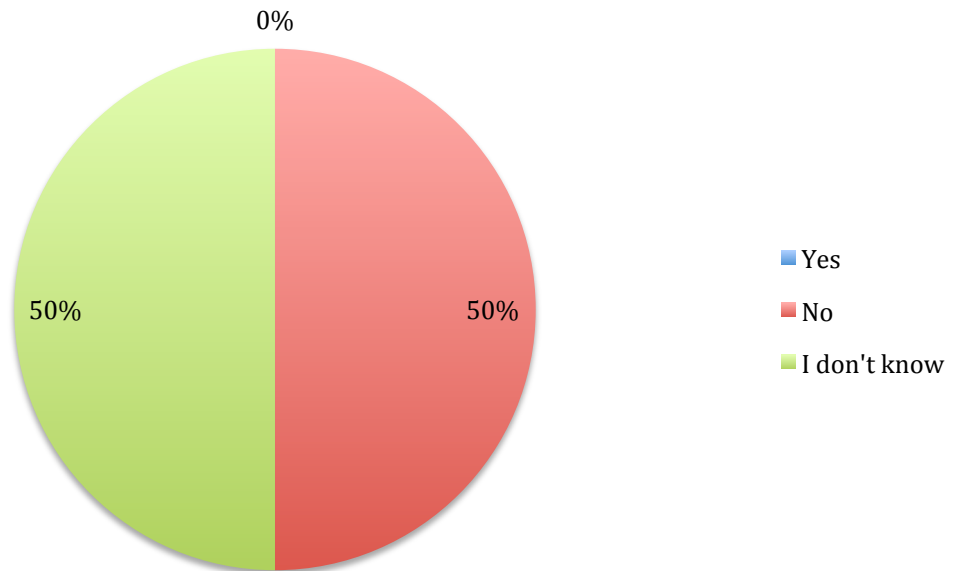
n = 33

What training opportunities did you participate in? (Select all that apply)



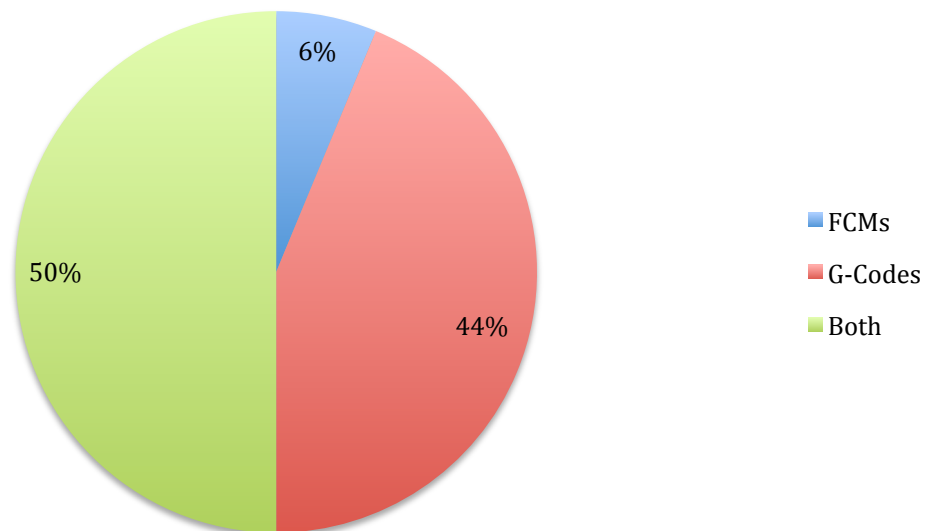
n = 32

Does your organization have a requalification requirement for NOMS?



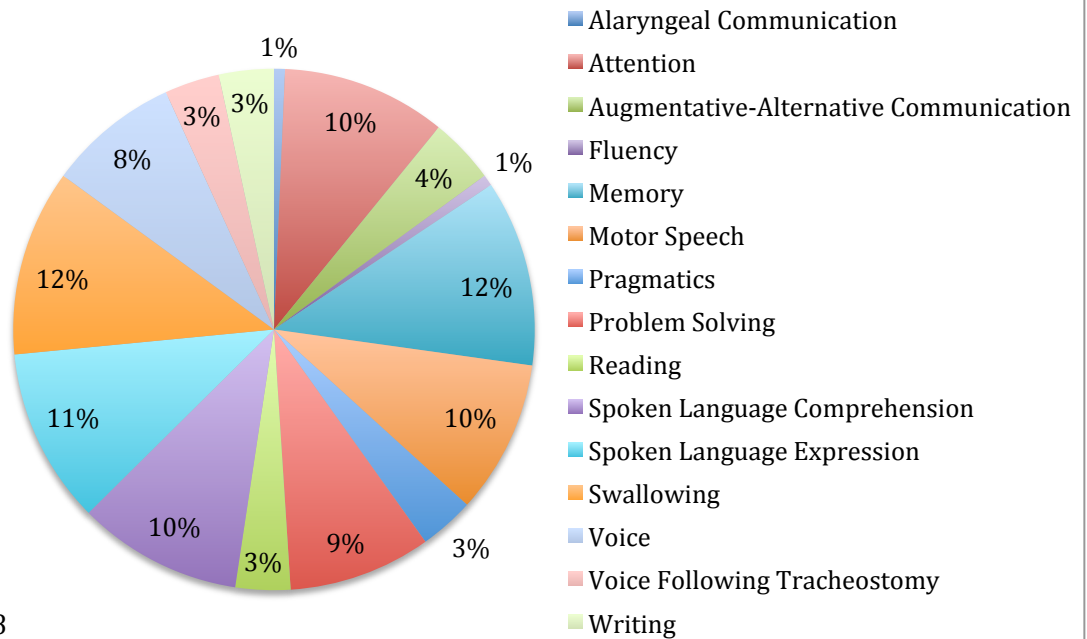
n = 32

When completing NOMS data reporting, do you use FCMs or G-codes?

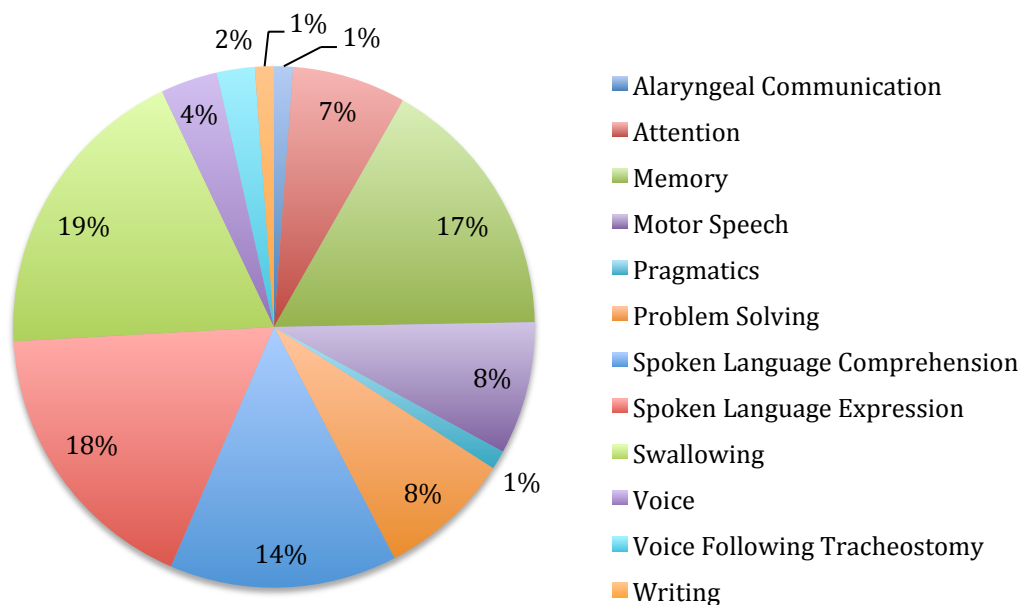


n = 32

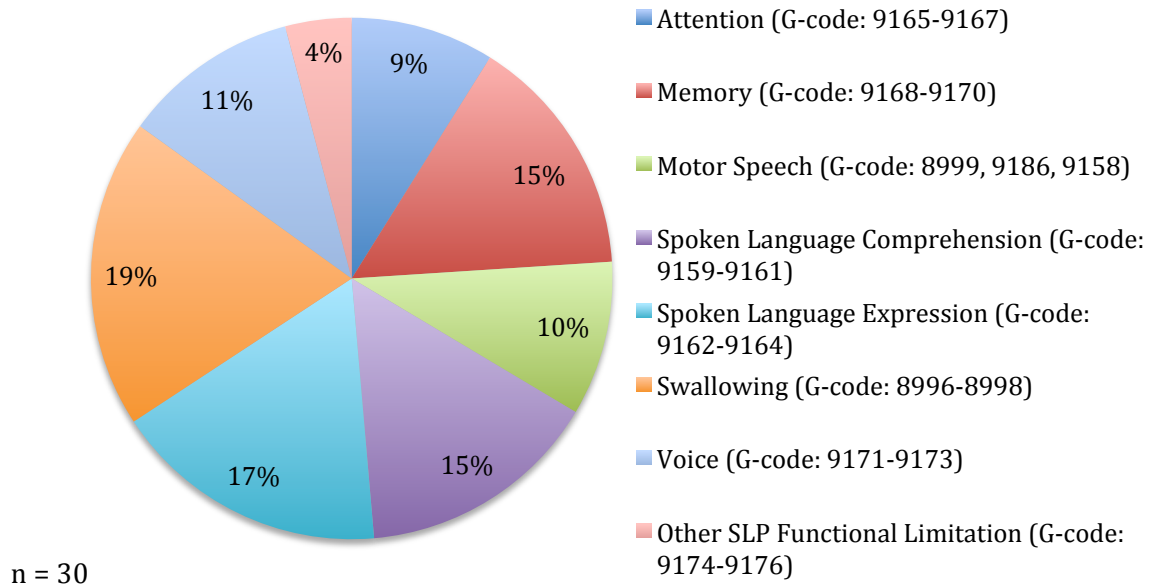
Which NOMS FCMs have you used when evaluating patients?



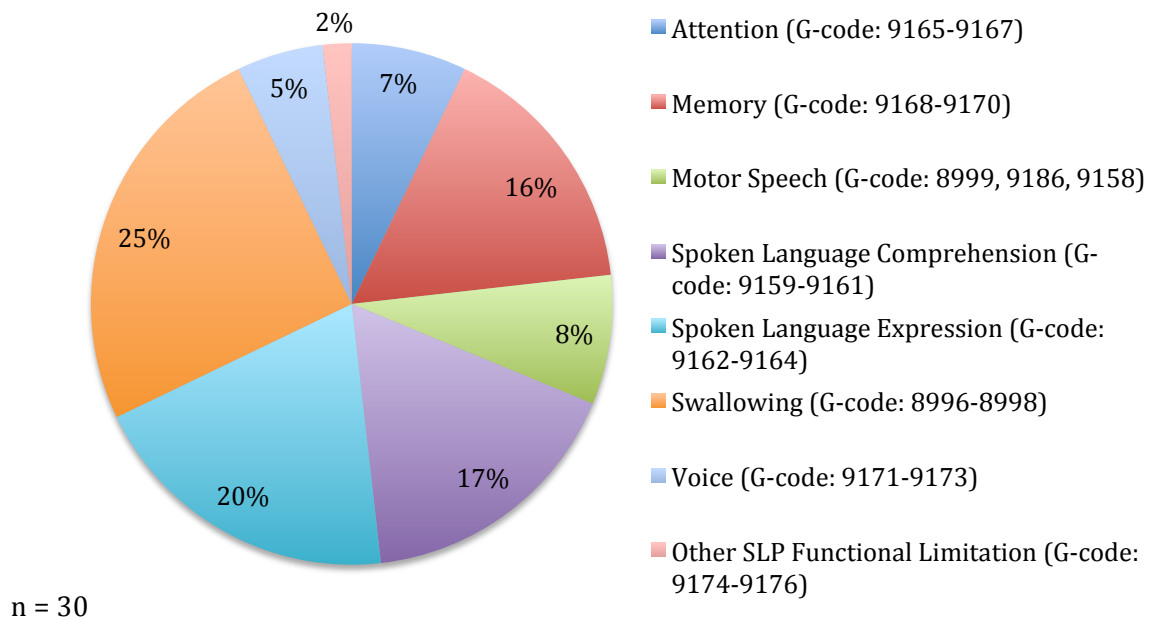
Please identify up to 5 FCMs used most frequently.



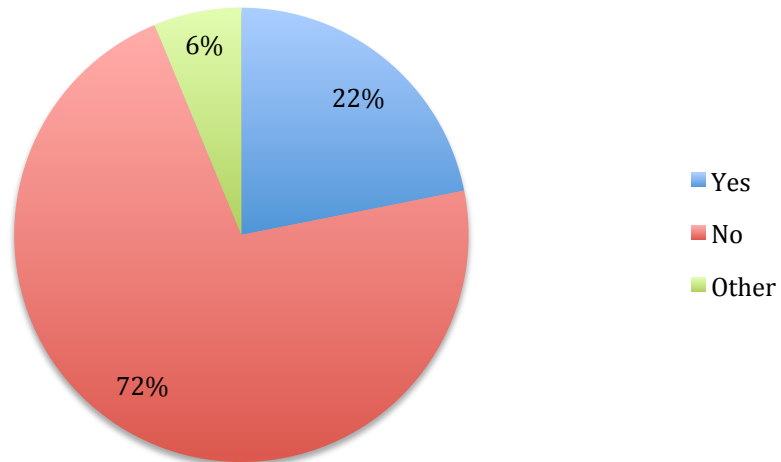
Which G-codes have you used when evaluating patients?



Please identify up to 5 G-codes used most frequently.

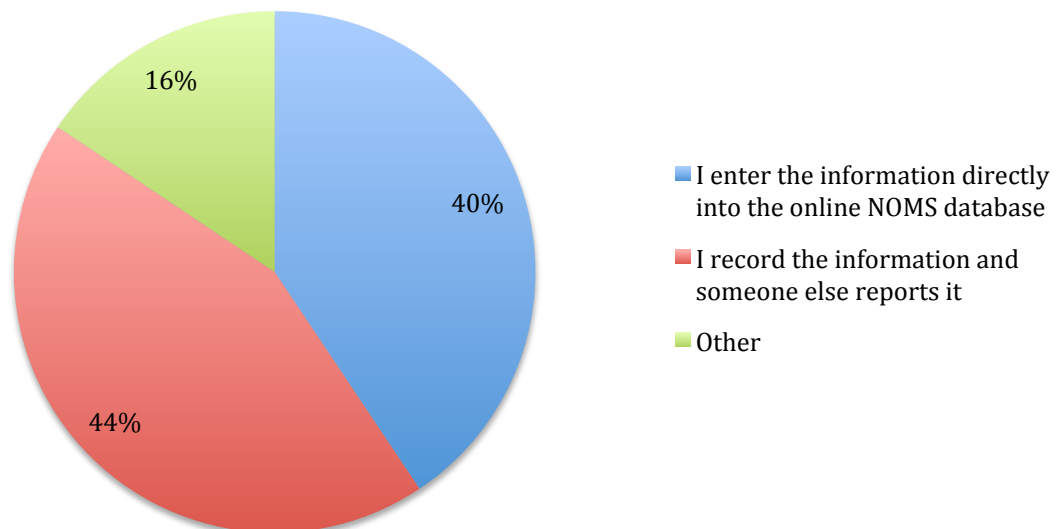


Do you receive or seek out information regarding previous NOMS ratings when evaluating new patients who received care from SLPs in other settings?



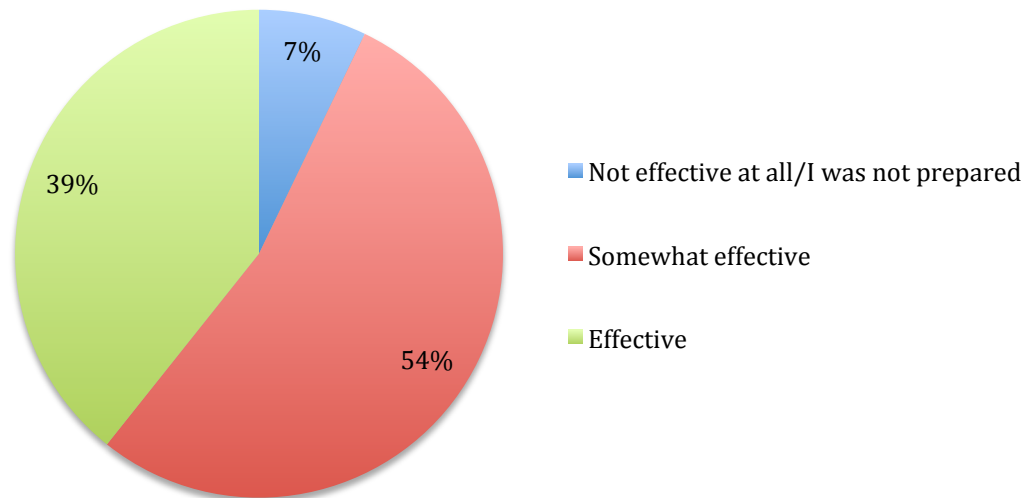
n = 32

When you take data for a patient, who reports it to NOMS?



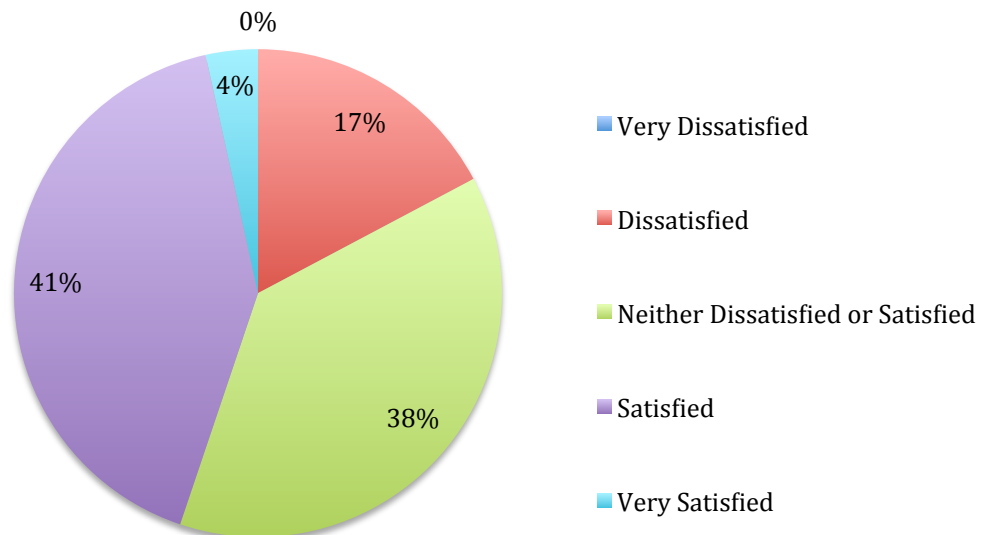
n = 32

How effective was the online NOMS self-study training program in preparing you for NOMS data collection and reporting?



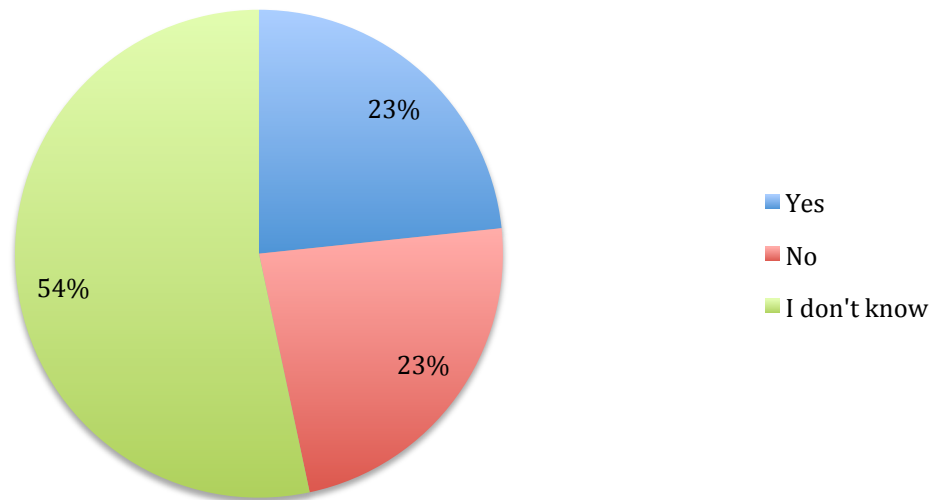
n = 28

Overall satisfaction with the purpose of ASHA's NOMS in reporting outcomes data



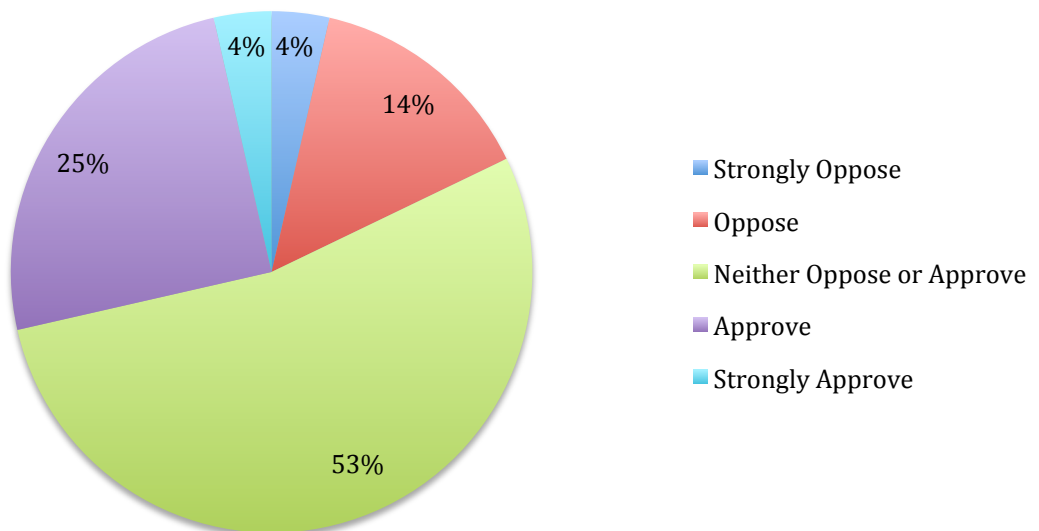
n = 29

Do you support open access to NOMS data by individuals who are not registered NOMS users?



n = 30

Strength of support/opposition for open-access to NOMS data



n = 28

Please provide your comments regarding the most beneficial components of NOMS:
STANDARDIZATION: • Having a standard to use. • Document improvements based on FCMs. • I think it's a good, quick objective measuring system that is a little more directed than the standard G codes. Most of the descriptions are easy to understand and I appreciate that there are 7 levels to choose from. • Universal scale • Standardization of areas that are otherwise difficult to quantify. Specific to SLP areas as opposed to FIMs which is too general.
GOALS: • Aids in goal setting • This gives a view of the pt function at baseline and then gives the therapist a long term achievement to try to reach which helps in creating effective goals and objectives
PROGRESS AND OUTCOMES: • If used well, NOMS can demonstrate the value of ST services to stakeholders. If applied inconsistently or inflexibly, it is not useful. • Reliable way to provide global ratings of functional impairment and change. Easy to report. Used in meeting CMS requirements for outcomes data. • It helps with judging functional gains. It's nice that within a score (ie swallowing: minimal diet restrictions or min cues required) that gives us more options and we don't have to end up playing the guessing game • Comparison of outcomes to other facilities/national average
OTHER: • I know that we are supposed to get good information regarding length of stay and how much improvement to expect with certain diagnoses, but honestly I have never accessed or tried to access this information • Relatively easy to navigate • The only benefit I can see using the NOMS is that it makes you have to stop and really think about specific areas of the patient. • The only thing I find useful is converting to G codes. • You have to have some kind of objective rating system, I guess this is as good as any. • NOMS should be open to all asha members and we should not have to register or report • I like the collection of data to further pt care.

Please provide your comments regarding the most concerning components of NOMS:
PRODUCTIVITY AND TIME CONSTRAINTS: • Feels extraneous when completing documentation • Time consuming • It takes a lot of time to try to keep up with on top of the goals and objectives • Too cumbersome to report info. Takes a long time. • It takes a lot of time to input and update noms data for every patient, negatively impacting productivity goals
CONSISTENCY OF APPLICATION AND STANDARDS: • You must have pt's number stored elsewhere in order to retrieve data, an additional search option would be helpful • See prior comment. Also, in my experience, there is great interrater (and perhaps even intrarater) variability in the ratings. I think bias and workplace perceptions of pressure can influence clinicians' ratings, for example, if a patient had ST a short time ago and is being evaluated again, the decline in function may be exaggerated in order to decrease risk of payment denial • ...Another objection I have was during the training period a colleague of mine failed the exam the first time and questioned the results of a few of her answers and the response given by ASHA was that her response is not necessarily incorrect but more of the respondents chose the answer on record so they use that as the 'correct' response. That is nonsense and doesn't show strong use of EBP in my eyes. • You have to input data into the NOMS system as it does not link to EMR. This allows for errors and selecting easiest options to complete faster.
RATING SCALES AND MODIFIER LEVELS: • I think the levels are not comprehensive or they make huge jumps between and many of my patients fall in the cracks... • Some of the descriptions are not applicable to certain patients (i.e. CVA patients with aphasia with the expressive language descriptions or quantifying mild voice disorders/respiratory support issues). Also, sometimes the swallowing levels can be confusing to new users with their "or" regarding cueing and diet levels. • Some patients just don't fit into a modifier level
OTHER CONCERNS: • There is no way to provide outcomes data from the patient's perspective • N/a • It can be confusing if you are familiar with FIMS, as it is in reverse order (numerically). • How to keep pt confidentiality and still be accurate in NOMS reporting. How do you track the NOMS ID and the pt info to enter their DC info without compromising confidentiality? Also, did these patients agree to their information being used/reported? • I don't have any concerns. It only takes me a minute or two to do it. • N/a

Please provide your suggestions for improvement of NOMS:	
EASE OF USE	• Incorporate patient-reported outcomes. Make it seamless to track patients and their progress across the care continuum. • Streamline it, provide FCM explanations for each component when picking it (Ex: you choose memory and then each FCM is listed w/explanation and then you choose) • Instead of doing it at every interval do an entry and exit • Make it quicker/easier to report. • Easier way to input data
OTHER	• See previous response • N/A • I'd love to see data on current inter- and intrarater reliability, and based on those results, updated trainings to improve reliability between clinicians. • N/a • There are too many different outcome measures that try to pigeonhole patients how about we use good clear documentation and standardized evaluations when appropriate. • No suggestions; clinicians just need to use it more and it will become more familiar. • I do not have any suggestions, but I do have suggestions for improvement of the survey. I am not familiar with Asha training online and have never read it or used it. I wish this had been an option when I was asked questions about how I felt about it. I just match up scores with the descriptions that are already on my form. • Possibly change definitions under expressive language to be more inclusive; add a code for executive functioning (right now, I classify under problem solving). • More available for cognition