# Differences in Patient and Practitioner Interpretations of Physical Therapy Terms

Zoe E. Eldredge
*Department of Linguistics, Brigham Young University*

## Author's Note

Correspondence concerning this article should be addressed to Zoe Eldredge, Department of Linguistics, Brigham Young University, Provo, UT, 84602, United States. Email: zee22@byu.edu.

## Abstract

This paper aims to gather the preliminary data necessary to provide practitioners with the knowledge and language in order to best communicate with their patients. For many patients, physical therapy is the next step after leaving the hospital or is used as preventative care so they won't need to go to the hospital. One can find catalogs of common physical therapy terminology, but these have yet to be analyzed or compared with patient perceptions of the same terminology. Utilizing Inverarity's 2021 catalog of Physical Therapy terminology, Intermountain Healthcare's 2016 "Pain Assessment Tool", and questions to gather meta-linguistic commentary, I compared patient and practitioner perceptions of language in physical therapy. There were statistically significant differences found between the selections of patients and practitioners as well as statistically significant differences in their perceptions/reports of meta-linguistic data related to physical therapy. The results of this study are pertinent to professionals including linguists, anthropologists, physical therapists, assorted medical personnel, and medical professors.

## Keywords

Physical Therapy, Perceptual Dialectology, Third Wave Sociolinguistics, Index(ing)

## Patient vs Practitioner Interpretations of Physical Therapy Terms

Language variation and change are inevitable (Birner, 2012). Warschauer's "Millennialism and Media: Language, Literacy, and technology in the 21st Century" from *Applied Linguistics for the 21st Century* found that "new online media are helping to transform language and literacy" because "digital media are changing reading and writing

practices" (2001, p. 49). With the continuous change and variation, a multiplicity of opinions regarding these things is to be expected. Nevertheless, we as a society and as individuals must be aware of what we are basing these opinions upon.

Everyone everywhere has thoughts, feelings, and opinions. Folk linguistics studies these thoughts, feelings, and opinions in relation to language (Preston, 2017). A significant aspect of folk linguistics is perceptual dialectology, which studies what ordinary people believe about language and the surrounding speech communities. Similarly, Third Wave Sociolinguistics studies the nuanced connotations of language and how people utilize these connotations to express identity utilizing the concept of indexicality, or the 'baggage' associated with linguistic features. The recognition, respect, and research of these identities is part of Anne Hudley's 2013 Four Waves of Sociolinguistic Justice. Hudley asserts that as issues are being brought to light and new theories are being created, both linguistics and the public have a right to partake in this knowledge. We should not only partake in this knowledge, in fact, but passionately apply it through activism to provide social justice.

By the same token, new advancements in the medical field are changing practitioners' language. Although these improvements are beneficial, these advancements also leave the general public unclear about the terminology being used as it isn't designed for them. If patients feel that they or the practitioner are not properly informed about a problem, they are less likely to bring it up (Early, 2013). Thompson and Pledger (1993) found that while word recognition of certain key medical terms is improving, this improvement is a slow process, ascertaining that those 65 years old and older did not recognize as many of the terms as those in the 45 to 64-year-old age group. Thompson and Pledger further (1993) assert that medical practitioners need an increased awareness of the terminology gap that exists between them and the patients as well as to adapt their language to match the patient.

In order to challenge this terminology disparity, reform is necessary for improved multidisciplinary communication between practitioners and patients. A few entities such as Intermountain Healthcare have been striving to standardize and achieve this precision in terminology, with documents such as IHC's 2016 "Pain Assessment Tool". However, does this visualization even match their patients' perceptions? Doctors Spiro and Heidrich (1983) researched and found that significant misconceptions about medical terminology were common among their patients of all ages and educational backgrounds. However, they also ascertained that those with more education had fewer misconceptions. Spiro and Heidrich assert that clinicians must make certain that their patients are comprehending the intended meanings. But what about when the patients leave the hospital?

For many patients, physical therapy is the next step after leaving the hospital or is used as preventative care so they won't need to go to the hospital. Physical therapists use their own slang, jargon, abbreviations,

terminology, etc., all of which are virtually unstudied (Inverarity, 2021). One can find catalogs of common physical therapy terminology, but they have yet to be analyzed or compared with patient perceptions of the same terminology. In order to build a "strong evidentiary foundation and advance physical therapy and rehabilitation science", standardization and precision are imperative to "label and describe interventions [that] will greatly strengthen our ability to communicate and to make comparisons across a wide range of conditions, interventions, and outcomes" (Jette, 2016). Overall, one can observe that it is necessary to eliminate the terminology barrier by utilizing specific and precise language curated for the patients and used by the practitioners.

This study aims to gather the preliminary data necessary to provide practitioners with the knowledge and language in order to best communicate with their patients. Using Inverarity's 2021 catalog of Physical Therapy terminology, Intermountain Healthcare's 2016 "Pain Assessment Tool", and questions to gather meta-linguistic commentary, I will compare patient and practitioner perceptions of language in physical therapy. I hypothesize that there will be statistically significant differences between the selections of patients and practitioners as well as differences in their perceptions/reports of meta-linguistic data related to physical therapy. I believe this is due to the aforementioned knowledge advancement, lack of standardization, and knowledge gap among patients and practitioners. There is little to no directly related research about this phenomenon up to this point; nonetheless, it can be anecdotally observed in the experiences of patients and practitioners. I expect to find more differences than similarities in the selections of patients and practitioners. I expect to find differences in the perceptions of meta-linguistic commentary of patients and practitioners. Evidence to support my hypothesis should be patients and practitioners choosing different orders, values, and reported jargon.

## Methods

I chose to study perceptions of physical therapy terminology because I want to pursue a career in physical therapy, and it is necessary in order to understand the differences in the perceptions of practitioners and patients. This linguistic variety is also extremely understudied but crucial in improving healthcare. I gathered both quantitative and qualitative data about terminology usage and meta-linguistic commentary via an online survey made with Qualtrics. I distributed my survey using an anonymous link. I put this link in five Discord servers, on my Snapchat, two group chats, two subreddits for surveys, and gave a printed QR to physical therapists I work with. I also had my mom text it to her friends and extended family, and my grandpa emailed it to his friends. I recruited anyone who had participated in physical therapy as a practitioner or a patient. I chose to exclude those with no experience with physical therapy as their perceptions are not based on true experience.

In total, 72 people responded to my survey with 45 giving usable answers. I first implemented an opening statement with information about the survey, including background information, an outline of the survey, and a trigger warning about topics related to physical therapy, body parts, and commands. I then used a sorting question about participation in physical therapy. If a respondent indicated they had participated in physical therapy, they were directed to background questions and three sections about physical therapy terminology. I asked background questions about age, gender, ethnicity, medical background, and primary experience as a patient or practitioner. The medical background question was added about a quarter of the way through the data collection process because it was important to investigate if knowledge of medical terms affects preference. The questions about the primary role and medical background had a forced response as these questions were vital to finding patterns and running the statistical analyses. The background questions yielded a decent amount of responses for those 18 to 24 years old but strongly neglected those aged under 18 years old as well as 65 years old and older. These questions also yielded a fair amount of patient responses but a deficit in practitioner responses as there were 34 patients and 10 practitioners.

Respondents who had participated in physical therapy were directed to three sections of questions about physical therapy linguistic features and patient preferences. The first section was on perceptions of commands in physical therapy. These questions instructed respondents to imagine they were a physical therapy patient and the physical therapist is instructing them about an exercise. The command preference focused on commands for flexing the gluteal muscles. Respondents were asked to rank commands from most (1) to least (5) of the following attributes: preferable, pleasant, comfortable, and professional. I chose to not include more descriptors to prevent survey attrition. I included one filler question with commands about a different body part for each of the attributes, so there were eight questions in total for this section.

The gluteal commands were as follows: “Squeeze your butt”, “Squeeze your booty”, “Squeeze your buttocks”, “Squeeze your bottom”, and “Squeeze your glutes”. The filler commands were as follows: “Raise your arms”, “Lift your arms”, “Swing your arms up”, “Bring your arms up”, “Hold your arms up”, “Squeeze your abs”, “Crunch your abs”, “Suck in your abs”, “Tighten your abs”, “Contract your abs”, “Scrunch your toes”, “Flex your toes”, “Squeeze your toes”, “Point your toes”, “Curl your toes”, “Squeeze your shoulder blades”, “Contract your shoulder blades”, “Tighten your shoulder blades”, “Compress your shoulder blades”, and “Draw in your shoulder blades”. Originally, I used the command “Squeeze your bum” but decided that “Squeeze your buttocks” was a more frequent usage and, therefore, had more pertinent phrasing. Both the questions and the answers were randomized to give respondents the illusion that the section wasn’t about perceptions of gluteal muscles.

While this questioning method was convenient, I had a few respondents report confusion and/or difficulty with ranking the commands. In addition, Qualtrics informed me that this question format was not WCAG AA/508 accessible.

The second question section was on perceptions of pain terminology. These questions instructed respondents to imagine they are a physical therapy patient, and the physical therapist is asking them to rate their pain on a scale of least pain (1) to most pain (10). Using the slider, respondents placed the Intermountain Healthcare descriptions of pain "Mild Pain", "Moderate Pain", "Severe Pain", and "Very Severe Pain" on the pain rating scale. These questions were not randomized to create a build-up from least to most pain. No respondents expressed concern about this question style and/or the questions.

The third question section had three free-response questions for the collection of meta-linguistic commentary on perceptions of physical therapy terminology/jargon. The questions were as follows: "What do you consider to be physical therapy?", "What do you consider to be mild, moderate, and vigorous exercise?", and "What do you consider to be a sedentary lifestyle and an active lifestyle?". I chose to not separate out the multiple sections of the exercise and lifestyle questions in order to help prevent survey attrition. Unfortunately, this lowered the quality of responses as respondents would only answer one part of the question. These questions were not randomized as it was deemed unnecessary. No respondents expressed concern about the questions but did express irritation over having to answer free-response questions. I believe it may not have been the questions themselves but, rather, the request response requirement I placed on them.

I had a small final section that contained the questions "What are specific jargon, word choice, and/or slang associated with physical therapy?" and "Any questions, comments, concerns?". These questions were not randomized as it was deemed unnecessary. No respondents expressed concern about these questions or their styles. The end of the survey message included the message "Thank you so much for taking the survey!" and the following meme:


FIGURE 1. Physical Therapy Meme

## Results

There were various distinctive patterns associated with differences in practitioners and patients. Practitioners were more likely to mention specific numbers, while patients were more likely to mention frequency and general activities. Patients found "Squeeze your bottom" much less preferable than practitioners did. A ranked T-Test was administered as there was a small sample size and the command variable was ordinal. The ranked T-Test yielded a statistically significant P-value of 0.0141. A ranked T-Test was performed, and there was no statistically significant difference in how pleasant patients and practitioners perceived the gluteal commands. Another ranked T-Test was performed, and there was no statistically significant difference in how comfortable patients and practitioners were with the gluteal commands. Patients found "Squeeze your buttocks" much less professional than practitioners did. A ranked T-Test was administered as there was a small sample size and the command variable was ordinal. The ranked T-Test yielded a statistically significant P-value of 0.0182.

Ranked T-Tests were performed, and there were no statistically significant differences in how patients and practitioners rated mild pain, moderate pain, severe pain, and very severe pain. It is important to note that nearly 20% of respondents with usable data classified severe pain as a 10 out of 10, while Intermountain Healthcare classifies severe pain as a seven to nine. All patients with a medical background rated severe pain as an eight out of ten. All patients aged 55 to 64 rated mild pain as a one out of ten and very severe pain as a ten out of ten. All patients aged 35 to 34 rated very severe pain as a ten out of ten. Practitioners were decently

unified on pain rankings. Respondents of all ethnicities were decently unified on pain rankings. Female patients had a statistically higher value for severe pain than male patients. A ranked T-Test was performed and yielded a P-value of 0.0162. Female practitioners had a higher average rating for severe pain than male practitioners.

All patients with a medical background perceived “Squeeze your booty” as more preferable than patients without a medical background did. There was no difference in the perceptions of pleasantness for gluteal commands for patients with a medical background and patients without a medical background. All the patients with medical training ranked “Squeeze your bottom” third-least comfortable while patients without medical training dispersed their rankings. All patients with medical training ranked “Squeeze your glutes” the most professional. All patients aged 25 to 34 found “Squeeze your bottom” as the second-least comfortable option. Female patients perceived “Squeeze your bottom” more pleasant than male patients did. Male patients and practitioners found “Squeeze your butt” more pleasant than female patients and practitioners did. Male patients and practitioners perceived “Squeeze your butt” as more preferable than female patients and practitioners did.

All patients aged 35 to 44 found “Squeeze your buttocks” the medial option for professionalism. Practitioners aged 35 to 44 and 55 to 64 found “Squeeze your bottom” the medial option for professionalism while those aged 18 to 24 found it the second-least professional option. Practitioners aged 55 to 64 found “Squeeze your buttocks” the most professional option while those aged 18 to 24 and 35 to 44 perceived it as the second-most professional option. All patients aged 65 and older perceived “Squeeze your bottom” as the medial option for comfort. All patients aged 45 to 54 as well as those 65 and older ranked “Squeeze your bottom” as the medial option for professionalism. All patients aged 24 to 34 and 45 to 54 ranked “Squeeze your buttocks” as the second-most professional option. All patients aged 45 to 54 ranked “Squeeze your buttocks” second-most comfortable. Practitioners aged 55 to 64 found “Squeeze your buttocks” the most preferable while 45 to 54 perceived it as the medial preference and those 18 to 24 ranked it as the second-least preferable option. “Squeeze your butt” was ranked second-most pleasant by practitioners aged 45 to 53, medial by those 18 to 24, and second-least pleasant by those aged 55 to 64.

Patients aged 55 to 64 had some very unified opinions. All patients aged 55 to 64 also perceived “Squeeze your buttocks” as the median preference and “Squeeze your butt” as the second-least preferable option. Practitioners 55 to 64 found “Squeeze your glutes” less preferable than those in other age groups. All patients aged 55 to 64 found “Squeeze your buttocks” less pleasant and “Squeeze your bottom” as more pleasant compared to the other age ranges. Practitioners aged 55 to 64 ranked “Squeeze your buttocks” the most pleasant while those aged 18 to 24 found it the second-least pleasant option. Interestingly, practitioners aged

18 to 24 found “Squeeze your butt” the medial option for comfort while those aged 55 to 64 perceived it as the second-least pleasant option. All patients aged 55 to 64 found “Squeeze your butt” the second-least comfortable option. All patients aged 25 to 34 perceived “Squeeze your bottom” as second-least preferable while patients aged 55 to 64 found this command second to most preferable. All patients aged 55 to 64 years old perceived “Squeeze your buttocks” as medium comfortability and “Squeeze your bottom” as the second-most comfortable option.

## Discussion

Patients and practitioners appear to have some differences in perception of physical therapy terminology. Patients perceived “Squeeze your bottom” much less preferable than practitioners did. Patients found “Squeeze your buttocks” much less professional than practitioners did. However, all patients aged 45 to 54 ranked “Squeeze your buttocks” highly on comfort. Patients 55 to 64 find “Squeeze your bottom” more pleasant than “Squeeze your buttocks”. Practitioners should be aware of this trend as this is not the case for other age groups. Male patients and practitioners perceived “Squeeze your butt” as more pleasant and more preferable than female practitioners did. Female patients and practitioners had a statistically higher value for severe pain than male patients and practitioners. This is important to note as practitioners need to be careful to not make opposite-gendered patients uncomfortable. In addition, a patient may report or a practitioner may perceive the severity of pain differently depending on gender. Practitioners were more likely to mention specific numbers in the free-response questions, while patients were more likely to mention frequency and general activities. I believe this is due to the standards physical therapists are taught in school.

Patients exhibited some interesting patterns. All patients with a medical background rated severe pain as an eight out of ten. I believe this is due to them observing the true range of human suffering. All patients with a medical background perceived “Squeeze your booty” as more preferable than patients without a medical background did. All patients with medical training ranked “Squeeze your glutes” the most professional. This is interesting to note as those with medical training find the most medical term professional but one of the least medical terms the most preferable. I believe this is due to them being exposed to the full range of terms more often than those without a medical background.

Patients and practitioners seem to perceive that the other speech community understands them and carries the same meanings in their words. However, these speech communities have distinct preferences with their own indexicality. Patients seem to index “active” and “sedentary” based on ‘lifestyle choices’, while practitioners seem to index based on ‘bodily functions’ or ‘standards’. Female practitioners and patients seem to index “butt” as ‘disrespectful’ and “very severe pain” as ‘maximum suffering’. Male practitioners and patients, on the other hand, seem to

index “butt” as ‘casual’ and “severe pain” as ‘a lot of pain’. Nonetheless, patients with a medical background seem to index “severe pain” as ‘high pain that you aren’t dead from’. Recognition and respect of these concepts are important for practitioners and patients to communicate properly and effectively.

This survey has various limitations. My sample size for both practitioners and patients was very small. While I tried to be as thorough as possible, there was some bias in the sampling procedure. Nearly all of the elderly participants came from my grandfather’s social circle. Nearly all of the Generation Z and Millennial participants were university students. There were unequal distributions of age, gender, and ethnicity. All of my data collection was done online, contributing to a bias toward those with internet access and willingness to take a survey. Additionally, the ranking questions were not WCAG AA/508 accessible, which made them less accessible for those with disabilities. There were also various cases where almost all of the responses were unanimous that were not discussed, as they were not useful to discuss at this time. In summmary, my survey does not represent the full range of socioeconomic status groups of those who have participated in physical therapy.

More research should be conducted to better isolate, analyze, and compare patient and practitioner perceptions. This research should include more diversity in age, gender, ethnicity, etc. Further research should explore the opinions of those who have never been to physical therapy and/or opinions before and after participating in physical therapy. The format of future research should be changed so all questions and the survey itself are accessible to those from all backgrounds. Better separation of free-response questions could be done via linguistic interviews. Future research should compare results by age and time practicing to see if different combinations yield divergent preferences. More detail should be put into the types of pain (e.g. prickly, stabbing, throbbing, stinging, burning, etc.) to rank them on a pain assessment tool. A reassessment and possible relabeling of the Intermountain Healthcare “Pain Assessment Tool” could be useful. Research should also be done in other languages to investigate, isolate, analyze, and compare perceptions of linguistic terminology. Physical therapy in Spanish-speaking individuals, for example, sometimes uses the slang ‘pica-pica’ to mean burning/a burning pain.

Linguistic discrimination against patients seems more likely than linguistic discrimination against practitioners, as practitioners are likely have more power in treatment situations, and I believe this holds outside the United States. The results of this study are pertinent to professionals including linguists, anthropologists, physical therapists, assorted medical personnel, medical professors, professors of linguistics, and others. In conclusion, patients and practitioners differ in how they perceive and, therefore, index terminology in physical therapy.

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