The Intersection of Social Determinants of Health and Post-stroke Aphasia Outcomes: A Need for Intersectional Analysis

Elizabeth Evans, M.S.,1 Molly Jacobs, Ph.D.,2 and Charles Ellis, Ph.D., CCC-SLP1

ABSTRACT

Aphasia is a disorder that results from damage to portions of the brain that are responsible for language and can vary significantly by type and severity. Differences in aphasia outcomes are influenced by the social determinants of health (SDOH). The SDOH are structural, environmental, and personal determinants that influence health outcomes. Intersectionality, or how one’s social and political identities interact to influence individual life outcomes and/or advantage in our society, provides a way to examine the varying levels of the SDOH. However, intersectionality is complex, difficult to measure, and has not yet been explored in post-stroke aphasia outcomes. This article reviews the relationship of race and aphasia outcomes and the SDOH and aphasia outcomes. Additionally, we provide a novel current approach to examine the SDOH and aphasia outcomes. Lastly, we discuss the need for evaluation of intersectionality in aphasia and aim to provide a leveled social–ecological framework to examine aphasia-related outcomes. With notable individual differences among aphasia outcomes, we present a framework to support optimizing research and clinical aphasia care in speech–language pathology.

KEYWORDS: aphasia, outcomes, intersectional analysis

1Department of Speech, Language and Hearing Sciences, Communication Equity and Outcomes Laboratory, College of Public Health and Health Professions, University of Florida, Gainesville, Florida; 2Department of Health Services Research, Management and Policy, College of Public Health and Health Professions, University of Florida, Gainesville, Florida.

Address for correspondence: Charles Ellis, Ph.D., CCC-SLP, Department of Speech, Language, and Hearing Sciences, Communication Equity and Outcomes Laboratory, College of Public Health and Health Professions, 1225 Center Drive, PO Box 100174, Gainesville, FL 32610-0174 (e-mail: ellisch@phhp.ufl.edu).

Semin Speech Lang 2023;00:1–14. © 2023. Thieme. All rights reserved. Thieme Medical Publishers, Inc., 333 Seventh Avenue, 18th Floor, New York, NY 10001, USA


ISSN 0734-0478.
Learning Outcomes: As a result of this activity, the reader will be able to:

- Understand the relationship between race and aphasia outcomes.
- Understand how the social determinants of health (SDOH) influence outcomes in individuals with aphasia.
- Describe strategies that incorporate exploration of the contribution of SDOH on aphasia outcomes into research design.

Improving the outcomes of persons with aphasia (PWA) has been a longstanding goal of both clinicians and researchers. Studies have attempted to capture the multiple factors that facilitate optimal aphasia outcomes (Aftonomos, Appelbaum, & Steele, 1999). Contemporary research has shown that despite best efforts, some population groups do not achieve outcomes on par with others (National Academies of Sciences, Engineering and Medicine, 2017). More specifically, some individuals are not able to consistently experience good health-related outcomes; thus, disparities exist (National Academies of Sciences, Engineering and Medicine, 2017). Evidence suggests researchers and clinicians must look beyond the traditional factors of age, stroke severity, and level of aphasia impairment to other mechanisms such as the social, structural, and political systems (determinants) that negatively influence outcomes and contribute to disparities in outcomes that exist worldwide. In this article, we change the traditional evaluative lens to explore how these determinants potentially influence outcomes in aphasia and related disorders (Jacobs & Ellis, 2022). We will utilize an intersectional approach that highlights the difficult to measure and traditionally unexplored factors that influence post-stroke aphasia outcomes.

POST-STROKE APHASIA

Aphasia, an acquired neurogenic language disorder that can impact spoken language expression and comprehension, written expression, and reading comprehension, is a common condition occurring after stroke and other neurological conditions affecting the brain (American Speech Language Hearing Association, 2023). The rate of stroke survivors with aphasia can be as many as 66% of stroke survivors globally (Frederick et al., 2022). In the United States, estimates suggest 18.4% of stroke survivors discharged from U.S. hospitals have aphasia (Ellis et al., 2018). This is significant when considering that aphasia is associated with lower functional stroke outcomes, longer stays in rehabilitation settings, and increased mortality (Lazar & Boehme, 2017). Additionally, the cost of aphasia is significant with recent estimates suggesting the annual cost of aphasia is approximately $16 billion dollars (Jacobs & Ellis, 2023). The rate of aphasia differs across sex and age with females and adults older than 75 years making up a little over half of stroke survivors with aphasia (Ellis et al, 2018). Positively, recent surveys in the United States note that awareness of aphasia has significantly increased from 7 to 40% (National Aphasia Association, 2022).

SOCIAL DETERMINANTS OF HEALTH AND APHASIA OUTCOMES

One area that has received only minimal attention in the aphasia literature despite becoming an integral part of the general health literature is the social and structural determinants of health (SDOH) and their role in aphasia outcomes. As depicted in Figure 1, the determinants of health have been operationalized as the social and structural factors or complex circumstances in which individuals are born and live that impact their health that also include intangible factors such as political, socioeconomic, and cultural constructs, in addition to conditions related to where one lives such as accessible healthcare and education infrastructure, safe and well-designed neighborhoods, and healthy foods that are easily available (Fig. 1; World Health Organization, 2023).

More specifically, the SDOH involve the cumulative and synergistic interaction between political, social, economic, and structural factors that may be outside of one’s control. Furthermore, the SDOH can include the “social environment” or social and cultural institutions, norms, patterns, beliefs, and processes that...
influence the life of an individual or community and the “physical environment” or the natural and built environment where people live (Office of Disease Prevention and Health Promotion, n.d.). More importantly, the SDOH can affect health and produce disparities (Thornton, Glover, Cené, Glik, Henderson, & Williams, 2016).

The current stroke literature has shown a clear connection between the SDOH and stroke-related outcomes (Daniel et al., 2018; Khan et al., 2022; Reshetnyak et al., 2020; Yadav et al., 2022). An emerging aphasia literature also suggests the SDOH may play a critical role in aphasia outcomes. For example, race/ethnicity, sex/gender, education, socioeconomic status/income, and social support are believed to be key social determinants that impact aphasia outcomes. Regarding the possible role of race/ethnicity in aphasia, racial/ethnic disparities have been reported in aphasia outcomes that are consistent with racial

---

**Figure 1** Social determinants of health from healthy people 2030 (Office of Disease Prevention and Health Promotion, n.d.).
disparities commonly seen in the stroke, the primary cause of aphasia (Ellis & Peach, 2017; Ellis et al., 2018). More specifically, long-standing racial disparities exist in rates of stroke, stroke severity, and age at which stroke is experienced (Tsao et al., 2023). Similar disparities have been reported in aphasia with Black Americans having higher rates of aphasia (Ellis et al., 2018), greater aphasia impairment (Ellis & Peach, 2017; Jacobs & Ellis, 2022; Simmons et al., 2021; Wertz et al., 1997), and higher likelihood to experience aphasia at younger ages (Ellis et al., 2018). These racial/ethnic differences are not easily elucidated by traditional clinical explanations. Although lower scores on impairment measures of aphasia (e.g., WAB-R, BNT, PICA) have been observed among Black Americans, their healthcare utilization and costs were found to be higher (Ellis, Hardy, et al., 2017a; Ellis, Peach, et al., 2017b; Hardy et al., 2019). One explanation may be associated with how critical outcome variables moderate each other resulting in observed disparities in outcomes. A recent study found severity of aphasia to be moderated by race within larger strokes with Black Americans experiencing more severe aphasia than White Americans at similar lesion size (Gadson et al., 2022). To date, studies have been very inconsistent in reporting the racial backgrounds of participants thereby limiting some aspects of interpretation. A recent study found that only 30% of studies from 2009 to 2019 reported race and these studies did not demonstrate a demographically representative group (Nguy et al., 2022). These findings suggest very little change in reporting of race from a prior study over a decade earlier (Ellis, 2009). Additionally, this lack of reporting highlights a fundamental aspect of the study of the SDOH in that it is not enough simply to report the sociodemographic characteristics of the participants, but research must also consider how healthcare policy has a differential impact on different groups all attempting to achieve health equity (O’Halloran et al., 2023).

Sex/gender differences have also been reported among individuals with aphasia, although the evidence has been mixed. Sharma et al. (2019) found greater impairment among men when compared to women in a study of 294 individuals with aphasia using data from the AphasiaBank (Sharma et al., 2019). However, other studies have generally reported no differences in the aphasia outcomes between men and women (Schechter et al., 1985; Sundet, 1988). Regarding education, Kim and colleagues (2019) found that educational level was positively associated with language improvement after the first-year post-aphasia diagnosis. In addition, Lwi et al. (2021) also found that educational level was associated with improved outcomes in auditory comprehension among PWA. Finally, González-Fernández et al. (2011) found 12 years or greater of education to be associated with a reduction in errors on language tasks. This study was completed within 24 hours of aphasia diagnosis which may explain why the findings contrast those of Worrall et al. (2017) who identified an inverse relationship between education and life participation of those with aphasia. Lazar and colleagues (2008) also did not find a positive relationship between education and aphasia outcomes.

Higher income has been reported as associated with higher scores on measures of aphasia performance. Neighborhood and family income had a positive effect on oral and written spelling but did not appear to have an influence on oral or written naming, repetition, or comprehension (González-Fernández et al., 2011). A study designed to explore factors that contribute to living successfully with aphasia found that household income was one of several factors positively associated with the participation domain of the Assessment for Living with Aphasia test (Worrall et al., 2017). Interestingly, they found the severity of aphasia played a less significant role than other social determinants. Our own recent work showed that higher income level and family size were both associated with higher confrontational naming scores among a large sample of PWA (Jacobs, Evans, & Ellis, 2023). Finally, while Connor et al. (2001) found that aphasia severity was greater among PWA from lower educational backgrounds, the rate of recovery was the same regardless of socioeconomic background.

Social support and social relationships are another factor known to play a critical role in the lives of PWA. Family relationships,
friendships, and social exchanges within the wider social network can be deeply affected when communication abilities are impaired; however, these sources of support can be instrumental in rehabilitation and recovery (Fotiadou et al., 2014). Larger network sizes were associated with living well (participation domain of the Assessment for Living with Aphasia test) in the first 12 months after stroke (Worrall et al., 2017). Furthermore, both face-to-face and virtual social outreach and integration have been shown to enhance aphasia recovery and improved communication (Ellis et al., 2019). Studies have shown that the use of social media by people with aphasia can provide both a therapeutic outlet and a way for people with aphasia to feel connected to a wider community. A qualitative study found community and family members to influence life participation of PWA (Le Dorze et al., 2014).

**APPROACHES TO EXPLORE THE SDOH AND APHASIA OUTCOMES**

A review by O’Halloran et al. (2023) noted that although the study of the relationship between the SDOH and aphasia outcomes is in a very early stage of exploration, the SDOH are modifiable and operate over a lifespan. Traditional approaches designed to explore aphasia outcomes have primarily focused on neurological measures and a minimum number of sociodemographic characteristics while also utilizing traditional measures of aphasia impairment. O’Halloran et al. (2023) proposed that more research should be designed to emphasize the relationship between SDOH and activity, participation, and quality of life rather than the typical approach that simply emphasizes language outcomes (O’Halloran et al., 2023). Some suggest even this approach has been inconsistent thereby resulting in minimum advancement in understanding the complexity of factors that contribute to clinical outcomes (Ellis, 2009; Nguy et al., 2022).

Recently, our research team has utilized a novel approach to explore the impact SDOH have on aphasia outcomes that included combining aphasia outcomes clinical data with national survey data (Jacobs et al., 2023). The basis of this approach was to create an integrated data sample which offers the ability to engage in a more detailed analysis of the impact that SDOH (available in the survey data) have on aphasia outcomes (Jacobs et al., 2023). This type of analytic approach has been proposed as an effective way to more accurately explore the relationship between the SDOH and clinical outcomes (Cantor & Thorpe, 2018; Park et al., 2022). More specifically in our own recent work, we combined data from the Moss Aphasia Psycholinguistics Project Database (MAPPD) (Mirman et al., 2010) with data from the Medical Expenditure Panel Survey (MEPS) (Blewett et al., 2019). The clinical data from the MAPPD database were combined with the SDOH data from the MEPS via a propensity score matching algorithm to create a simulated and integrated dataset (Heinrich et al., 2010) with the primary outcome of interest being naming ability as measured by the Boston Naming Test (Borod et al., 1980). In this study, we found that PWA with larger social networks (family size) also exhibited better naming outcomes (Jacobs et al., 2023).

Despite these findings related to the SDOH, the study of aphasia has continued to primarily try to understand the neurological underpinnings of aphasia and the development of revised models of language functioning that explain aphasia. Yet the aforementioned evidence related to the relationship between aphasia and SDOH suggests researchers and clinicians studying aphasia treatment outcomes would benefit from examining not only the neurological issues related to aphasia but also the underlying SDOH that interacted over the life course to determine health-related conditions, such as post-stroke aphasia. Conditions such as aphasia cannot be accurately explained nor addressed without consideration of the SDOH particularly among individuals who live in conditions that limit optimal outcomes.

A key and complicated issue related to understanding how and why the social determinants of health are critical to aphasia outcomes is that the SDOH change over time. The same SDOH that influence early development, health, and well-being can change over time, and consequently when measuring adult-onset conditions early influences must be considered. In addition, careful attention must be given to
the life course. Poor health can accumulate from the earliest life stages and progress into later life (Hilal & Brayne, 2022). Furthermore, physical, behavioral, and psychological factors that drive health inequalities within and across communities and societies also contribute to disparities in brain health that translate into conditions such as aphasia (Hilal & Brayne, 2022).

Barch and Luby (2023) examined early brain neurological development and found that the growth of some regions of the brain (the frontal cortex, cingulate, insula cortex, and hippocampus) is influenced by a wide range of SDOH (e.g., family income and education; financial adversity; neighborhood financial adversity, social vulnerability). Additionally, the influence of allostatic load—the physiological response to environmental challenges (McEwen, 2006)—has been associated with chronic life stress and related consequences in adult cognition (D’Amico et al., 2022) as well as race differences in cognition following intracerebral hemorrhage (Harris et al., 2022). Therefore, these relationships between SDOH related to living conditions and health should be considered when exploring adult health complications and their resulting conditions such as aphasia. More specifically, because the SDOH may individually change during early, middle, and late development, people who eventually experience cardiovascular complications such as stroke may not have experienced the same SDOH challenges throughout their individual life course regardless of whether they have the exact same stroke location and size (Fig. 2). Consequently, the post-stroke SDOH can also impact aphasia outcomes. More specifically, each PWA’s individual circumstances (e.g., rehabilitation factors, insurance coverage, and social participation) have the potential to impact the person’s rehabilitation process and recovery and ultimately their communication (aphasia) outcomes (Frier et al., 2017).

Recent methodological articles report complex statistical modeling approaches that potentially offer better approaches to interpret/explain health status and, in turn, use as a possible approach to account for aphasia outcomes. Veenstra (2011) systematically considered four identities (race/ethnicity, gender, class, and sexual orientation) as additive main effects and then also as interaction terms. The study attempted to identify “complicated directionality” implied by other studies where the additive solution was undermined. His results confirmed that interaction terms showed both mitigating and aggravating contributions to health status. Hinze et al. (2012) also conducted a methodological study to “[provide] a bridge between feminist frameworks and traditional quantitative studies of race, class, and gender effects” (p. 6). They combined stratification and a multiplicative approach, entering race and gender as interaction terms in a set of nine models stratified by socioeconomic status. Their results indicated that the interaction

![Figure 2](image_url)  
**Figure 2** Life course determinants of aphasia outcomes.
terms were independently predictive, and that this association was strengthened when controlling for other factors, such as social support and risk behaviors. The findings from the nine models’ coefficients affirm that the answer to the research question changes when interactions within different groups are considered systematically. A methodological study by Warner and Brown (2011) enriched the effort to model interactions in two ways: first, they captured the impact of disadvantaged status across the life course via trajectories and second, they considered race/ethnicity and gender jointly in a series of six dummy variables (e.g., White American, Black American, and Mexican American men and women). The approach allowed the investigator to offer additional evidence by traditional race/sex/gender by exploring how disease duration differentially impacts outcomes across different racial-ethnic and gender groups.

**CONSIDERATION OF INTERSECTIONALITY**

Innovative approaches to study health disparities must be much more than combining different datasets to identify nonclinical drivers of clinical outcomes. Researchers are also urged to consider analytical strategies such as intersectional inquiry that recognizes how SDOH such as race, gender, class, sexual orientation, disability, and other various sources result in intersecting contributions to differences in outcomes (Lopez & Gadsden, 2016). The concept of intersectionality was originally coined by legal scholar Kimberle Crenshaw (1989) who explained the combination of epistemology and specific research techniques that can be utilized to identify the relationships among individual identities and systems of oppression that impact health outcomes (Kelly et al., 2022). Intersectionality considers how the differing experiences across the aforementioned dimensions translate into very different lived experiences and consequently different clinical outcomes (Lopez & Gadsden, 2016). These lived experiences begin in childhood and grow synergistically over time (Lopez & Gadsden, 2016). Intersectional approaches also consider geographic inequalities and how they influence outcomes (Bambra, 2022). More specifically, the overlap of multiple and everchanging identities and in different locations equates to different experiences that are oftentimes overlooked during traditional analyses that emphasize one unique identity and experience (Kelly et al., 2022). Furthermore, these different experiences result in developmental pathways in childhood and adulthood with some trajectories leading to positive outcomes and other negative outcomes (Lopez & Gadsden, 2016). Specifically, these issues have implications for disparities in brain health that potentially translate to stroke disparities as well as disparities in post-stroke conditions (Hilal & Brayne, 2022; Labovitz, 2020). The end result is that some experience health equity, while many others do not (Kelly et al., 2022).

The limited amount of literature discussing intersectionality and aphasia may be partially explained by difficulties in measuring the complex relationship of social determinants and stroke outcomes. Furthermore, the concept of intersectionality was mostly implicated in health outcomes in the medical and public health literature (Bridges et al., 2017). Additive models of demographic characteristics incorporate multiple jeopardy or the impact of belonging to combined salient groups such as race, age, and gender that each contribute to disease processes (Nicolas et al., 2017). However, they are not tailored enough to capture particularities or unexpected effects of some combinations of identities, such as the adverse effect of upper-class status on members of a particular racial or ethnic group. This suggests that there are multiple levels at which the effects of intersectionality may impinge on the individual and may be measurable, a consideration consistent with multi-level, social-ecological models of human development and of SDOH (Seng et al., 2012). For example in Fig. 3, salient group interactions that impact outcomes arise from policy, environmental, interpersonal, and intraindividual influences.

Accordingly, the multilayered conceptualization underlying the complex interaction of identities and life experiences in the SDOH intersectionality of PWAs can be meaningfully captured using Bronfenbrenner’s socio-ecological model (1979). This model is useful to propose the SDOH intersectionality in aphasia
outcomes as being under the influence of different mutually influencing systems, encompassing the intraindividual and interpersonal levels under the broader downstream impact of upper contexts such as policy and environmental levels. Bronfenbrenner argued that as children develop, they are impacted by a complex system of relationships in their surrounding environment, from immediate family, as well as cultural values, laws, and customs. The individual systems include the microsystem, the mesosystem, the exosystem, the macrosystem, and the chronosystem. The microsystem or immediate environment such as family, school, and peers is believed to be the most influential level, as it is related to the most immediate environmental setting where the child develops. The mesosystem is the relationship between microsystem interactions such as school and peers. Subsequently, the exosystem is not directly involved with the individual’s development but influences via relationships such with parents, caregivers, and community resources. Finally, the macrosystem includes societal structures and values and indirectly impact the individual via influences on society as a whole. Although most often used as a psychosocial model, a person’s biology can be seen as part of the innermost circle, making the theoretical framework applicable to research on health.

It seems likely that modeling major demographic characteristics (i.e., race, gender, education, and income) would explain a large amount of variance if demographics were the only intersectionality-focused predictors. But more total variance might be explained if more levels could be considered. Considering several levels could capture more particularity and a less partial, less distorted understanding might emerge (Merlo, 2018). There are many potential variables to operationalize this concept within each level; these may vary depending on the research question. Starting inner-most level, we would ideally measure the personal, internalized, or interpersonal valence the person assigns to this identity, including potentially mitigating effects of cherishing the identity (Mossakowski, 2003). At a meso- or interpersonal level, exchanges involving experiences of discrimination or privilege could take place. It would not necessarily be carrying the identities themselves that would adversely affect outcomes, but rather the discriminatory, aversive, stressful interpersonal exchanges that would potentially increase in frequency as the number of marginalized identities increased (Corus & Saatcioglu, 2015). Thus, these interpersonal experiences—which are amenable to change—would be the mediators between intersecting marginalized identities and outcomes disparities.

At the exo- or contextual level, ambient factors, such as living as a member of a racial/ethnic or sexual minority or out-group, could impinge as additional stressors (Klest, 2012). Out-group status could increase risk of victimization in terms of crime, threats to civil liberties, or other identity-based trauma exposures (e.g., rape, hate crimes, arbitrary traffic stops, greater risk of incarceration, being forced to leave the family home in adolescence due to queer identity). Finally, at the macro-level, structural inequalities in education and income associated with marginalized status could take their toll. Within aphasia, structural inequalities may partially consist of cost (Ellis et al., 2012) which is influenced by access to medical insurance or type of employment (Gilmore et al., 2022).

Despite the potential for intersectionality offering novel insights into the role SDOH play in health outcomes, little progress has been observed in the utilization of such approaches in the United States (Holman et al., 2021).
Research approaches including intersectionality methodology requires clinicians and researchers to engage in critical self-examination and self-reflection to determine how their own race, gender, class, sexual orientation, disability, language, and/or social position interact with systems of inequality that potentially impact clinical outcomes (Lopez & Gadsden, 2016). This type of self-exploration will be required to understand and respond to complex intersection of factors that influence outcomes. Thus, one of the key challenges for researchers and clinicians is their comfort level with a commitment to social justice issues that must be considered in intersectional approaches to research (Kelly et al., 2022). It is also important to acknowledge that it can be challenging for researchers and clinicians to determine the most important intersections (i.e., SDOH) that must actually be explored (Kelly et al., 2022). Finally, despite the potential for intersectionality approaches to explore SDOH convergence in aphasia outcomes, limitations can be related to (1) narrowing the measurements of intersectionality and health outcomes, (2) studying the intersection of some groups to exclusion of others, (3) overlooking or ignoring key explanatory mechanisms that drive health disparities, and (4) the lack of consideration of life-course perspectives that show how health disparities emerge and vary across time and at different life stages (Harari & Lee, 2021).

Using Intersectionality Methods to Study SDOH Convergence in Aphasia Outcomes

While studies have shown that inequality in social and structural resources is linked to disparate aphasia outcomes at the level of demographic variables, the preceding discussion highlighted that intersectionality in aphasia outcomes may exist across several levels. For example, some individuals may experience disparities related to their racial/ethnic background in relationship with chronic diseases, their employment which impacts the type of medical insurance they have access to, and where they reside such as in communities that have limited infrastructure to ensure access to quality care. However, the conceptual linkages and estimation of the contributions across several levels in modeling involve complex quantitative techniques (Bowleg, 2012). It makes sense to carry this work forward, first by tentatively articulating conceptual linkages between common variables and intersectionality at other social–ecological levels and then estimating the proportion of variance in outcomes potentially attributable to intersectionality at each of these levels. Intersectionality might, conceptually and statistically, be a cross-cutting element that measures multiple levels simultaneously.

Intersectionality has been considered in some speech-language disorders such as stuttering (Daniels et al., 2023), autism spectrum disorders (Miller et al., 2022), and right hemisphere disorders (Fannin et al., 2023). Yet there has been very little progress in aphasia and other post-stroke disorders beyond studies of the intersectionality of race, sex, and stroke symptoms (Hosman et al., 2022). It is important to note that the literature that has considered intersectionality has primarily emphasized global disability which offers some guidance on how to study intersectionality and aphasia. In fact, Guerrero-Arias et al. (2020) discussed intersectionality within aphasia when providing a narrative of the experience of a Black woman living with nonfluent aphasia in Cali, Colombia. The authors stress how the experience of life participation with a communicative disability is compounded onto the previous identities of race, sex, and socioeconomic status. We suggest here that social determinant variables assessed jointly may exacerbate group differences based on current social determinants that have been identified in previous literature. For example, Mochari-Greenberger et al. (2015) found race–sex interactions on the likelihood of calling emergency medical systems (EMS) with men and White American patients more likely to call EMS based on stroke symptoms. Thus, the drivers influencing men and White Americans must be considered separately and collectively to determine the true impact of EMS use. A study evaluating question-asking in right hemisphere brain damage found Black American women to demonstrate reduced question asking compared to White American women (Fannin et al., 2023). This
relationship was also moderated by age suggesting a complex intersectional relationship between right-hemisphere damage, age, and question-asking outcomes subsequently impacting the patient–clinician relationship. Regarding education, higher education is associated with improved scores on assessment of aphasia impairment within 24 hours of intake (González-Fernández et al., 2011) but is associated with reduced life participation (Worrall et al., 2017). Worrall et al. (2017) suggests that a possible explanation for the education and participation interaction is that the communication difficulties feel more devastating for those with a higher education. This finding may also suggest a fluctuation in the strength of the influence of a social determinant that is dependent on the time post onset of injury.

CONCLUSIONS

As the study of aphasia outcomes continues to incorporate the role of the SDOH, it is essential to begin also including the concept of intersectionality to optimize nuanced descriptions of participating factors in the aphasia patients’ outcomes discussed in the research findings. This approach will require examination of the structural and environmental factors of the SDOH in combination with the role patient identities, such as race and gender, play on communication outcomes. Applying intersectionality to the study of aphasia outcomes contextualizes and recognizes the ways in which race, gender, class, sexual orientation, disability, and other axes of political, social, and economic systems intersect to determine observed outcomes. However, at different levels, such systems produce very different lived experiences for entire categories of people who are embedded within complex webs and social networks at different levels. These lived experiences can either enhance or challenge the developmental pathways over the life course and the trajectory of mental, physical, and emotional maturation. While the use of an intersectional lens embraces the multitude of factors that influence aphasia outcomes, the integration of race, class, gender, disability, and other identities, statuses, and social locations into research also introduces considerable complexity. However, understanding that every person’s experience is fundamentally different than the experience of others, based on their unique identity and structural positions within systems of inequality and structural impediments, allows us to evaluate the overwhelming inequities associated with these longstanding disparities and better assess, treat, and advise patients from a diversity of backgrounds, particularly individuals from marginalized communities. These individuals’ intersectional life course trajectories may have involved challenges with tremendous impact on their general health, including brain health. Additionally, intersectional research will benefit from mixed qualitative–quantitative approaches that, based on community and patient input, can systematically shed light on other participating factors in aphasia outcomes, particularly structural/systemic upstream SDOHs, not often explored by traditional structured methods (e.g., institutional surveys and questionnaires) (Magwood et al, 2019; Torregosa et al., 2018).

We acknowledge that this additional complexity requires additional time and resources to develop and understand the mutually deterministic relationships and their influence on aphasia and aphasia outcomes. This type of research requires use of interdisciplinary study teams composed of scholars with distinct, but complementary skills to illuminate those issues that affect health, well-being, and recovery of those from marginalized communities. Through the use of team science, we can understand the ways in which institutional rights and duties allow people to participate and receive resources such as health, education, and social services in ways that are fundamentally shaped by intersecting inequalities. Through this research and enhanced understanding of equality, access, and opportunity, we can make the invisible visible by interrogating how race and class systems of oppression work together in shaping the social determinants of health.

FUNDING

None.

CONFLICT OF INTEREST

None declared.
REFERENCES


Heinrich, C., Maffioli, A., & Vázquez, G. (2010). A Primer for Applying Propensity-Score Matching


Le Dorze, G., Salois-Bellerose, É., Alepins, M., Croteau, C., & Hallé, M.-C. (2014). A description of the personal and environmental determinants of participation several years post-stroke according to the views of people who have aphasia. Aphasiology, 28(4), 421–439


perspectives from African Americans with stroke, caregivers and healthcare professionals. *Journal of Stroke and Cerebrovascular Diseases*, 28(9), 2506–2516


