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Blueprint for Future Research Advancing the Study of Sexuality, Gender, and Equity in Later Life: Lessons Learned From Aging With Pride, The National Health, Aging, and Sexuality/Gender Study (NHAS)

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Abstract

While interest in sexuality/research is growing, in the past, it has been largely invisible in gerontology. By exploring the full range and dimensions of sexuality and their interrelationships with multiple factors, this article presents conceptual, substantive, and methodological advances for the field of sexuality in later life. Based on the Sexual Equity Framework, an extension of the Health Equity Promotion Model, this article highlights the heterogeneity and intersectionality of sexuality across the life course, examining how historical and contemporary contexts frame key dimensions of sexuality at multiple levels (intrapersonal, interpersonal, sociocultural, and structural) and their relationship with sexual quality of life. Utilizing findings from Aging with Pride: National Health, Aging and Sexuality/Gender Study, the heterogeneity and intersectionality of age, gender, race, and ethnicity are critical to understanding sexuality and its dimensions in later life. Many adults experience changes in sexual and gender identities over time. Affirming sexual and gender identities, social connections, and health-promoting behaviors are positively associated with sexual quality of life, while sexual stigma and marginalization have adverse consequences. The study of sexuality needs to be fully integrated into gerontology. The Sexual Equity Framework explicates the potential deleterious effect of historical and contemporary structures on sexuality as well the important roles of affirmation, agency, and resilience among older adults, and recognizes the important role of human rights to advance sexual quality of life. Important directions for future research, practices, and policies are outlined.

Keywords: Diverse, Gender equity, Life span, Quality of life, Sexual equity

With the rapid aging of the global population comes new opportunities to better understand aspects of later life that have remained largely invisible. One such area is sexuality, with the intersections of sexuality and aging inadequately explored to date. Most disciplines have not comprehensively embraced the study of sexuality in later life, and the field often remains in the shadows of scientific inquiry (Fredriksen-Goldsen, 2017).

Intrinsically linked to ageism, the myths that support the lack of attention to sexuality are numerous, including older adults as a monolithic group are asexual or lack sexual drive and appeal (Jen, 2016; Thompson et al. 2014); and sexual behavior in old age is shameful, perverse (Gewirtz-Meydan et al., 2018). Interestingly, older adults are often not asked sexuality-related questions in research as they were as younger adults, based in part on erroneous
assumptions that such questions are too sensitive or offensive for older adults (Fredriksen-Goldsen & Kim, 2015). This unwarranted paternalistic oversight restricts older adults’ autonomy and freedom of choice, leaving the field largely unresponsive to sexuality in later life. One notable exception was the study of later life sexuality by Lindau et al. (2007), who found many older adults are sexually active. While the older groups reported a lower prevalence of sexual activity than younger groups, nearly three quarters of those aged 57–64 were sexually active (73%), slightly more than half aged 65–74 (53%), and more than one-quarter aged 75–85 (26%; Lindau et al., 2007).

In this article, I take a holistic approach to the study of sexuality in later life, drawing upon lessons learned from Aging with Pride, National Health, Aging and Sexuality/Gender Study (NHAS) in the United States, the first longitudinal study of its kind that focuses on sexuality and gender among sexually and gender diverse adults aged 50–102. My goal is to demonstrate how lessons learned from the research of an understudied older adult population can offer valuable insights into the study of sexuality among older adults in general. By employing the Sexual Equity Framework and probing the intersections of sexuality, I will discuss ways to advance the field conceptually, substantively, and methodologically and how these improvements can create innovations in gerontological research, practice, and policy. In this Article, I will consider both opportunities and constraints for the field, demonstrating that embracing older adults’ sexuality requires us to consider both sexual quality of life, diversity, and freedom as well as the potential for sexual risks, exploitation, and violence that can be manifested, with the greatest threat for those with diminished decision-making capabilities.

**Sexual Equity Framework**

While several theoretical approaches have been used to understand sexuality, such as Dialectical Theory (Diamond, 2009) and Gendered Sexuality over the Life Course (Carpenter, 2010), they have been inadequate to consider the full multidimensional and intersectional nature of sexuality in later life. By building upon and extending the Health Equity Promotion Model (Fredriksen-Goldsen et al., 2014), the Sexual Equity Framework provides an integrated approach to examine sexuality more comprehensively in late life. As showed in Figure 1, the Sexual Equity Framework situates sexuality within the life course, incorporating both historical and contemporary environments. I define sexuality as sexual experiences and expressions that embody multiple key components and dimensions, including sexual orientation, identity, behavior, attraction and desire, centrality, fluidity, and sensual, intimate, and romantic relationships that interface at multidimensional levels, including intrapersonal, interpersonal, sociocultural, and structural, resulting in differing levels of sexual quality of life. This framework highlights the heterogeneity and intersectionality of sexuality by age, gender, race, and ethnicity as they frame key dimensions of sexuality at multiple levels resulting in differing experiences of sexual quality of life.

The premise of sexual equity is that older adults should have the opportunity to embrace and self-identify their sexuality, with a collective responsibility to support autonomy, privacy, self-determination, agency, justice, and well-being. While the sexual health of older adults is an important concern, it can, as a framing concept, inadvertently narrow the focus and limit our understanding of sexuality in late life. The World Health Organization (2006) defines sexual health as a “state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity;” I prefer sexual quality of life to sexual health, as it is broader, and more fully encapsulates the multiple dimensions of sexuality. “Health” has historically upheld, and likely will continue to inadvertently support, the over medicalization of sexuality.

I define sexual quality of life as the perceived expectations and perceived and actual level of satisfaction of an individual’s sexuality and its expression through its multiple dimensions. The field’s lack of attention to sexuality in later life has created a void in terms of addressing well-being and sexual risks and protective factors among older adults. Our attention to sexual quality of life allows us to consider both positive and adverse factors, and their
consequences, as they are associated with sexual quality of life. My research has documented that the sexual quality of life among sexually and gender diverse older adults is in turn, positively associated with the overall quality of life, well-being, and mental and physical health (Fredriksen-Goldsen, 2022). Other studies have also found sexual satisfaction has a direct effect on the quality of life among older adults, as does the frequency and perceived importance of sexual behavior (Flynn & Gow, 2015).

Regardless of sexual orientation or sexual identity, research has documented sexual dysfunction (Srinivasan et al., 2019) and an increase in sexual health risk behaviors among older adults, with a concomitant rise in sexually transmitted infections (Bodley-Tickell et al., 2008) and higher rates of HIV (Emlet et al., 2020). It is important to also consider that some older adults are at risk of sexual exploitation and violence, including sexual elder abuse. Later I delineate the key components of the Sexual Equity Framework, taking into consideration they are integrative and not mutually exclusive, and discuss how they relate to the sexual quality of life of older adults.

**Historical and Contemporary Contexts**

Life course, a key component of the Sexual Equity Framework illustrates how both historical and contemporary contexts that are shared by age cohorts must be taken into consideration to understand sexuality in later life. Lived experiences through the Iridescent Life Course (Fredriksen-Goldsen et al., 2022) illustrate how the study of sexuality has varied within historical contexts over time, heavily influenced by science, medicine, religion, spirituality, law, and politics. In Victorian society, for example, sexuality was largely invisible, with only parlor talk whispers (Chiang, 2010).

The first phase of scientific study of human sexuality, sexology, was primarily conducted by psychiatrists, such as Richard von Krafft-Ebing and Albert Moll (Chiang, 2009); rooted in Puritanism, with any sexual behavior outside of marriage, or not for the sake of procreation, deemed as deviant and pathological; sexual behavior for pleasure and contraception were prohibited (Kahan, 2021; Leng & Sutton, 2021). In the early twentieth century (1900–1920), the second wave of sexology research aimed to expand sexuality research beyond medicine (Chiang, 2009), introducing the modern notion of sexual freedom, “the ability to conceive of, articulate, and enact a sense of sexual self-definition and self-agency” (Chiang, 2009, 2010).

In the mid-1900s, the Kinsey Reports, *Sexual Behavior in the Human Male* (1948) and *Sexual Behavior in the Human Female* (1953), provided statistical evidence of the high prevalence of sexual behavior by both men and women (Chiang, 2010). However, while this period was slowly giving rise to changing attitudes toward sexuality, it was tempered by fear and backlash. In 1952, the first edition of the *Diagnostic and Statistical Manual for Mental Disorders* (DSM-I) included both frigidity (Margolin, 2017) and homosexuality (Chiang, 2009). For women, frigidity referred to the absence of sexual desire or arousal (Margolin, 2017), and homosexuality was designated as a sociopathic personality disorder, which would remain until 1973 (Silverstein, 2009). In 1960, with the approval of the birth control pill, the U.S. Food and Drug Administration ignited the sexual revolution (1960s–1980s), marked by delinking sexual desire from heterosexual obligations (i.e., marriage and procreation), and women demanding the right to birth control and sexual pleasure (Chiang, 2009).

While different aspects of sexuality have been targeted at differing historical periods, the policing of sexuality has often been linked with vulnerability as well as the maintenance of power (Foucault, 1984). Even in contemporary times, debates continue over contraception, there are claims that HIV/AIDS is God’s punishment for sinful sexuality (Olaore & Olaore, 2014), and gender transitions are codified as gender dysphoria in the DSM-5 (Beek et al., 2016). It is important to understand how such policy debates continue to frame sexuality and sexual experiences among older adults over their life span, and how they are related to the mechanisms and trajectories in sexual quality of life. Interestingly, in NHAS, our research found that each generation of sexually and gender diverse older adults evidenced differing configurations of risks and resources in relation to sexuality. For example, those who came of age during the Sexual Revolution, the Pride Generation, born 1950–1964 (Fredriksen-Goldsen et al., 2020), were more open about their sexual identities and experienced more victimization and discrimination.

**Key Dimensions of Sexuality, Gender, and Intersectionality**

In the Sexual Equity Framework, sexuality is dynamic with multiple key components, including sexual orientation, identity, fantasy, attraction, behavior, and sensual and romantic relationships, all of which can evolve with shifts in the dimensions of valence, centrality, transformation, and intersectionality. See Table 1 for a description of these and other components and dimensions of sexuality, sex, and gender. Highlighting the variability in the life course, the Sexual Equity Framework recognizes intersecting social locations in relation to sexuality, including by age, gender, gender expression, race and ethnicity, and ability and disability status, to name a few.

Research has documented important gender differences in sexual attraction, desires, feelings, eroticism, pleasure, and fantasies. Older women are less likely than older men to be sexually active, often associated with the lack of an available sexual partner (Lindau et al., 2007). There is evidence that gender affects the subjective sexual quality of life, with men endorsing higher levels of satisfaction than women across sociocultural contexts (Laumann et al., 2006). There are also gender differences in the type and
frequency of sexual health problems experienced by older adults, with higher proportions of men reporting declines across several sexual health areas, while the proportion of women reporting declines has remained relatively stable (Lee et al., 2016).

As gender is frequently aligned with access to resources and opportunities, it often affects sexuality and sexual decision-making. While society tends to encourage the ongoing sexuality of men through the commercialization use of various medicines for sexual dysfunction (e.g., Viagra), it has lagged in this work for women (e.g., Addyi; Marshall, 2009). To date, there remains an incredible dearth of research on sexual experiences and intimacy among transgender older adults (Dhingra et al., 2016).

While for many older adults, sexual activity and desire have been found to decrease with age, often due to physiological and psychosocial changes (Lindau et al., 2007), intimacy does not (Kołodziejczak et al., 2019). With aging, sexual activity may at times need to be adapted to accommodate physical health, function, and other changes. Physical limitation itself can limit sexual behavior and options.

Race and ethnicity intersect with sexuality and gender in important ways, although few studies have investigated these relationships. One study found lower levels of sexual well-being among older Asian adults compared to others, while another posited that stereotypes resulted in African American women feeling less empowered and jeopardized in their sexual lives (Bond et al., 2021; Laumann et al., 2006). There are important differences between race and ethnicity in how sexuality is expressed. For example, in terms of sexual identity, many African Americans use the term “same-gender loving” (Fredriksen-Goldsen, 2016), which is most often coded as “missing” in sexuality research. Furthermore, sexuality terms in English are often not translatable in Spanish (Zea et al., 2003) and sexual orientation, for example, may be determined more by sexual roles that identity, per se. Such examples highlight

Table 1. Components and Dimensions of Sexuality, Sex, and Gender

<table>
<thead>
<tr>
<th>Component/Dimension</th>
<th>Description</th>
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<tbody>
<tr>
<td>Sexual orientation</td>
<td>Incorporates sexual identity, emotional and sexual attractions, sexual behavior, and romantic relationships. NHAS research has found the prevalence of specific sexual orientations varies depending on which and how such dimensions are assessed.</td>
</tr>
<tr>
<td>Sexual identity</td>
<td>The labeling of one's sexuality (e.g., heterosexual [straight], lesbian, gay, bisexual, and sexually diverse, such as pansexual and same gender loving). Those who are asexual most often report feeling little or no sexual attraction. NHAS has documented that a person's sexual identity may change over time or between contexts, and when provided an opportunity some people, including older adults, prefer to rate their sexual identity on a continuum.</td>
</tr>
<tr>
<td>Sexual behavior</td>
<td>Actual sexual actions, regardless of how one chooses to self-identify. For some older adults, NHAS has documented an incongruence between sexual identity and behavior. An older adult may be behaviorally bisexual (i.e., has had sex with men and women) but may identify as lesbian when with other lesbians, bisexual when with other friends who are not lesbians, and heterosexual when seeking health care.</td>
</tr>
<tr>
<td>Sexual desires</td>
<td>The subjective psychological and/or physiological sexual awareness that can be triggered by external and internal stimuli not necessarily resulting in overt sexual behavior. Sexual desire is influenced by multiple biopsychosocial factors, such as the hypothalamus, limbic system, gender expectations, religious beliefs, social norms, communications, stigma, and physical and mental health. Sensuality, sexual attraction, and romantic attraction are independent constructs (e.g., a person may feel romantic attraction while not having sexual desire). NHAS has documented that some older adults who do not identify as a sexual minority, report having been in a romantic relationship with a member of the same sex, in one case for over 50 years.</td>
</tr>
<tr>
<td>Sexual fluidity and transformation over time</td>
<td>Shifts in sexual identity, attractions, behaviors, and relationships. NHAS has found that approximately 25% of sexually and gender diverse older adults have changed their sexual identity over time, with more fluidity among women than men. The percentage of adults who report same-sex attraction and same-sex behavior may be two to three times higher than those who self-identify as sexual minorities.</td>
</tr>
<tr>
<td>Sex</td>
<td>The biological characteristics that define humans as female, male, or intersex (persons born with genitals, organs, gonads, or chromosomes that are not clearly male or female, or both male and female).</td>
</tr>
<tr>
<td>Gender</td>
<td>Characteristics of women, men, and gender nonbinary or diverse that are socially constructed. Self-identification of sexuality can be complex for gender diverse people as sexuality is intrinsically linked to gender identity, but gender and sexual identity are separate constructs. It is erroneous to consider transgender as a sexual identity category. Transgender older adults can have any type of sexual identity, behavior, or expression.</td>
</tr>
<tr>
<td>Gender expression</td>
<td>One's degree of femininity or masculinity, often associated with diverse gender roles.</td>
</tr>
</tbody>
</table>

Note: NHAS = Aging with Pride, National Health, Aging, and Sexuality/Gender Study.
how intersectional differences by age, gender, race, and ethnicity can be illuminated or erased in the study of sexuality in later life.

**Intrapersonal, Interpersonal, Sociocultural, and Structural Mechanisms**

Sexuality exists within a complex web of multilevel intersecting mechanisms, including intrapersonal, interpersonal, sociocultural, and structural. As Figure 1 shows, these mechanisms can mediate the effects of the historical and contemporary contexts and the role of various dimensions of sexuality on sexual quality of life. The mechanisms can also moderate these relationships, which accounts for how differing sexual quality of life trajectories may emerge among older adults, with the potential for both positive and negative consequences and outcomes.

**Intrapersonal**

Many intrapersonal factors such as beliefs, attitudes, desires, fantasies, and human agency are related to sexuality in later life and sexual quality of life. Older adults’ internalized ageist views and negative attitudes about aging are associated with more negative views of sexuality; those feeling older and holding fewer positive views about aging rate sexual activity as less enjoyable over time (Estill et al., 2018). Internalizing negative ageist and intrapersonal sexual stigma are associated with a reduction in sexual behaviors and lower sexual quality of life (DeLamater & Sill, 2005; Kasif & Band-Winterstein, 2017). It is important to note that negative changes in sexual activity in later life can also result from increasing demands and role changes, such as assuming caregiving roles, changes in employment and financial status, and confronting illness, disability, or death (DeLamater & Sill, 2005).

Some view the transition into old age as a resource, enabling them to express their sexuality in new ways (Kasif & Band-Winterstein, 2017). Older men and women who identify sexual activity as important have been found to report significantly greater desiring sexual activity as an important correlate of frequent sexual activity for older adults (DeLamater, 2012; DeLamater & Sill, 2005). Many older adults view sexual activity as an important component of a close emotional relationship, but do not express interest in sexual behavior outside the context of a relationship, and those not in a relationship often do not view sexual activity as a high priority (Gott & Hinchliff, 2003). Relationship satisfaction is an important correlate of frequent sexual activity for older adults (DeLamater, 2012).

Interpersonal sexual stigma in later life has been found to be associated with high-risk sexual behaviors (Emlet et al., 2017), exploitation, victimization and abuse, and lower quality of life (Fredriksen-Goldsen, Emlet, et al., 2013). Sexual abuse is the nonconsensual sexual contact of any adult or sexual contact with a person incapable of giving consent (National Center on Elder Abuse, n.d.). The estimated prevalence of sexual elder abuse varies widely, between 0.2% and 5.2%, with women experiencing sexual elder abuse at a much higher rate than men (Teaster & Roberto, 2004). NHAS found that sexual and gender minority older adults have also been found to be at elevated risk of sexual exploitation, have lower rates of reporting such abuse, and are often threatened that their identities will be disclosed if they report such abuse (Fredriksen-Goldsen, Kim, et al., 2013). Research has shown that most older adults experiencing sexual elder abuse have cognitive difficulties and limitations in the ability to care for themselves, which increases their dependency and vulnerability, and potential for the susceptibility to abuse (Myhre et al., 2020).

**Sociocultural and structural**

The Sexual Equity Framework posits that sociocultural and structural mechanisms can promote or hinder the sexual quality of life. NHAS finds that social, cultural, and community norms, which are context-dependent, can affect sexual identities, attitudes, and behaviors in later life (Fredriksen-Goldsen et al., 2020), potentially conveying positive or negative messages about sexuality and sexual behavior. For example, social exclusion of older adults exists in dating sites (Ayalon & Gewirtz-Meydan, 2017). While the media often portrays older adults as lacking sexual vitality and attractiveness, communities can utilize agency and resilience to create new norms supporting sexual quality of life (Fredriksen-Goldsen, 2021).

Environments, themselves, can promote or undermine the sexual quality of life. Most care environments for older adults do not support sexual desire or behavior (Bauer et al., 2007). The lack of privacy and private spaces, an emphasis on medical needs, and a policy of separating couples upon entry to care are all hindrances and harmful to older adults’ sexual quality of life. Sexual quality of life is construed by such exclusionary practices. In addition, physicians and other health care and aging providers generally do not receive education or training on sexuality in later life, and as a result, older adults’ sexual quality of life...
is not addressed or may be dismissed during routine health care visits (Gott et al., 2004).

Implications for Moving Forward
Increasing our attention to sexuality is responsive to the increasing diversity in later life. To promote sexual equity by age, innovative interventions are needed in research, practice, and policy.

Research Implications
Promoting scientific and methodological rigor in the study of sexuality in later life require not only clear conceptualization and definition, but also the development and implementation of best practices in measurement, data collection, and analysis. As we move forward, a comprehensive approach to data collection is needed to better understand sexuality and its multiple dimensions among diverse populations. As a first step, we need consistency in measurement and the elimination of age-based restrictions that exclude older adults in sexuality research, as well as in the timeframe assessed to create comparability across studies. Moreover, nonresponse patterns to any type of sexuality-related question should not be simply ignored, but fully investigated so measures can be constructed to mitigate potential age, sexual, gender, racial, ethnic, and other biases. There are many important reasons to include sexuality measures in research (Figure 2). As researchers and as gerontologists, we must consider our own biases and assumptions about sexuality and gender and incorporate a variety of types, measures, and conceptualizations of sexuality (Gewirtz-Meydan et al., 2019) and ensure the use of multilevel methods that allow for analysis of intrapersonal, interpersonal, sociocultural, and structural contexts to fully understand the sexual quality of life within and across communities, including understudied populations. Understanding individual and community trajectories and cohort variations in sexuality within shifting structural and environmental contexts are needed to help us articulate ways to promote sexual equity, with attention to the intersectionality between race, ethnicity, gender, age, and sexual quality of life.

Practice Implications
Utilizing an equity perspective, focusing on resilience and human agency by capitalizing on older adults’ strengths,
will allow for a greater understanding of sexuality and sexual quality of life. Research has documented providers generally lack knowledge of sexuality, may experience feelings of discomfort when discussing sexuality-related issues, and rarely include sexuality in their assessments (Gewirtz-Meydan et al., 2018). Training is needed to improve providers’ skills and comfort discussing all aspects of sexuality, including how to conduct a sexual assessment. Regardless of sexual orientation or sexual or gender identity, an increasing number of older adults are engaging in sexual health risk behaviors. Yet few community-level prevention efforts have been designed for older adults, in part based on biased assumptions that older adults are not sexually active. Community-level training programs are needed to counter such myths. The development, use, and evaluation of best practices have demonstrated that sexuality and sexual health promotion efforts are valuable and effective (Fredriksen-Goldsen et al., 2017). Furthermore, the intersections of cognitive impairment and dementia have raised serious debates about the ability to “consent.” It is imperative that care facilities and other settings serving older adults need to clearly articulate and institute transparent policy directives to facilitate the sexual needs and desires of residents; it is imperative that they also receive instruction on the impact of building design on privacy and ways to promote autonomy and choice for older adults. One intervention, for example, created a “permission giving climate” for older adults, which had a significant and positive effect on knowledge and permissive attitudes regarding sexuality and aging among older adults, staff, and family members (White & Catania, 1982).

Family members, law enforcement, and providers working with older adults, including in institutional settings, need to be trained on recognizing, preventing, and intervening when sexual elder abuse occurs (Teaster & Roberto, 2004). An integrated and comprehensive approach to promote sexual quality of life must be developed with multidisciplinary partners from community, local, state, and national levels working together for a holistic and inclusive approach to sexuality.

Policy Implications
Human rights must embrace sexual rights. Many policy changes are needed to promote sexual equity, such as nondiscrimination laws in employment, housing and public accommodations, consent, and other protections from sexual violence and exploitation. To advance human rights, the roles of participation, nondiscrimination, transparency, and accountability for older adults are imperative relative to sexuality and must be considered. Older adults of all sexualities and genders must have access and freedom of choice in terms of sexuality and their bodies. Diverse and inclusive representations of sexuality, gender, race, ethnicity, disability, and ability status as well as others are likely instrumental in promoting agency among older adults to make decisions about their own sexuality and lives. It is critical to ensure that older adults have access to a variety of sexuality-related resources, ensuring the inclusion of diverse sexual and gender identities and expressions.

Conclusion
Many older adults desire intimacy and to be close to others as they grow older. Sexuality is an important aspect of life that needs to be fully integrated into the study of gerontology and the life course. We can use lessons learned from the NHAS research of understudied older adult populations as it offers valuable insights into the study of sexuality among older adults in general. As gerontologists, we must consider how historical and contemporary structures influence older adults’ sexuality, as well as the lack of sexuality research in our discipline. The Sexual Equity Framework explicates the important role of affirmation, agency, and resilience, the potential deleterious effect of historical and contemporary social structures on sexuality, and the important role of human rights to advance the sexual quality of life. Adopting a Sexual Equity Framework has critical global and human rights implications. Achievement of sexual equity requires researchers, policymakers, public officials, practitioners, and community organizers to provide resources and address environmental and structural risks while empowering older adults and those they love to take action and affirm their sexual quality of life.

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Conflict of Interest
None declared.

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References


