Today, an unprecedented number of women are going through the menopausal transition and entering post-menopausal life. In 2015, there were 858 million women aged 50 to 99 across the world. That number is expected to rise to 978 million by 2020, and to more than a billion by 2030 (United Nations 2015). The number of women reaching menopause is extraordinary; so, too, are the increases in women’s life expectancies. As Figure 36.1 shows, by the year 2000, life expectancy at birth surpassed 50 years in high-, middle-, and low-income countries. Figure 36.2 illustrates life expectancy at the age of 50. Depending on where she is living, a 50-year-old woman can expect to live another 25 to 35 years. An indication of the increase in the number of older women is the number of national menopause societies (now more than 50) established in the past 30 years, including the Mexican Menopause Society founded in 1992, the Indian Menopause Society in 1995, the Egyptian Menopause Society in 2003, and the Mongolian Menopause Society in 2010 (IMS n.d.). These societies were formed because of the increasing number of women passing through the menopausal transition and living well beyond the menopausal years. The need for research on menopause and post-reproductive life is increasing, but there continue to be large gaps in our knowledge about even the simplest questions. For example, what causes a hot flash, most commonly associated with the hormonal changes of the menopausal transition (Archer et al. 2011; Padilla et al. 2018; Rance et al. 2013)?

Anthropology has much to contribute to the study of menopause and post-reproductive life. While physicians tend to emphasize clinical norms, anthropologists are interested in variation in age at menopause across populations. Anthropologists apply both biocultural perspectives and the theory of developmental origins of health and disease (DOHaD) to understand how early life events shape the timing of the last menstrual period (Sievert 2014). While epidemiologists report symptom frequencies and risk factors for hot flashes, anthropologists apply biocultural, comparative, and phenomenological approaches to understand variation in symptom experience within the complicated contexts of women’s lives and physical environment (Lock 1993; Lock and Kaufert 2001). Anthropologists and other social scientists also examine the meaning and significance of menopause across cultures (Utz 2011). Unlike other social scientists, anthropologists can contribute an evolutionary perspective to ask when, how, and why menopause first appeared among our hominin ancestors (Hawkes 2003; Sievert 2011). The purpose of this review is to consider the evolution of menopause and post-reproductive life, variation in age
Menopause is the permanent cessation of menstruation due to the loss of ovarian follicular activity (WHO 1981). It is identified in retrospect, following 12 months of amenorrhea (having no menstruation). Although there are hormonal markers of reproductive aging, such as inhibin B and anti-Müllerian hormone (AMH), change in the pattern of menstruation is still the best indicator of menopausal status (Harlow et al. 2012).

Menopause is a female human universal, comparable across populations. In the state of Odisha, India, women in a rural village defined menopause as “when you reach age 55, it stops” (pre-menopausal 44-year-old). “It’s just the time it stops and that’s it” (pre-menopausal 45-year-old). “It started early and stopped with time” (post-menopausal 49-year-old) (unpublished 2015 data, Sievert). In the state of West Bengal, India, members of the Lodha tribal community have different explanations for menopause. For example, a Lodha woman (post-menopausal 45-year-old) explained,
I think menopause occurred to me because of the lack of blood. After menopause many diseases attacked my body. When I was having my menstrual cycles regularly, all the toxic blood in my body used to get out of my body. This is causing many diseases to me.

Another woman (post-menopausal 46-year-old) from the same community explained, “I had no reason to worry since this event happens to all women. I thought menopause came to me for good. My period has been transferred to my grand-daughter; now she is having her menstrual cycle” (unpublished 2014 data, Roy). In the state of Campeche, Mexico, most 40- to 60-year-old women described menopause as the end of menstruation, or the time when physical and/or emotional symptoms occur. In the capital city, some associated menopause with the end of fertility as in the following:

Una etapa donde dejas de, tus óvulos y ovarios empiezan a envejecer como envejeces tú, y como que ellos ya, como que se secan, y tú ya no reglas, y no nada, envejeces como quien dice, tu aparato reproductor, ya que llega el momento en el deja de trabajar. (It is a time when your eggs and ovaries start to get old, like you get old, and they shrivel, you stop menstruating and that’s it; you and your reproductive organs grow old because it’s time [for them] to stop working.)

(Sievert et al. 2021)
The ovaries don’t exactly dry up or “shrivel,” but there is a process of degeneration \((\text{atresia})\) of the ovarian follicles across the lifespan. All mammals make a large number of eggs before or at the time of birth. The eggs are surrounded by granulosa cells and other cells that form the ovarian follicles. Follicles nurture the eggs and, depending on their stage of development, make hormones such as estradiol, inhibin B, and AMH. All mammals undergo a sharp loss of eggs prior to or at the time of birth, continue to lose follicles until the onset of reproduction, and then lose even more follicles at a slightly slower rate throughout the reproductive period. Over time, there are fewer and fewer follicles in the ovaries that can be recruited for the production of hormones and the ovulation of a viable egg. Eventually, menstruation ends because there are not enough ovarian follicles to produce the necessary hormones in response to pituitary stimulation (Broekmans et al. 2009). The female human biological clock is an ovarian clock. Currently, there is no accurate way to predict age at menopause for an individual except perhaps by AMH levels, and, even then, the prediction is most useful within three years of the final menstrual period (Depmann et al. 2016; Nair et al. 2015).

The study of menopause is necessarily biocultural. Although menopause can be described as a physiological process, as above, age at menopause and symptom experience at midlife are shaped by the sociocultural environment, household stress, and an individual woman’s attitudes and behaviors. For example, prenatal or childhood exposure to the Dutch famine of 1944–1945 was shown to be associated with an earlier age at menopause (Elias et al. 2003; Yarde et al. 2013). Smoking behavior is consistently associated with an earlier age at menopause (Whitcomb et al. 2018). Reproductive factors like age at menarche, duration of breastfeeding of the last child, and age at first pregnancy are also associated with age at menopause (Dasgupta et al. 2015). With regard to symptoms, perceived stress has been associated with higher frequencies of hot flashes (Avis et al. 2015), trouble sleeping, headaches, and depressed mood at midlife. Religion may play an influential role in symptom experience through fasting and prayer (Strezova et al. 2017), clothing (Sievert et al. 2016), and beliefs. For example, a qualitative study of Macedonian women in Australia found that prayer and fasting helped to alleviate the depression and anxiety associated with menopause for some devout women, while for others religious fasting exacerbated menopausal symptoms (Strezova et al. 2017). In Sylhet, Bangladesh, Muslim women covered their heads with a scarf and were more likely to report hot flashes on the top of the head rather than on their upper chest and face as in the US (Sievert et al. 2008). In India, menopause signifies a gain in status, freedom from menstrual hassle, and an end to religious taboos associated with menstruation for both Hindu and Muslim women. In contrast to women in other settings, many do not associate menopause with health risks (Ray 2010).

From a biocultural perspective, the question, “What is menopause?” can be complicated by biomedical context. Menopause is the absence of menstruation. Menopause can also be perceived as an indication of the end of fertility. However, biologically, fecundity (the ability to become pregnant and carry a pregnancy to term) ends years prior to the last menstrual period (Wood 1994). Culturally, menopause is not always perceived as the end of fertility in women who have undergone hysterectomies, oophorectomies, or permanent sterilization (Sievert et al. 2021). The woman from Campeche, Mexico, who described menopause as occurring when the ovaries dry or “shrivel” (quoted earlier) underwent a tubal ligation at the age of 28. For her, menopause was not the end of fertility. Neither is menopause the end of fertility for women who undergo post-menopausal assisted reproduction. The reproductive span can be lengthened through assisted fertility practices so that a woman of 66 or 67 years of age can carry a pregnancy and give birth to a child from a donated egg (Cutas and Smajdor 2015).
The evolution of menopause and post-reproductive life

From an evolutionary perspective, menopause is a dilemma. If natural selection selects for traits that increase reproductive success, why do women experience a universal end to childbearing? The ovaries produce not only eggs, but also estrogens and other hormones. Estrogens are critical for the function of many organs in the body, such as bone. Why is the functional life of the ovaries so short, relative to the functional life of the heart?

First, it bears mention that menopause and post-reproductive life are not recent features of the human lifespan. Menopause was not brought about by longevity associated with sanitation and modern medicine. Although the average life expectancy was probably only 15 to 20 years for much of our evolutionary past, fossil remains from Paleolithic Neanderthals indicate that about 10% survived beyond the age of 40 (Trinkaus 1995). Within our own subspecies, 17% of our prehistoric ancestors survived beyond the age of 40 (Kennedy 2003). Our capacity for post-reproductive life extends back at least tens of thousands of years, and probably farther.

It also bears mention that menopause and post-reproductive life are not unique to humans. In fact, Cohen (2004) compiled a list of 35 species that had at least weak evidence for post-reproductive life. Whales provide some of the best non-human models for menopause. Among short-finned pilot whales (Globicephala macrorhynchus), 25% reach reproductive cessation at an average age of 36 but can live for another 30 more years (Ellis et al. 2018). Killer whales (Orcinus orca) stop breeding by 45 years of age but have an expected post-reproductive life span of about 16 years (Nattrass et al. 2019).

Although more closely related to humans, non-human primates are not better models of menopause. For example, female Japanese macaques were observed to cease reproduction after 25 years, but the monkeys lived only an average of 2.1 years past their final birth (Pavelka and Fedigan 1999). Some gorillas demonstrated an end to ovulatory cycles, but others continued to reproduce into their late forties (Atsalis and Margulis 2006). Although some chimpanzees have a post-reproductive life in the wild, most evidence suggests that chimpanzees do not experience a universal menopause followed by a long post-reproductive life span of about 16 years (Emery Thompson et al. 2007; Herndon et al. 2012).

There are several hypotheses that explain the evolution of menopause and post-reproductive life in humans.

**Aging eggs and aging mothers**

Among species that demonstrate the cessation of ovulatory cycles, menopause ensures that old eggs are not fertilized. When eggs are made before or at the time of birth (depending on the species), the eggs enter meiosis, but meiosis is halted right at the beginning of the process. Those eggs may wait 15 to 50 years before they resume meiosis and ovulate. The older the woman, the longer the wait, and the higher the risk of chromosomal abnormalities (e.g., trisomies) in offspring (Hassold and Hunt 2001; Pellestor et al. 2003). Menopause lowers the risk of fertilizing abnormal eggs.

Menopause may also ensure that mothers are young enough to survive pregnancy because older women are at greater risk for pregnancy complications compared with younger women (Fitzpatrick et al. 2017). In addition, menopause ensures that mothers are young enough to survive the infancy and childhood of their offspring. In our ancestral past, the risk of offspring death was high when mothers died in the first five years of a child’s life (Hill and Huntado 1991). Menopause lowers the risk of offspring death related to the loss of older mothers.
The grandmother hypothesis

Many anthropologists have argued that menopause and post-reproductive life evolved because post-reproductive grandmothers provided care and food for their grandchildren (Hawkes 2003; Hawkes and Blurton Jones 2005; Kim et al. 2012). These post-menopausal grandmothers increased their own inclusive fitness by investing in their daughters’ fertility and their grandchildren’s survival rather than continuing to produce children of their own. Many, but not all, studies have provided ethnographic and historical support for this idea (Gibson and Mace 2005; Jamison et al. 2002; Lahdenperä et al. 2004; Sear and Mace 2008; Sear et al. 2000; Voland and Beise 2002).

Menopause as a byproduct of conserved ovarian physiology coupled with longevity

Returning to the observation that female humans are not unique in having menopause and post-reproductive life, the menopause-as-a-byproduct hypothesis demands a cross-species perspective (Sievert 2011). Menopause is only possible when the female of a species can no longer produce new eggs. Fish, amphibians, and most reptiles cannot have human-like menopause because they continue to produce new eggs across the lifespan. The capacity for menopause and post-reproductive life is the result of a major evolutionary change in how eggs are made (oogenesis). This change in the pattern of oogenesis happened at least three times: In a reptilian ancestor of the tuatara (but not other living reptiles), in an ancestral bird, and in an ancestral mammal (Guraya 1989; Mossman and Duke 1973; Peters and McNatty 1980).

Across all mammals, the patterns of excessive egg production before or at the time of birth (as described earlier) and the gradual loss of follicles across the lifespan through atresia are highly conserved. All mammals would experience universal female menopause if their lifespan extended beyond their egg supply. In humans, the evolution of menopause and post-reproductive life is due to the highly conserved nature of ovarian physiology coupled with the phenomenon of human longevity. Female humans are not unique, but they are distinctive in their ability to live for so long beyond their ability to reproduce.

Variation in age at menopause

Age at menopause is determined by 1) the number of eggs that a woman is born with, 2) the average rate at which eggs and their follicles are lost through atresia, and 3) the threshold number of ovarian follicles needed to maintain menstrual cycles. Researchers disagree on the amount of heritability in age at menopause, but there is a genetic component (Morris et al. 2011; Murabito et al. 2005; van Asselt et al. 2004). Age at menopause may reflect prenatal development and exposures in utero (Bjelland et al. 2019; Steiner et al. 2010; Tom et al. 2010; Yarde et al. 2013) that affect the number of eggs at birth, as well as childhood development and exposures (Begum et al. 2016; Elias et al. 2003) that affect the rate at which follicles are lost. In adulthood, factors most consistently associated with an earlier age at menopause are smoking and nulliparity (never having had children) (Costanian et al. 2018; Gold et al. 2013; Whitcomb et al. 2018).

The best study of age at menopause in the US is the longitudinal Study of Women’s Health Across the Nation (SWAN) which followed 1,483 women from pre-menopause to post-menopause. The prospective mean age at menopause was 52.5 years, and there was no difference in age at menopause across the five ethnic groups (Chinese, Japanese, Hispanic, African American, and women of European descent) after adjusting for relevant variables such as level of education, marital status, parity (number of children), smoking, alcohol intake, self-reported health,
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Table 36.1 Ages at menopause in a small sample of countries

<table>
<thead>
<tr>
<th>Country (site)</th>
<th>Median age at natural menopause (method)</th>
<th>N</th>
<th>Age at interview</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>India, Uttarakhand, middle class</td>
<td>46.8 (probit)</td>
<td>129</td>
<td>30–65</td>
<td>Kapur et al. (2009)</td>
</tr>
<tr>
<td>Bangladesh, upper middle class,</td>
<td>48.1 (probit)</td>
<td>157</td>
<td>35–59</td>
<td>Murphy et al. (2013)</td>
</tr>
<tr>
<td>Sylhet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico, Puebla</td>
<td>49.6 (probit)</td>
<td>755</td>
<td>28–70</td>
<td>Sievert and Hautaniemi (2003)</td>
</tr>
<tr>
<td>Netherlands, Utrecht, 1975–1984</td>
<td>50.2 (prospective mean)</td>
<td>4,686</td>
<td>Longitudinal</td>
<td>van Noord et al. (1997)</td>
</tr>
<tr>
<td>Finland, population register, 1989</td>
<td>51.0 (life table)</td>
<td>1,505</td>
<td>45–64</td>
<td>Luoto et al. (1994)</td>
</tr>
<tr>
<td>USA, multicenter, 1996–2007</td>
<td>52.5 (prospective mean)</td>
<td>1,483</td>
<td>Longitudinal</td>
<td>Gold et al. (2013)</td>
</tr>
</tbody>
</table>

and use of oral contraceptives (Gold et al. 2013). It may be that when women experience similar childhoods in the US, in the broad sense of nutrition and infectious disease, then there are no differences in age at menopause (Sievert 2014). Table 36.1 illustrates variation in ages at menopause across six populations. In Bangladesh, exposure to infectious disease during childhood was associated with an earlier age at menopause (Murphy et al. 2013).

The average age at menopause is generally between 50 and 53 years in high-income countries and between 46 and 50 years, or even lower, in low- and middle-income countries (Dasgupta et al. 2015; IIPS and ORC Macro 2007; InterLACE Study Team 2019; Sievert 2014; Thomas et al. 2001). For cross-sectional studies, the statistical method of probit analysis is the best method for determining age at menopause because there is no opportunity for error in recalling age at menopause (Alpízar-Rodríguez et al. 2014; Sievert and Hautaniemi 2013). With probit analysis, after excluding women with hysterectomies, women aged 40 to 60 years are asked whether or not they have menstruated within the past 12 months (yes/no). Women are not asked their age at menopause; instead, the age at which 50% of the women are still menstruating and 50% of the women are no longer menstruating is calculated to be the median age at menopause (see Table 36.1).

Variation in symptom experience

Symptom frequencies vary within and across populations (Dennerstein et al. 2007; Melby et al. 2005; Sievert 2006). Hot flashes and night sweats are the most common reason for seeking medical care at menopause (Kronenberg 2010), but other symptoms at midlife, such as fatigue, aches and pains, and nervous tension, can be more commonly reported (Melby et al. 2011). As shown in Figure 36.3, headaches were more frequent than hot flashes in Beirut; joint pain was more frequent than hot flashes in Madrid (Obermeyer et al. 2007); depression, joint pain, and headaches were more frequent than hot flashes in West Bengal, India (Dasgupta et al. 2016); and depression and joint pain were more frequent than hot flashes in Sylhet, Bangladesh (Sharmeen et al. 2013).
Hot flashes during the menopausal transition are experienced as sudden, generally unpleasant, sensations of heat and sweating by up to 75% of women in the US (Gold et al. 2006). Hot flashes are a heat dissipation response—vasodilation and sweating—triggered by a core, hypothalamic mechanism within the context of declining estrogen levels (Archer et al. 2011). Hot flashes can be experienced for ten years or longer (Avis et al. 2015; Politi et al. 2008).

The exact physiologic mechanisms are not completely understood, but brain norepinephrine is increased in women with hot flashes compared to women without hot flashes (Freedman 2014), and kisspeptin neurons are most likely involved (Padilla et al. 2018; Rance et al. 2013). Kisspeptin neurons activate the secretion of gonadotrophin-releasing hormone which plays a key role in the regulation of reproduction (Harter et al. 2018). Women with hot flashes have a narrower thermoneutral zone compared to women without hot flashes. The thermoneutral zone is the range of thermal comfort between the temperatures that cause sweating and temperatures that cause shivering (Freedman 1989). Hot flashes can be triggered by increases in ambient temperature (Freedman 1989) and physical activity (Whitcomb et al. 2007) that increase the core body temperature.

Reports of hot flashes, during the two or four weeks prior to interview, range from 12% in Japan (Lock 1993) to 61% in Morocco (Obermeyer et al. 2007). Increased hot flash frequencies have been associated with ethnicity (Freeman et al. 2001), peri-menopausal status (Guthrie et al. 2005), lower levels of education, lower socioeconomic status, stress, and greater adiposity (Thurston et al. 2008). Dasgupta and Ray (2015) showed an increased likelihood of reporting hot flashes in the Bengali-speaking Hindu community with a lower age at menarche and an increased duration of breastfeeding.

Hot flash experience can be assessed through a checklist symptom report, open-ended questions, body diagrams (Voda 1997; Sievert et al. 2016), and ambulatory monitors (Freedman 1989). Ambulatory monitors measure sternal skin conductance by attaching an electrode to either side of the sternum on the upper chest. Electricity passes from one electrode to the other, and the speed of conductance rises as sweating increases during a hot flash. There are conventional criteria used to identify a hot flash, and it is relatively easy to differentiate between hot flashes and other causes of sweating (e.g., exercise) on the skin conductance graph (Sievert 2013).
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In laboratory settings, sternal skin conductance is the method of biometric measurement most highly concordant with hot flash reports. Ambulatory hot flash measures demonstrate less concordance between symptom report and biometric measurement (39% to 86%) compared to laboratory-based hot flash monitors (Carpenter et al. 2004; Fisher and Thurston 2016; Sievert 2013; Sievert et al. 2016).

It appears that biometric measures and subjective reports reveal different kinds of information about hot flashes. For example, while women of Japanese descent reported a lower hot flash frequency on questionnaires, Japanese- and European-American women in Hilo, Hawaii, did not differ in the frequency of biometrically measured hot flashes during the study period (Brown et al. 2011). We interpreted this to mean that comparisons of hot flash frequencies derived from questionnaires are confounded by differences in the lived experience and interpretation of sensations of warmth or sweating, and/or the willingness to report symptoms.

Quality of life

How is the quality of life of women during and after menopause? Does it vary with the experience of menopausal symptoms, socioeconomic condition, women’s attitude toward menopause, and menopausal stage? The quality of life during and after menopause is usually measured with the help of a self-administered questionnaire known as the Menopause Specific Quality of Life (MENQL) (Hilditch et al. 1996). The MENQL includes a list of 29 menopausal symptoms grouped into four domains (namely vasomotor [i.e., hot flashes and night sweats], psychosocial, physical, and sexual). This self-rated tool provides a comparable, etic understanding of the intensity of menopausal symptoms experienced by women at midlife. The greater the intensity of each symptom, the lower the MENQL. Since the experience of menopausal symptoms varies across cultural groups, at different stages of the menopausal transition, and with the duration of post-menopausal years, women’s quality of life also differs across these categories.

In the state of West Bengal, India, Som and Ray (2012) observed that quality of life deteriorated with an increase in the time since menopause, but not with the employment status of women. Perhaps, with an increase in post-menopausal years, symptoms related to the psychosocial (like dissatisfied with personal life and feeling anxious or nervous), physical (like flatulence or gas pains), and sexual (like change in sexual desire and vaginal dryness during intercourse) posed more health-related concerns compared to the initial stage of post-menopausal life. Further investigation revealed that symptoms related to the physical domain contributed more to the measurement of the overall quality of life compared to the psychosocial and sexual domains (Som et al. 2014).

Symptom experience and quality of life during midlife are both associated with sociodemographic and reproductive factors. For example, the lower the level of education, the higher the likelihood of sexual symptoms becoming bothersome (Roy et al. 2019; Lianjun et al. 2011; Fallahzadeh 2010). In India, lower levels of education among women contribute to earlier ages at marriage and childbirth (IIPS and ORC Macro 2007). Some South Asian studies identified these life history traits as factors behind higher parity (Adhikari 2010), loss of intimacy between spouses (Ford and Chamratrithirong 2012), and increased risk of fetal loss (Roy et al. 2019). Thereby, sexual life and physical and psychological health pertain to impaired quality of life. Thus, reproductive variables appear to be closely related to quality of life at menopause.

The meaning of menopause across cultures

Although menopause is a universal phenomenon for females, people across cultures do not all appreciate this event in a similar way. In some cultures, menopause is viewed in relation to social
roles and the status of women during this stage of life, the employment status of women, subjective experience of menopausal symptoms, and attitude towards childbirth, menstruation, and aging (Maoz et al. 1970; Robinson 1996; Lock et al. 1988; Melby et al. 2005; Obermeyer and Sievert 2007). For example, in India, women consider menstruation to be unwanted once the desired family size is met. Thus, menopause marks the freedom of women from childbirth and also from religious restrictions imposed during menstruation (Aaron et al. 2002; Ray 2010). The role of a woman during midlife is more of a decision-maker with an elevated status in the family, unlike their preceding years of life (Rakshit and Ray 2009). A trend of early marriage and childbirth among Indian women leads to a switchover of roles in the family during midlife, and some take on the role of grandmother at this stage. Perhaps these changes could explain why Indian women show a positive attitude toward menopause (Dasgupta and Ray 2013).

It is true that some of the menopausal women, especially the urban-living educated group of women and those who experience serious peri- or post-menopausal health issues, seek medical consultation. Others do not bother. In India, we found many women were unable to free-list their experience of menopausal symptoms when given a chance. But when menopausal symptoms were spelled out before them using a checklist, women recognized and responded in order to describe their symptom experience (Flint 1974; Dasgupta et al. 2016).

Do women identify menopause as an important phase in their reproductive life? We find cross-cultural variation in responses. For example, within the Bengali linguistic group of the Indian community, there is no specific term used for menopause. Some tribal communities (such as the Lodhas) refer to menopause as pholpora (shedding of the flower) (unpublished data, Roy 2013) in contrast to pholfota (blossoming of the flower). Some may consider this to be a part of aging. In many cases, women do not even share their menopausal state with their husbands, considering it to be insignificant to report unless a serious health issue emerges during midlife (Ray 2010). However, this understanding is not universal. For example, a study from eastern India shows that menopausal women are likely to suffer in high frequencies from psychological and psychosocial problems because of their worry related to losing their sexual life and their husbands’ attention during the midlife period (Dasgupta and Ray 2009).

Some may argue that menstruation still remains a proscribed issue of discussion in many South Asian countries as well as elsewhere. Perhaps this could be one of the reasons why menopause, too, remains “a silent passage” from the reproductive to the non-reproductive phase of life (Sheehy 1992). This type of cultural understanding increases the challenge of studying the menopausal transition as a potential health issue at midlife across all populations.

**Conclusions**

Menopause is a topic well suited for the holistic and comparative discipline of anthropology. Menopause, the last menstrual period, is a highly comparable event that provides an opportunity to examine how early life conditions (e.g., nutrition and infectious disease during childhood) and later life behaviors (e.g., smoking) impact health and chronic disease. Earlier ages at menopause are associated with an increased risk of cardiovascular disease, osteoporosis, and all-cause mortality (Muka et al. 2016; Svejme et al. 2012). Symptom experience at midlife is also highly comparable across populations, keeping in mind that self-report is filtered by what individuals sense, label, and feel comfortable talking about (Brown et al. 2009). The question of why and how menopause evolved requires cross-species as well as cross-population investigation, and challenges anthropologists to think across deep time. Menopause can also be investigated from theoretical approaches such as phenomenology (Sievert et al. 2019) and embodiment (Stephens 2001; Ussher 2008), as well as the biocultural perspective.
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Future directions for research include further studies of the relationship between early life events, nutrition, culture-specific stress, and age at menopause. The association between climate and symptom experience should be explored further, for example, with ambulatory hot flash and temperature/humidity monitors. Biomarkers, as well as self-reporting, would help us understand the relationship between stress and symptom experience. Longitudinal research across the menopausal transition among women in low- and middle-income countries (similar to SWAN in the US) and among Indigenous groups would allow for interesting comparisons across indigenous, rural, and urban communities in broadly different contexts. Finally, a wider focus on the shifting socioeconomic context of women’s lives at midlife would help us understand how the meaning of menopause varies across cultures.

Note

1 In accord with the conventions of menopause research, the word “symptom” refers to discomforts ranging from hot flashes to difficulty sleeping. The use of “symptom” is not meant to medicalize the menopausal transition.

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