

Women's perspectives of early menopause: development of a word cloud

L. Yeganeh, J. A. Boyle, M. Gibson-Helm, H. Teede & A. J. Vincent

To cite this article: L. Yeganeh, J. A. Boyle, M. Gibson-Helm, H. Teede & A. J. Vincent (2020): Women's perspectives of early menopause: development of a word cloud, *Climacteric*, DOI: [10.1080/13697137.2020.1730318](https://doi.org/10.1080/13697137.2020.1730318)

To link to this article: <https://doi.org/10.1080/13697137.2020.1730318>



Published online: 03 Mar 2020.



Submit your article to this journal [↗](#)



Article views: 37



View related articles [↗](#)



View Crossmark data [↗](#)

SHORT REPORT



Women's perspectives of early menopause: development of a word cloud

L. Yeganeh^a , J. A. Boyle^{a,b,c} , M. Gibson-Helm^a , H. Teede^{a,d,e,f}  and A. J. Vincent^{a,b,d} 

^aMonash Centre for Health Research and Implementation, School of Public Health and Preventive Medicine, Monash University, Melbourne, VIC, Australia; ^bMenopause Unit, Monash Health, Monash University, Melbourne, VIC, Australia; ^cDepartment of Obstetrics and Gynaecology, Monash Health, Monash University, Melbourne, VIC, Australia; ^dDepartment of Endocrinology, Monash Health, Monash University, Melbourne, VIC, Australia; ^eDiabetes and Vascular Medicine Unit, Monash Health, Monash University, Melbourne, VIC, Australia; ^fMonash Partners Academic Health Sciences Centre, Monash University, Melbourne, VIC, Australia

ABSTRACT

Objective: Early menopause (EM), menopause aged <45 years, occurs spontaneously or secondary to medical treatments and is associated with multiple health impacts. A word cloud is an image where the word size reflects the frequency of use. We aimed to assess the perspectives of women with EM using a word cloud.

Methods: Women diagnosed with EM, recruited from clinics/community, completed a survey including the open-ended question 'What words do you associate with EM?'. Demographics and medical history were collected. Data analysis included descriptive statistics, identification of word themes/stems/synonyms, word frequency, and chi-square test. A word cloud was constructed from words used by two or more women using 'Wordle' (www.wordle.net).

Results: Responses were obtained from 190/263 participants. The mean age was 54 ± 11 years, with EM diagnosed at age 38 ± 5 years. The cause of EM was unknown (30% of women), bilateral oophorectomy (27%), cancer therapy (25%), or autoimmune/genetic/metabolic (17%). The commonest words reported were hot flushes (36.8% of women), mood swings (20.5%), and infertility (16.8%), which varied with age and cause of EM. Few women reported neutral/positive words.

Conclusion: Most words that women associate with EM have negative connotations and refer to symptoms. A word cloud is a novel way to illustrate women's perspectives.

ARTICLE HISTORY

Received 25 November 2019
Revised 2 February 2020
Accepted 7 February 2020
Published online 3 March 2020

KEYWORDS

Attitude; early menopause; premature menopause; premature ovarian insufficiency; word cloud

Introduction

Early menopause (EM) (menopause before age 45 years)¹ affects over 10% of women² and can occur spontaneously or secondary to iatrogenic interventions, especially after cancer treatment¹. EM is associated with significant health impacts including menopausal symptoms, sexual dysfunction, and increased risk of cardiovascular disease, osteoporosis, and cognitive impairment³⁻⁵. Vasomotor (hot flushes, night sweats) and urogenital symptoms are common symptoms of EM and have significant negative impacts on both health-related and psychological quality of life^{6,7}. Furthermore, an unexpected diagnosis of EM may cause psychological distress among young women and affect overall well-being^{8,9}.

EM is generally perceived as a negative experience leading to social isolation^{10,11}. Evidence indicates that attitudes toward EM are often negative¹¹; however, this may be influenced by sociodemographic or cultural backgrounds. Indeed, the perception, expectations, and views of women regarding menopause vary across different societies^{12,13}. Cross-cultural differences of menopause experience reported in the literature underline the importance of research in this area.

Women's menopause experience also varies by cause of EM. Women with induced menopause following cancer treatment experience more severe symptoms, which may affect

their attitude⁶. In a similar way, negative attitudes toward menopause may also affect the severity and frequency of menopause symptoms^{14,15}. Moreover, women with negative attitudes may not adjust and cope effectively with menopause-related changes¹⁶.

A word cloud is a graphic representation of words, concepts, or phrases that gives greater prominence to those that appear more frequently. Word clouds are a form of data visualization used in business and education, and, more recently, in medical settings¹⁷. Word clouds may facilitate patient engagement and communication. In this preliminary study, we aimed to develop a word cloud illustrating the perspectives of women with EM.

Methods

This study was approved by the Monash Health Human Research Ethics Committee (Project number: 07062A). The study was conducted from May to December 2017. Women reporting a diagnosis of EM and aged >20 years were recruited from a range of sources, including hospital clinics, support groups, menopause society websites, and cancer websites, and invited to participate in an online or paper

survey. Women without a formal diagnosis of EM, not residing in Australia, or without English literacy were excluded.

This is a sub-study with the methods and results otherwise published¹⁸. Written consent was obtained for the paper survey or implied consent with completion of the online survey. The final question of the survey asked ‘What words do you associate with EM?’ and allowed a free text response. Data regarding participant demographics and medical history were also collected. Identification of word themes/stems or synonyms was performed to delineate single words or two-word phrases and then word frequency was determined for each identified word/phrase. A word cloud was constructed from all words reported by two or more women using the freely available online program ‘Wordle’ (www.wordle.net).

Statistical analysis

Statistical analysis included descriptive statistics, identification of word themes/stems/synonyms, and word frequency. The chi-square test was used to compare word frequency: across different causes of EM, including cancer treatment, bilateral oophorectomy, and spontaneous (incorporating autoimmune, genetic, metabolic, and unknown); and between women with EM (menopause age 40–44 years)

Table 1. Participants’ characteristics.

Characteristic	N	Mean \pm standard deviation or frequency (%)
Age (years)	189	54.3 \pm 10.7
Born in Australia	188	79.5
Age at EM diagnosis (years)	190	38.5 \pm 5.3
Education	190	
Year 12 or less		26.3
Associate/undergraduate diploma		27.9
Postgraduate diploma/bachelor		45.8
Cause of EM	189	
Cancer treatment		24.7
Bilateral oophorectomy		27.4
Autoimmune/genetic/metabolic		16.8
Unknown		30.5
Time since EM diagnosis	190	
Less than 5 years		20.5
5 years or more		79.5
Lives in metropolitan area	189	53.7

EM, early menopause.

versus premature menopause (menopause before age 40 years). Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) version 23.0 was used for data analysis.

Results

From 263 survey replies, 190 women responded to the word association question. The demographic and medical history characteristics of final question respondents are presented in **Table 1**. There was no difference in demographic parameters between the entire cohort and those women who provided a response to the question (data not shown).

The mean age of respondents was 54.3 \pm 10.7 years and the majority (79.5%) were diagnosed with EM at least 5 years ago. Most participants were Australian born (79.5%), lived in metropolitan areas (53.7%), and had a post-high school qualification (73.7%).

The words associated with EM and their corresponding frequency are shown in the word cloud (**Figure 1**). The commonest words reported were: hot flushes (36.8%), mood swings (20.5%), infertility (16.8%), sweats (12.1%), tiredness (11.1%), weight gain (11.1%), no periods (10.5%), osteoporosis (9.5%), aging (8.9%), insomnia (8.9%), depression (8.4%), isolation (8.4%), and sadness (7.9%). Some women reported frustration (6.8%), low libido (6.3%), anxiety (5.8%), distress (5.8%), vaginal symptoms (5.3%), unfeminine (3.7%), shock (3.1%), pain (2.6%), and loss (2.6%). Cardiovascular disease risk, cancer, disappointment, facial hair, hell, inconvenient, surgery, risk, and shriveling were reported by 1.1%. Few women reported neutral/positive words, for example, freedom (1.1%), celebration (3.7%), relief (4.2%), and life change (5.8%).

Word frequency for hot flushes (but not infertility or mood swings) varied with the cause of EM (cancer treatment 57.4% vs. bilateral oophorectomy 30.8% vs. spontaneous 28.9%; $p = 0.003$). Hot flushes (48.5% vs. 22.5%; $p < 0.001$) and mood swings (28.7% vs. 11.2%; $p = 0.003$) were reported more frequently by women with EM. However, infertility was reported more frequently by women with premature menopause (22.5% vs. 9.9%; $p = 0.018$).

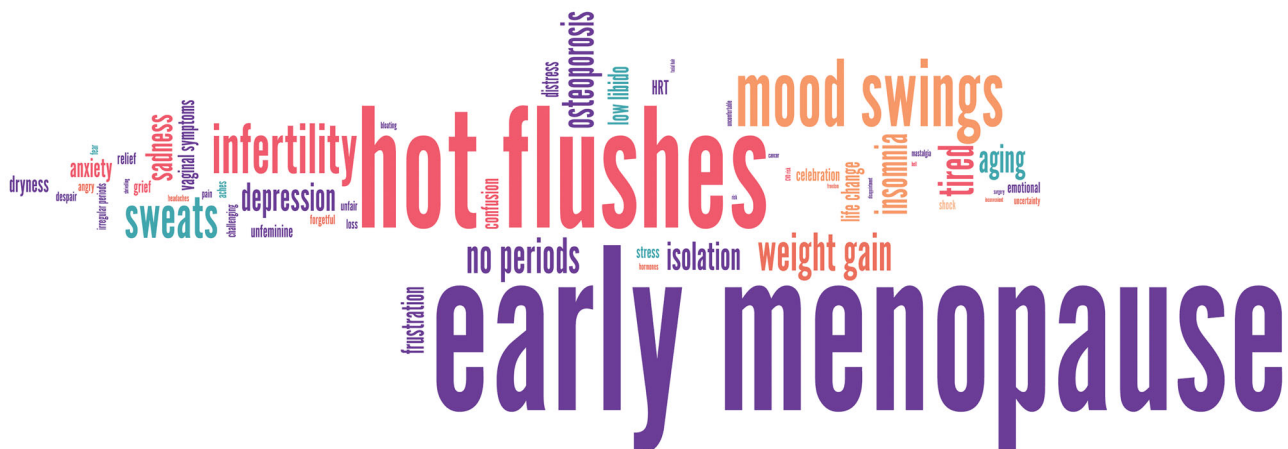


Figure 1. Early menopause word cloud. The font size of the word or phrase reflects the frequency as reported by at least two women with early menopause.

Discussion

To our knowledge, this is the first study to illustrate the perspectives of women toward EM using an EM word cloud. The commonest words expressed related to symptoms, with few women reporting neutral or positive words.

Women generally describe menopause as an age-related condition⁹ that is expected to occur as a natural phase of development¹⁹. There are conflicting views among women regarding the meanings of menopause. Various sociocultural groups perceive menopause in different ways, either as a natural phenomenon with positive social changes and values or as a negative experience with a significant impact on well-being and quality of life^{19,20}. A systematic review of the qualitative experiences of menopause¹⁶ concluded that the 'positive or negative ways in which each woman approaches the changes during menopause are influenced by their personal, family and sociocultural background'.

Boughton defined menopause as a more embodied rather than a biological experience, influenced by a woman's knowledge of menopause, the time of occurrence, and how it is viewed by their culture²¹. Morrison *et al.* found an association between positive attitudes toward menopause and higher education, older age, and the place where women grew up²⁰. A systematic review on 13 longitudinal and cross-sectional studies demonstrated an association between negative perspectives toward menopause and severity of symptoms¹⁴.

However, younger women experience menopause differently, as it is not part of the normal process of aging and menopause occurring in mid-aged women²¹. In a previous phenomenological study focusing on the menopause experiences in young women, EM was perceived as a shock causing multiple troubles in women's life²¹. Similarly, in an online communication with 98 women with premature menopause, a wide range of feelings were expressed by women upon diagnosis, from relief of not having a more serious problem for those with spontaneous menopause to negative emotional reactions such as loss, sadness, guilt, and hopelessness²².

EM symptomatology may cause confusion and uncertainties contributing to delayed diagnosis⁹. EM experience involves distinctive health-related challenges with impacts on the individual's role within the family and society²³. Our results are consistent with previous studies showing that women associated EM with symptoms that signify aging, including tiredness, hot flushes, weight gain, osteoporosis, sexual dysfunction, infertility, and loss of periods^{11,24}. However, they find themselves different from older women and also their peers, which often leads to interaction problems and feelings of loneliness, isolation, and distress^{22,24}. Similarly, a number of women in our study expressed words indicating feelings of isolation, sadness, and distress.

Aligned with our findings, a recent qualitative study¹¹ reported EM as a negative experience and a perceived threat to femininity and fertility in young reproductive-aged women with cancer. Indeed, EM was defined as a loss and lack of motherhood experience¹¹, as women can lose sexual

function and fertility at the time that they have just started focusing on parenthood²⁵. Consistent with this, infertility was more frequently reported by women with menopause before age 40 years. A small percentage of women in this study expressed feelings of loss and of being unfeminine. This may also be due to a decline in sexual desire and potential reproductive loss as well as a lack of perceived support from their partner, family, friends, or health-care providers.

Hot flushes and night sweats are the hallmarks of menopause that are reported as a troublesome experience by most women²⁶. Consistent with this, hot flushes were most commonly associated with EM in the current study and the frequency varied with the cause of EM and age at menopause, as also observed previously^{6,7,27}. Osteoporosis is the most feared long-term consequence reported by women with premature menopause^{24,27}, and this is reflected in the current study. Despite the increased risk of cardiovascular disease with EM, fewer than 1% of women reported this as an association indicating misperception of risk consistent with previous research²⁷⁻²⁹. Although the commonest words associated with EM were negative, a small number of our participants expressed generally positive words describing EM as relief, freedom, life change, and celebration.

As lack of knowledge regarding menopause may negatively impact women's attitudes and perspectives, improving women's awareness and knowledge may assist women to have a more positive attitude about themselves and their EM experiences³⁰.

The key strengths of this study relate to the novelty of developing an EM word cloud and inclusion of a large sample size of women with EM to assess women's perspectives toward EM. However, this brief study has several potential limitations. Most of the participants were Australian born and we were unable to assess women's perspectives based on ethnicity and sociocultural diversities. Most women had post-school qualifications, iatrogenic menopause, and were diagnosed with EM at least 5 years ago, which may affect the women's understanding and views regarding EM. There is also potential response bias in relation to self-reported diagnosis of EM. The limitations of a word cloud relate to the potential to take words out of context if large amounts of text are used³¹. However, we minimized this problem by asking women to record 'words' they associated with EM and not phrases.

Conclusion

We have found that most words that women associate with EM have negative connotations and refer to menopause symptoms. The novel EM word cloud illustrating women's perspectives of EM may facilitate awareness and promote engagement. Further research is required to explore women's and clinician's responses to the word cloud and the perspectives of women with different sociodemographic, cultural, or linguistic backgrounds.

Acknowledgements

Participants in this research were recruited from the Breast Cancer Network Australia (BCNA) Review and Survey Group, a national, online group of Australian women living with breast cancer who are interested in receiving invitations to participate in research. The authors acknowledge the contribution of the women involved in the Review and Survey Group who participated in this project. This research was supported by Register 4 through its members' participation in research. Part of this study was presented as a poster at the World Congress on Menopause, Vancouver, Canada 2018.

Potential conflict of interest A. V. is a member of the editorial board of *Climacteric*.

Source of funding This study was funded by the National Health and Medical Research Council [Partnership Grant Number: APP 1116008].

ORCID

L. Yeganeh  <http://orcid.org/0000-0003-3413-152X>
 J. A. Boyle  <http://orcid.org/0000-0002-3616-1637>
 M. Gibson-Helm  <http://orcid.org/0000-0002-5043-8786>
 H. Teede  <http://orcid.org/0000-0001-7609-577X>
 A. J. Vincent  <http://orcid.org/0000-0002-3760-7266>

References

- Shuster LT, Rhodes DJ, Gostout BS, Grossardt BR, Rocca WA. Premature menopause or early menopause: long-term health consequences. *Maturitas* 2010;65:161–6
- Webber L, Davies M, Anderson R, et al. ESHRE guideline: management of women with premature ovarian insufficiency. *Hum Reprod* 2016;31:926–37
- Bove R, Secor E, Chibnik LB, et al. Age at surgical menopause influences cognitive decline and Alzheimer pathology in older women. *Neurology* 2014;82:222–9
- Yoshida T, Takahashi K, Yamatani H, Takata K, Kurachi H. Impact of surgical menopause on lipid and bone metabolism. *Climacteric* 2011;14:445–52
- de Almeida DM, Benetti-Pinto CL, Makuch MY. Sexual function of women with premature ovarian failure. *Menopause* 2011;18:262–6
- Deeks AA, Gibson-Helm M, Teede H, Vincent A. Premature menopause: a comprehensive understanding of psychosocial aspects. *Climacteric* 2011;14:565–72
- Howard-Anderson J, Ganz PA, Bower JE, Stanton AL. Quality of life, fertility concerns, and behavioral health outcomes in younger breast cancer survivors: a systematic review. *J Natl Cancer Inst* 2012;104:386–405
- Pinhey TK, Pinhey DL. Life event timing and the emotional consequences of surgical menopause for Asian-Pacific women in Guam. *Women Health* 2002;36:43–54
- Boughton M, Halliday L. A challenge to the menopause stereotype: Young Australian women's reflections of 'being diagnosed' as menopausal. *Health Social Care Commun* 2008;16:565–72
- Lennon MC. The psychological consequences of menopause: the importance of timing of a life stage event. *J Health Soc Behav* 1982;23:353–66
- Parton C, Ussher JM, Perz J. Experiencing menopause in the context of cancer: Women's constructions of gendered subjectivities. *Psychol Health* 2017;32:1109–26
- Kowalcek I, Rotte D, Banz C, Diedrich K. Women's attitude and perceptions towards menopause in different cultures. Cross-cultural and intra-cultural comparison of pre-menopausal and post-menopausal women in Germany and in Papua New Guinea. *Maturitas* 2005;51:227–35
- Cheng MH, Wang SJ, Wang PH, Fuh JL. Attitudes toward menopause among middle-aged women: a community survey in an island of Taiwan. *Maturitas* 2005;52:348–55
- Ayers B, Forshaw M, Hunter MS. The impact of attitudes towards the menopause on women's symptom experience: a systematic review. *Maturitas* 2010;65:28–36
- Freeman EW, Sherif K. Prevalence of hot flushes and night sweats around the world: a systematic review. *Climacteric* 2007;10:197–214
- Hoga L, Rodolpho J, Goncalves B, Quirino B. Women's experience of menopause: a systematic review of qualitative evidence. *JBI Database of Systematic Reviews and Implementation Reports* 2015;13:250–337
- Vanstone M, Toledo F, Clarke F, et al. Narrative medicine and death in the ICU: word clouds as a visual legacy. *BMJ Support Palliat Care* 2016 Nov 24. Epub ahead of print
- Yeganeh L, Khan NN, Boyle JA, Gibson-Helm M, Teede H, Vincent AJ. Development and evaluation of an early menopause question prompt list. *Menopause* 2020;27:102–9
- Li S, Ho SC, Sham A. Relationship between menopause status, attitude toward menopause, and quality of life in Chinese midlife women in Hong Kong. *Menopause* 2016;23:67–73
- Morrison LA, Sievert LL, Brown DE, Rahberg N, Reza A. Relationships between menstrual and menopausal attitudes and associated demographic and health characteristics: The Hilo Women's Health Study. *Women Health* 2010;50:397–413
- Boughton MA. Premature menopause: multiple disruptions between the woman's biological body experience and her lived body. *J Adv Nurs* 2002;37:423–30
- Halliday L, Boughton M. Premature menopause: exploring the experience through online communication. *Nursing Health Sci* 2009;11:17–22
- Kodaman PH. Early menopause: primary ovarian insufficiency and surgical menopause. *Semin Reprod Med* 2010;28:360–9
- Singer D, Mann E, Hunter MS, Pitkin J, Panay N. The silent grief: Psychosocial aspects of premature ovarian failure. *Climacteric* 2011;14:428–37
- Orshan SA, Furniss KK, Forst C, Santoro N. The lived experience of premature ovarian failure. *J Obstet Gynecol Neonatal Nurs* 2001;30:202–8
- Sullivan SD, Sarrel PM, Nelson LM. Hormone replacement therapy in young women with primary ovarian insufficiency and early menopause. *Fertil Steril* 2016;106:1588–99
- Gibson-Helm M, Teede H, Vincent A. Symptoms, health behavior and understanding of menopause therapy in women with premature menopause. *Climacteric* 2014;17:666–73
- Deeks A, Zoungas S, Teede H. Risk perception in women: a focus on menopause. *Menopause* 2008;15:304–9
- Ley SH, Li Y, Tobias DK, et al. Duration of reproductive life span, age at menarche, and age at menopause are associated with risk of cardiovascular disease in women. *J Am Heart Assoc* 2017;6:e006713
- Rotem M, Kushnir T, Levine R, Ehrenfeld M. A psycho-educational program for improving women's attitudes and coping with menopause symptoms. *J Obstet Gynecol Neonatal Nurs* 2005;34:233–40
- Atenstaedt R. Word cloud analysis of the BJGP: 5 years on. *Br J Gen Pract* 2017;67:231–2