









Full and empty nest syndromes in women in the climacteric period

Ana Carolina Gonçalves de Abreu¹ , Mayara Souza Alves² , Lea Tami Suzuki Zuchelo² ,
Sueli Vitorino dos Santos³ , Priscilla Rayanne e Silva Noll² , Edmund Chada Baracat² ,
José Maria Soares Júnior² , Isabel Cristina Esposito Sorpreso^{2*} 

INTRODUCTION

The empty nest syndrome (ENS) was cited as menopausal symptoms related to mood changes and characterized when the last or only child leaves the parental home, as well as in case of death of spouses/partners¹. Others describe the ENS as a presence of loneliness, aggravated by emotional and psychosocial symptoms, depressive mood, and emotional lability prevalent in the climacteric period¹⁻³.

The social changes and family configuration bring a new way of experiencing and dealing with the symptoms of menopause^{4,5}. The phenomenon known as “Full Nest Syndrome” (FNS) is a recent term in the literature characterized as a change in family coexistence, with the permanence of adult children in their parents’ house⁴. It denotes a change in the role of women in the family nucleus regarding socioeconomic attributions, educational, and reproductive autonomy.

Both syndromes can be identified in women’s health care in the climacteric period. Factors associated with the presence of ENS and FNS should have a differential investigation and analysis instead of being automatically attributed to menopause, as they have different definitions and approaches in health care. Besides, the authors highlighted the scarcity of studies on the theme and the impact of these two syndromes on mood symptoms during the climacteric period⁵⁻⁷.

Thus, analyzing the psychosocial factors of FNS and ENS reveals, through the scientific literature, the specificities of each syndrome, which can contribute to a better quality of care and different and effective intervention actions. The purpose of this review was to analyze, through a systematic review, factors related to FNS and ENS in the climacteric period.

METHODS

This is a systematic review based on PRISMA⁸ performed by the Climacteric Sector of the Gynecology Division of the Hospital das Clínicas at Medicine School of the São Paulo University (HC/FMUSP), registered in PROSPERO in February 2019 (ID number: CRD42019121218).

Research strategy

This review was based on a systematic research conducted on January 2020 using PubMed, Web of Science, Embase, and PsycINFO databases and followed the PICO (P=Population, I=Intervention, C=comparison, and O=outcome) strategy, in order to obtain the keywords at Medical Subject Headings (MeSH) and Embase subject headings (Emtree) – empty nest, full nest, menopause, climacteric, premenopause, and postmenopause (Appendix 1).

Inclusion criteria

Studies published in English were selected if they met the following criteria:

- (1) studies related to women in the climacteric period and
- (2) that approach FNS and ENS.

There was no restriction on sample size or publication date.

Exclusion criteria

The articles were excluded if:

- (1) they were not data-based (i.e., books, theoretical articles, or minor revisions),
- (2) had population not clearly identified in the climacteric period, and

¹Faculdade Santa Maria – Cajazeiras (PB), Brazil.

²Universidade de São Paulo, Faculdade de Medicina, Departamento de Obstetrícia e Ginecologia – São Paulo (SP), Brazil.

³Universidade Mogi das Cruzes – São Paulo (SP), Brazil.

*Corresponding author: icesorpreso@usp.br

Conflicts of interest: the authors declare there are no conflicts of interest. Funding: none.

Received on August 24, 2021. Accepted on August 27, 2021.

- (3) superficially addressed the FNS and ENS, describing only the prevalence of the syndromes, without characterizing the symptoms.

Search strategy

Three stages were used to select the articles. The first stage was to screen all titles; the second stage was to exclude articles using the abstract; and the third stage was to analyze the entire text, searching for eligible manuscripts. All stages were based on the selection criteria explained above.

To increase the reliability of the analysis and minimize possible biases, all the search and selection phases were independently reviewed by two researchers (ACGA and MSA) who, after reading all articles, entered a consensus to establish which articles met the inclusion criteria. In cases in which there was disagreement over the selection of studies among the investigators, a third reviewer (LTSZ) was consulted.

Assessment of study quality

Two reviewers independently assessed the risk of bias of each included study and discussed their assessments to achieve consensus. Score disagreements were resolved by consensus, and a final agreed-upon rating was assigned to each study.

Since both quantitative and qualitative studies were considered in this study, appropriate tools were used for each one.

For quantitative studies, the Newcastle-Ottawa Scale (NOS) adapted for cross-sectional studies was used to assess the quality of research^{9,10}. The NOS has a “star system” in which a study is judged on three dimensions, namely, selection (five stars), comparability (two stars), and outcomes (three stars), indicating the quality of the study. The range of stars in the NOS comprises 0–10 stars.

For qualitative studies, the consolidated criteria for reporting qualitative research (CORE-Q) was used to assess the quality of research¹¹. The CORE-Q is a 32-item checklist for interviews and focus groups by three domains, namely, “research and reflexivity team” (8 items), “of the study” (15 items), and “analysis and findings” (9 items). The nonavailability information needed to answer CORE-Q questions was filled in as no information in the article.

RESULTS

The search of the databases resulted in 102 papers. Duplicate articles were excluded using the Microsoft Excel “Duplicates” tool and manually, totaling 39 articles. After screening for title and abstract, 29 articles were excluded as they were not related

to the theme and 7 articles were not available for free. The 26 remaining articles were read in their entirety, and 18 articles did not meet the inclusion criteria; thus, 8 articles were selected to compose this systematic review (Figure 1).

In Table 1, eight eligible articles are presented and classified according to the score obtained in the NOS and COREQ application. The articles that made a qualitative analysis of the data were classified as moderate according to the COREQ evaluation, obtaining a score between 16 and 19 out of a total of 32 points¹²⁻¹⁵. The articles that made a quantitative analysis of the data were classified with 7–9 out of 10 stars¹⁶⁻¹⁹.

Also, in Table 1, the aim of this study, sample, and main results related to ENS and/or FNS are presented. Eight articles were published between 1984 and 2013 and were related to the ENS and women in the climacteric period. Only one article covered both FNS and ENS¹⁷. The studies were conducted in Mexico, Japan, Malaysia, USA, Uruguay, and Australia, and the number of participants included varied from 40 to 386, totaling 1525 women in the climacteric period¹²⁻¹⁹.

The study design of the articles was cross-sectional, with only one article being a longitudinal study with a follow-up of 8 years^{12-16,18,19}.

In Table 2, we presented the events and situations that trigger the ENS and/or FNS and changes related to the syndromes. Two articles did not mention any changes related to ENS and/or FNS^{18,19}.

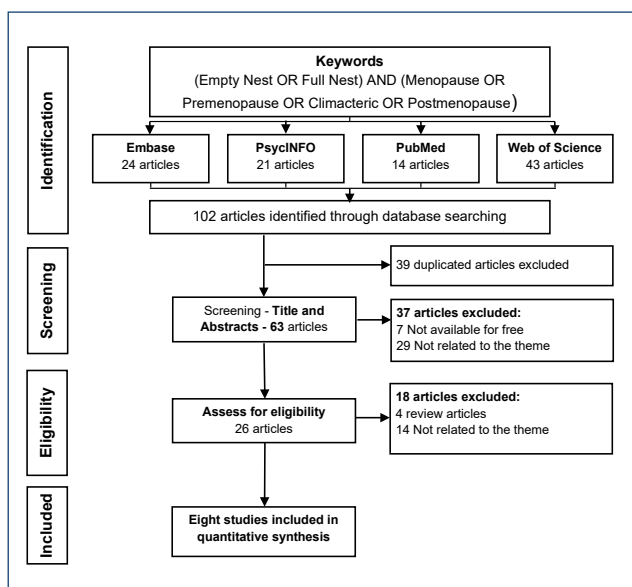


Figure 1. Literature review citation selection flowchart (Adapted from Moher et al.⁸).

Table 1. Summary of the articles selected by systematic review related to Empty and Full Nest Syndrome.

Author, year Local	Aim of study	Population	Main results related to empty/full nest syndrome	Quality
Black et al. ¹² ; 1984. Maryland, USA.	To study the psychological well-being of graduated women in their middle years.	232 women, ages between 46–61 years, who had graduated from a large midwestern university between 1943–1952. 39% had reached the empty nest stage	Overall, the ENS didn't seem a universal problem to these women, since most of them reported being happy in mid-life (especially those with high schooling level and those who were working). Many women with ENS felt free to explore other activities. However, the syndrome was triggering for those who already had other issues.	COREQ: 17/32 Moderate
Huerta et al. ¹⁴ ; 1995. Mexico.	To study the association of symptoms with attitudes toward sexuality, life-style, family functioning, and follicle-stimulating hormone (FSH) levels in perimenopausal women.	222 women with mean age of 47.7 years. The majority were overweight (mean BMI of 29.9), from urban origin (76.6%) and had a low schooling level for themselves (3.2 years), partner and parents. As in concern with their occupation, 76.6% were housewives, 11.3% were workers and 5.9% had a commerce. 76.1% were married or part of a free union, 12.2% were widows, 9.5% were unmarried and 2.2% were divorced. The mean number of children was 8; the mean age of the oldest son was 25.8 years and the mean age of the youngest son was 12.1 years.	The ENS was a constant complaint among perimenopausal women.	NOS: 8/10
Defey et al. ¹³ ; 1996. Montevideo, Uruguay.	To define women's perception of themselves and their health care needs in this period of life.	78 women between the ages of 45–60 years.	The ENS was more described by women who had kept a high emotional dependency with their children. Among the positive feelings that emerged after the children's departure, it was observed a greater sense of independency; on the other hand, negative feelings included mostly loneliness.	COREQ: 16/32 Moderate
Dare et al. ¹⁴ ; 2011. Perth, Australia.	To report how contemporary women experience physiological and psychosocial midlife transitions.	40 Australian women, ages between 45–55. 12 women had dependent children living at home (30%), one had dependent children not living at home (2.5%) and 6 had young adult children still living at home (15%). 17 women were empty nesters (42.5%) and four never had children. With regard with the participants occupation: three were unemployed, three were students, four were self-employed, 15 were professional and 12 were admin/paraprofessional.	Most women in the study didn't described the ENS as an issue. Many of them coped well with their children leaving. They viewed their children's departure as an opportunity to dedicate themselves to other activities, of their own interest, beyond motherhood. The relationship between mother and child in the past may be related to the way the women face ENS. Those who felt positive changes with the ENS reported that they were often repressed by society, as this was not the "correct" reaction to this event. This reinforces the relationship between the ENS and social/cultural factors.	COREQ: 19/32 Moderate

Continue...

Table 1. Continuation.

Author, year Local	Aim of study	Population	Main results related to empty/full nest syndrome	Quality
Dennerstein et al. ¹⁷ ; 2002. Melbourne, Australia.	To document changes in household composition in this contemporary sample of mid-aged Australian-born women over an 8-year period of follow-up, and to determine effects on women's quality of life of children leaving and returning home.	381 Australian born women aged between 45 and 55 years, followed for eight years. 35% of them had more than 12 years of education, 82% were living with a partner and 35% were in full-time employment. These women were not taking hormone therapy or oral contraceptive pills, and they had experienced menses in the previous three months. During the study, the percentage of households with children decreased from 83–45%.	The children's departure, which created an empty nest environment, didn't affect negatively the quality of these women's lives. There wasn't increase on the depression rates, or other negative symptoms. Also, there wasn't any adverse effects on the frequency of sexual activities or on the relationship with their partners. There was an improvement of happiness and a reduction in the number of daily hassles with the child leaving home. Women who had a more positive vision about this transition phase were the most benefited.	NOS: 9/10
Takamatsu et al. ¹⁸ ; 2004. Tokyo, Japan.	To extract psychosocial factors from Japanese cases of menopausal disorders in which the patients exhibited the impact of psychiatric elements and required counseling.	97 Japanese women, mean age 61.3±4.5 years, who had received counseling for the treatment of undefined complaints between 1993–1998. Among these patients, 36 consisted of women in a premenopausal status, 61 in postmenopausal status, 36 were undergoing natural menopause, and 25 patients had undergone bilateral ovariectomy. 91 subjects were married, five were unmarried and one was divorced. 32 women had jobs and 62 women had at least one child. 11.3% reported ENS.	The ENS was a relatively rare topic among the studied population; postmenopausal women and patients who had undergone bilateral ovariectomy were the ones who most experienced the syndrome.	NOS: 7/10
García-Campos et al. ¹⁹ ; 2009. Leon, México.	To study the possible interaction of care of grandchildren with women's symptoms at postmenopause.	386 postmenopausal women, aged 55–75 years. They had previous regular menses and their last menstrual cycle occurred over 12 years before. The mean age was 63 years; the mean age at menopause was 47.7 years; seven of them reported consume of alcohol and 35 smoked daily. They had a mean of five children and 13 grandchildren. Most of them had low schooling and were obese or overweight.	Factors such as having children/grandchildren, active participation in the care of grandchildren and low schooling are positively related with the ENS.	NOS: 7/10
Wong et al. ¹⁵ ; 2012. Klang Valley, Malaysia.	To address the following issues: (A) women's understanding about midlife crisis, experiences, helpseeking, coping strategies, and needs, and (B) the correlates of midlife crisis and sociocultural influences.	89 women over 45 years of age, from three main ethnic groups (Malays, Chinese, and Indians). Most participants were married (89.9%), were housewives (61.8%), had secondary school or higher education (64.0%), and had an average monthly household family income less than RM1 2,000 (50%). 64 participants were postmenopausal, 20 were premenopausal and five were perimenopausal.	The ENS was a theme frequently repeated as something related with midlife crises. Some women reported having a social network as essential to minimize the syndrome's symptoms. Since women with negative thoughts about aging experienced more symptoms, health professionals most encourage strategies that focus on the acceptance of this process, in a positive way.	COREQ: 18/32 Moderate

Table 2. Trigger and changes related to Empty and Full Nest Syndrome.

Author, year	Trigger related to the empty/full nest syndrome	Changes related to:	
		Empty Nest Syndrome (ENS)	Full Nest Syndrome (FNS)
Black et al. ¹² ; 1984.	More than the fact the child had left home, what triggered the symptoms were the motives who led them to leaving. For example, one woman thought that her daughter had got married too soon.	These women could, now, dedicate more time and energy to themselves. Usually, when the event was traumatic, it was more related with how the children left than with the actual departure. In women with other issues, the ENS works as a trigger to initiate depressive symptoms.	Not mentioned.
Huerta et al. ¹⁶ ; 1995 ^a .	Children leaving home.	Familiar communication decreases the chances of developing the ENS. Negative changes included an unwillingness to live and suicide thoughts. Diminished affectivity and diminished communication with a partner are factors that can contribute to the ENS.	Not mentioned.
Defey et al. ¹³ ; 1996.	Women who had perceived their children as appendix of themselves were the ones who had more symptoms of the ENS with the children's departure.	Feeling of abandonment and, in some women, intensification of marital conflicts that had remained unnoticed. On the other hand, positive changes included an urgency for independency, an opportunity to be alone with the partner and a better communication with their own children (since there weren't daily conflicts anymore).	Not mentioned.
Dare et al. ¹⁴ ; 2011.	The syndrome had greater impact on those women who weren't prepared for their children's departure. Besides, women more emotionally dependent with their children had more negative changes when they left.	Positive changes included greater sense of freedom and acknowledgment of this period as an exciting and potential one. Furthermore, several women expressed pride about the fact that their children were growing independently. Only two women demonstrated negative changes related with the ENS. However, they also had negative feelings towards other subjects, and this was intensified with the children's departure.	Not mentioned.
Dennerstein et al. ¹⁷ ; 2002.	Women who were already concerned about their children's departure, even before the beginning of the event, had less positive mood changes and more negative mood changes than those who had not been worried. Furthermore, children's return home might have triggered negative symptoms in those women who had not been concerned with their departure.	In the first year after the children had left home, there was decline in the negative mood scores, increase in the positive mood scores, improvement on the well-being and reduction on daily hassles.	With the children returning home, there was a tendency of decline in the frequency of sexual activities. Besides, women who had experienced a positive change on the mood with the departure of children were more likely to experience the opposite with their return.
Takamatsu et al. ¹⁸ ; 2004	The ENS was more described by the postmenopausal patients. It was also more related with ovariectomized women in comparison with those undergoing natural menopause.	Not mentioned.	Not mentioned.
García-Campos et al. ¹⁹ ; 2009.	The empty nest score was lower in women without children or grandchildren. High schooling was also related with lower scores on the ENS. Finally, participation in the care of grandchildren was more associated with the ENS.	Not mentioned.	Not mentioned.
Wong et al. ¹⁵ ; 2012.	Participants who had negative thoughts toward aging aspects, such as a possible occurrence of the ENS, were more likely to experience the symptoms.	Half of the women described the children's departure as a good change, since now they had more free time to pursue their own interests. The other half felt very depressive, cried daily, felt lonely and extremely sad.	Not mentioned.

DISCUSSION

This systematic review makes it possible to orientate and distinguish factors related to FNS and ENS in the climacteric period.

Among the triggering factors of the ENS, the authors highlighted the dependent relationship between mothers and children and the anticipated concern about their children's departure^{13-15,17}.

Wong et al. conducted a survey with three ethnic groups (i.e., Malaysian, Indian, and Chinese) and found that half of the women reported feeling sadness, emptiness, depression, and extreme loneliness¹⁵. The ENS was a theme frequently repeated as something related to midlife crises.

We can observe these same reports in the three other articles related to ENS, in which women whose children left home presented some emotional lability, as well as family conflicts, financial problems, physical changes, and decrease in social life^{12,13,16}. These characteristics are associated with the climacteric period, and these factors aggravate the feeling of loneliness and abandonment.

Huerta et al. demonstrated that diminished affectivity and communication with a partner are factors that can contribute to the ENS¹⁶. Negative changes included an unwillingness to live and suicidal thoughts. Good familiar communication decreased the chances of developing the ENS.

Garcia-Campos analyzed the relationship between taking care of grandchildren and the ENS¹⁹. They discovered that the higher frequency of meeting with, and helping in the care of, grandchildren correlates with scores of losses of sexual interest and was more associated with ENS.

The study by Polissen et al. corroborates this finding as the authors pointed out that the family configuration in which there are children leaving home, grandchildren being born, and/or retirement facilitates the appearance of affective deprivation, feeling of uselessness, and fear of aging alone, the factors associated with ENS and their repercussions⁶. They estimated that one-third of women in the climacteric period will have at least one depressive episode and reported that hormonal and social changes corroborate concurrently in this period²⁰.

The most common mood symptoms in this review in ENS were melancholy and sadness. Mitchell and Lovegreen described the presence of these feelings in the family configuration in which worried parents, with a greater sense of guilt, consider immature and nonautonomous children aggravating or causing the ENS⁷. In contrast, parents who feel that their children are self-sufficient have greater ease and tranquility in experiencing this social change. The authors also affirmed that women in the climacteric period with active social life present

a lower appearance of feelings of sadness and melancholy after the children leave home.

Takamatsu et al. analyzed the psychosocial landscape of women in coping with menopausal symptoms, and what psychological issues were triggered¹⁸. Their difficult situations included problems with their husbands, children leaving home, anxiety, problems at work, difficulties with their mothers-in-law, and ENS in the postmenopausal period. Premenopausal anxiety was related to job reorganization or life difficulties, problems with coworkers, difficult relationship with husbands, and divorce were the issues more frequently present.

Wong et al., Takamatsu, et al., Defey et al., and Garcia-Campos et al. investigated the ENS and found that depressive symptoms and lack of perspective of life improved with therapeutic or social groups^{13,15,18,19}.

The therapeutic and social groups emphasize the resumption of some activities, which were abandoned due to the birth of the children, as a practice to be encouraged in the follow-up of women in the climacteric period^{15,18,21-23}. In addition, Chen et al. reinforced that outdoor activities are the key point to reduce depressive symptoms, and those who are athletes, who participate in groups of conversation, or who have intense social interaction feel less need to be with their children daily and have less feeling of solitude²⁴.

Dennerstein et al. conducted an 8-year follow-up study with 381 Australian women aged between 45 and 55 years to determine the effects on women's quality of life after children leave and return home¹⁷. They encountered that the children's departure, which created an empty nest environment, did not affect negatively the quality of these women's lives. Moreover, there was not an increase in the depression rates or other negative symptoms and no adverse effects on the frequency of sexual activities or on the relationship with their partners.

In the studies developed by Defey et al., Dare, and Wong et al., positive changes were also reported with children leaving home¹³⁻¹⁵. They reported that the women experienced an opportunity to be alone with the partner and a better communication with their own children (since there were no daily conflicts anymore); there was also a decline in the negative mood scores, increase in the positive mood scores, improvement on the well-being, and more free time to pursue their own interests.

The study conducted by Dennerstein et al. was the only study that addressed the FNS and found that when children return home, there was a tendency of decline in the frequency of sexual activities¹⁷. Besides, women who had

experienced a positive change in the mood with the departure of children were more likely to experience the opposite with their return.

The FNS, contextualized by Rambo et al., has factors related to the permanence of the young adult in parents' house, "kangaroo generation", the increase of schooling time, difficult insertion in the labor market, and economic dependence⁴. Silveira and Wagner and Vieira and Rava reported about the children of the "kangaroo generation" and their parents and found that the main factor associated with the emergence of this context in FNS is the lack of professional perspective of the child or the lack of job opportunity and maintenance of financial independence^{25,26}.

In addition, the children also seek salaries commensurate with their qualifications and specializations, not content with the first job that offers them independence. All these contexts corroborate with the appearance of the FNS.

Unfortunately, in our systematic review, few authors reported details on the socioeconomic level of the children or dependents of their participants or cases. Thus, we emphasized the importance of encouraging studies with quality criteria about the topic FNS.

Weber et al. explained that indulgent parents are responsive but not demanding, i.e., they have respect for their children and at the same time do not stimulate the autonomous development of the child because they are always performing tasks for them²⁷. As a result, children grow up with a sense of dependence on their parents and mistakenly believe that they will not be able to develop on their own. It is the role of the parents to stimulate this autonomy at an early age, always demonstrating that they will be around to help in difficult times.

Garcia-Campos, Defey et al., Takamatsu et al., and Wong et al. mentioned triggering factors related to biological, familial, social, and, more rarely, financial aspects^{13,15,18,19}. The economic factor is present regarding the appearance of the two syndromes. In FNS, women are in a phase of life that should be directed toward their biopsychosocial changes, as well as rest, and they are faced with their children without financial autonomy. In contrast, in the ENS, the woman shows fragility after the independence of her loved ones.

Factors that trigger changes are present in the lives of these women. This aspect was evidenced in the results presented in several studies, highlighting the positive factors related to women's autonomy, time available to themselves, and family life^{12-15,17,19}.

The negative symptoms (i.e., sadness, anxiety, and fear) were mainly related to somatic changes, highlighting body changes, issues related to attractiveness, and work performance as main

triggers¹²⁻¹⁹. In addition, Garcia-Campos et al. reported that the responsibility to take care of grandchildren, divorce, and lack of social interaction were associated with loss of sexual interest and couple conflicts¹⁹. All these triggering factors should be considered by health professionals who assist women during the climacteric period and late postmenopausal period since these aspects interfere in several dimensions and aspects in the life and health of women.

A limiting factor for this study was the lack of specific health descriptors for these subjects. In addition, the literature presents a shortage of clinical research focused on the new context of the family nucleus related to FNS.

The use of the CORE-Q checklist and NOS in this study brings the importance of systematizing work processes in qualitative and quantitative research that should follow methodological quality criteria, in order to allow evaluation and analysis to elucidate nonbiophysical and fundamental aspects in clinical practice.

The novelty of this review is that the emergence of FNS and ENS during the climacteric period presents the socioeconomic context as the main trigger, associated with the biological and cultural specificities of each woman.

The emotional conflict present in both syndromes is a factor that points to the financial dependence of the children and the permanence of the children in the parents' home, or even the internal conflict that occurs in the woman, often related to her financial dependence.

We propose a discussion about how both syndromes should have a multi-professional approach. In relation to FNS, the proposal of multi-professional and intersectoral intervention as social support should include the family, stimulating the autonomy and independence of the children.

The negative changes associated with ENS and FNS were depressive mood, depression, lack of time for self-care, and lack of sexual interest and attractiveness. In contrast, the main positive aspects were the feeling of autonomy and familiar coexistence. All these data are noticed during the care of women in the climacteric period and in the postmenopausal period of life, being fundamentally structured within the FNS and ENS.

Therefore, regarding the ENS, the focus of health care intervention should be on the women, stimulating their autonomy and reducing possible psychological dependencies that make them want their children always close by.

CONCLUSIONS

The factors related to the ENS demonstrated in the review were the woman's condition of having children and financial

dependence, whereas the low socioeconomic level stood out in the FNS. The trigger of symptoms related to the ENS and FNS was mainly related to body changes caused by hypoestrogenism and social aspects. The negative changes associated with ENS and FNS were depressed mood, depression, lack of time for self-care, and lack of sexual interest and attractiveness. In contrast, the main positive aspects were the feeling of autonomy and familiar coexistence.

ACKNOWLEDGMENT

The authors thank Cristiane Dolores Barboza de Oliveira and Ana Carolina Fonseca for their contributions to this project.

REFERENCES

1. Taechakraichana N, Jaisamrarn U, Panyakhamlerd K, Chaikittisilpa S, Limpaphayom KK. Climacteric: concept, consequence and care. *J Med Assoc Thai*. 2002;8544(Suppl 1):S1-15. PMID: 12188398
2. Barber CE. Transition to the empty nest. In: Bahr SJ, Peterson ET (editors). *Aging and the family*. Lanham: Lexington Books; 1989. p.15-32.
3. Liang Y, Wu W. Exploratory analysis of health-related quality of life among the empty-nest elderly in rural China: an empirical study in three economically developed cities in eastern China. *Health Qual Life Outcomes*. 2014;12:59. <https://doi.org/10.1186/1477-7525-12-59>
4. Rambo M, Hentges CE, Löblein FG, Pando LB, Klockner MIB, Bertoldo LTM. Uma nova configuração familiar. *Perspectivas em Psicologia*. 2018;22(1):168-79. <https://doi.org/10.14393/PPv22n1a2018-12>
5. Copeland JR, Beekman AT, Braam AW, Dewey ME, Delespaul P, Fuhrer R, et al. Depression among older people in Europe: the EURODEP studies. *World Psychiatry*. 2004;3(1):45-9. PMID: 16633454
6. Polisseni AF, Araújo DA, Polisseni F, Mourão Junior CA, Polisseni J, Fernandes ES, et al. Depressão e ansiedade em mulheres climatéricas: fatores associados. *Rev Bras Ginecol Obstet*. 2009;31(1):28-34. <https://doi.org/10.1590/s0100-72032009000100006>
7. Mitchell BA, Lovegreen LD. (2009). The empty nest syndrome in midlife families: a multimethod exploration of parental gender differences and cultural dynamics. *J Fam Issues*. 30(12):1651-70. <https://doi.org/10.1177/0192513X09339020>
8. Moher D, Liberati A, Tetzlaff J, Altman DG, PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ*. 2009;339:b2535. <https://doi.org/10.1136/bmj.b2535>
9. Hermont AP, Oliveira PAD, Martins CC, Paiva SM, Pordeus IA, Auad SM. Quality assessment criteria used for cross-sectional studies through a modified version of Newcastle-Ottawa Scale for observational studies. *PLoS ONE Dataset*. 2014;9:e111123. <https://doi.org/10.1371/journal.pone.0111123.t002>
10. Welss GA, Shea B, O'Connell D, Peterson J, Welch V, Losos M, et al. The Newcastle-Ottawa Scale (NOS) for assessing the quality of nonrandomised studies in meta-analyses. Ottawa: Institute OHR; 2009.

AUTHORS' CONTRIBUTIONS

ACGA: Conceptualization, Data curation, Investigation, Project administration, Visualization, Writing – review & editing. **MSA:** Conceptualization, Data curation, Investigation, Project administration, Visualization, Writing – review & editing. **LTSZ:** Methodology, Validation, Visualization, Writing – review & editing. **SVS:** Methodology, Validation, Visualization, Writing – review & editing. **PRSN:** Data curation, Formal analysis, Methodology, Supervision, Writing – review & editing. **ECB:** Conceptualization, Project administration, Supervision, and Visualization. **JMSJ:** Formal Analysis, Project administration, Writing – review & editing. **ICES:** Conceptualization, Data curation, Methodology, Project administration, Supervision, Validation, Visualization

11. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19(6):349-57. <https://doi.org/10.1093/intqhc/mzm042>
12. Black SM, Hill CE. The psychological well-being of women in their middle years. *Psychol Women Q*. 1984;8(3): 282-92. <https://doi.org/10.1111/j.1471-6402.1984.tb00637.x>
13. Defey D, Storch E, Cardozo S, Díaz O, Fernández G. The menopause: women's psychology and healthcare. *Soc Sci Med*. 1996;42(10):1447-56. [https://doi.org/10.1016/0277-9536\(95\)00344-4](https://doi.org/10.1016/0277-9536(95)00344-4)
14. Dare JS. Transitions in midlife women's lives: contemporary experiences. *Health Care Women Int*. 2011;32(2):111-33. <https://doi.org/10.1080/07399332.2010.500753>
15. Wong LP, Awang H, Jani R. Midlife crisis perceptions, experiences, help-seeking, and needs among multi-ethnic Malaysian women. *Women Health*. 2012;52(8):804-19. <https://doi.org/10.1080/03630242.2012.729557>
16. Huerta R, Mena A, Malacara JM, León JD. Symptoms at perimenopausal period: its association with attitudes toward sexuality, life-style, family function, and FSH levels. *Psychoneuroendocrinology*. 1995;20(2):135-48. [https://doi.org/10.1016/0306-4530\(94\)00046-d](https://doi.org/10.1016/0306-4530(94)00046-d)
17. Dennerstein L, Dudley E, Guthrie J. Empty nest or revolving door? A prospective study of women's quality of life in midlife during the phase of children leaving and re-entering the home. *Psychol Med*. 2002;32(3):545-50. <https://doi.org/10.1017/s0033291701004810>
18. Takamatsu K, Makita K, Nozawa S. Study of psychosocial factors in Japanese patients suffering from menopausal disorders. *J Obstet Gynaecol Res*. 2004;30(4):309-15. <https://doi.org/10.1111/j.1447-0756.2004.00199.x>
19. García-Campos R, Aguilar-Zavala H, Malacara JM. Symptoms at menopause and care of grandchildren. *Climacteric*. 2010;13(5):492-8. <https://doi.org/10.3109/13697130903411107>
20. Stotland NL. Menopause: social expectations, women's realities. *Arch Womens Ment Health*. 2002;5(1):5-8. <https://doi.org/10.1007/s007370200016>
21. Helson R, Wink P. Personality change in women from the early 40s to the early 50s. *Psychol Aging*. 1992;7(1):46-55. <https://doi.org/10.1037//0882-7974.7.1.46>
22. Sorpreso ICE, Vieira LHL, Calió CL, Haidar MA, Baracat EC, Soares Junior JM. Health education intervention in early and late

- postmenopausal Brazilian women. *Climacteric*. 2012;15(6):573-80. <https://doi.org/10.3109/13697137.2011.635915>
23. Sorpreso IC, Soares Júnior JM, Fonseca AM, Baracat EC. Female aging. *Rev Assoc Med Bras (1992)*. 2015;61(6):553-6. <https://doi.org/10.1590/1806-9282.61.06.553>
 24. Chen D, Yang X, Aagard SD. The empty nest syndrome: ways to enhance quality of life. *Educ Gerontol*. 2012;38(8):520-9. <https://doi.org/10.1080/03601277.2011.595285>
 25. Silveira PG, Wagner A. Ninho cheio: a permanência do adulto jovem em sua família de origem. *Estud Psicol (Campinas)*. 2006;23(4):441-53. <https://doi.org/10.1590/S0103-166X2006000400012>
 26. Vieira ACS, Rava PGS. Ninho cheio: perspectivas de pais e filhos. *Psicol Teor prat*. 2012;14(1):84-96.
 27. Weber LND, Prado PM, Viezzer AP, Viezzer AP, Brandenburg OJ. Identificação de estilos parentais: o ponto de vista dos pais e dos filhos. *Psicol Reflex Crit*. 2004;17(3):323-31. <https://doi.org/10.1590/S0102-79722004000300005>

Appendix 1. Research strategy.

Base	Query	Number of articles
Pubmed	("Menopause"[Mesh] OR "Menopause, Premature"[Mesh] OR "Postmenopause"[Mesh] OR "Premenopause"[Mesh] OR "Climacteric"[Mesh]) AND (Empty nest OR Full nest)	14
Embase	('menopause and climacterium/exp OR 'menopause/exp OR 'climacterium/exp OR 'postmenopause/exp OR 'premenopause/exp) AND ('empty nest' OR 'full nest')	24
Web of Science	(TÓPICO: (*menopaus*) OR TÓPICO: (climacteri*)) AND (TÓPICO: (Full nest) OR TÓPICO: (Empty nest))	43
PsycInfo	((IndexTermsFilt: ("Menopause")) OR (Any Field: (climacteric)) OR (Any Field: (*menopaus*))) AND ((Any Field: (Full Nest)) OR (Any Field: (Empty nest)))	21

