REVIEW ARTICLE

NursingOpen   WILEY

A systematic review of social determinants of healthy lifestyle among Iranian women

Sakineh Ghasemi Yngyknd[1] (iD) | **Mohammad Asghari Jafarabadi**[2,3] | **Solmaz Ghanbari-Homayi**[4] | **Delara Laghousi**[5] | **Mojgan Mirghafourvand**[6] (iD)

[1]Unit for Population and Family Health, Tabriz University of Medical Sciences, Bonab, Iran

[2]Department of Statistics and Epidemiology, Tabriz University of Medical Sciences, Tabriz, Iran

[3]Road Traffic Injury Research Center, Tabriz University of Medical Sciences, Tabriz, Iran

[4]Department of Midwifery, Faculty of Nursing and Midwifery, Tabriz University of Medical Sciences, Tabriz, Iran

[5]Social Determinants of Health Research Centre, Health Management and Safety Promotion Research Institute, Tabriz University of Medical Sciences, Tabriz, Iran

[6]Social Determinants of Health Research Centre, Department of Midwifery, Tabriz University of Medical Sciences, Tabriz, Iran

Correspondence
Mojgan Mirghafourvand, Social Determinants of Health Research Centre, Department of Midwifery, Tabriz University of Medical Sciences, Tabriz, Iran.
Email: mirghafourvand@gmail.com

Abstract

Aim: This review aimed to determine the social determinants of healthy lifestyle among Iranian women.

Design: A systematic review and meta-analysis.

Method: A comprehensive electronic search was carried out with no time limit until 6 September 2019. Newcastle–Ottawa Quality Assessment Scale (adapted for evaluating cross-sectional survey/studies) was used to evaluate the quality of the articles. The metap code was used in SATATA16 to combine the *p*-values using Edgington's additive method.

Results: Twelve studies entered the systematic review. The meta-analysis results showed that social determinants of healthy lifestyle among Iranian women included income, job, education, spouse's education and occupation, housing and social support.

Conclusions: Given the relationship between modifiable factors and women's lifestyles, it seems that it is necessary to set policies to improve the status of factors related to women's lifestyle including reducing poverty, promoting education and providing social support to eliminate.

KEYWORDS
health behaviour, Iran, lifestyle, social determinants of health, women

1 | INTRODUCTION

The World Health Organization (WHO) defines social determinants of health as the environment where people are born, grow, work and age (Marmot et al., 2008). This environment is shaped by the distribution of money, power and resources at the national, regional and global levels that are by themselves influenced by political choices. Social determinants account for a bulk of the inequities (unjust and avoidable differences in health status seen within countries) (WHO, 2020). Key social determinants of health include socio-economic status, education, income, early childhood, social isolation (caused by discrimination, unemployment and defamation), social capital (intragroup and intergroup relationships), occupation, housing and the environment surrounding the place of residence (Welfare, 2016). Social determinants of health can identify individuals by adjustable behavioural and medical risk factors (Raphael, 2011). Social inequalities in health are associated with social differences in lifestyle and behaviour (WHO, 2010).

Healthy lifestyles range from appropriate behaviours, activities and performances such as adequate levels of physical activity, healthy sleep patterns, for example adequate rest, the ability to adapt to stress, the ability to enjoy family and community support, working in a favourite job, recreational activities and devoting sufficient time for spiritual and mental development, health and well-being (Stanhope & Lancaster, 2016). Individuals themselves choose their own lifestyles, but their choices are influenced by their social circumstances. Thus, peoples' behaviours are a result of their choices within the existing opportunities (Cockerham et al., 1997). In fact, structural determinants of inequality in health affect health through a set of mediating factors which include material conditions such as the quality of neighbourhood and housing, consumption potential (e.g. affording the purchase of healthy food, warm clothing) and workplace conditions, psychosocial conditions (e.g. psychological stressors, living conditions and stressful relationships, social support and coping styles), as well as behavioural and biological factors (e.g. nutrition, physical activity, tobacco and alcohol use), which are heterogeneously distributed across different social groups. Biological factors include genetic factors, and healthcare system itself is recognized as a social determinant (WHO, 2010).

Women experience various issues (puberty, fertility, menopause, etc.) during their life, and in addition to biological and fertility issues, lifestyle issues and socio-economic status also affect their health (WHO, 2009). Women with low socio-economic status become menopausal sooner than the ones with higher socio-economic status. In addition to genetic factors, cumulative effects in life stages such as childhood nutrition, stress, nulliparity, obesity, sedentary lifestyle and smoking are associated with premature menopause (Dratva et al., 2009). Also, poor educational level and economic status are related to different health dimensions in women of reproductive age (Baheiraei et al., 2015).

In line with the sustainable development, progresses in maternal and child health depend on several key determinants and a wide range of interventions are required in both the health care and social determinants of health (Bishai et al., 2016). Removing economic and social inequalities needs an understanding of the variables, mechanisms and cause–effect relationships (Bayati et al., 2012). Many of the health differences are directly related to social inequalities and their impacts on lifestyle (White et al., 2009). Given the importance of a healthy lifestyle in promoting women's health (WHO, 2009) and that we did not find studies that collected evidence about social factors related to Iranian women's lifestyle, we conducted this systematic review. The question of this review was as follows: What are the social determinants of a healthy lifestyle among Iranian women?

2 | METHODS

2.1 | Literature selection

The present review study was performed based on the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines. A comprehensive electronic search of English (PubMed, Cochrane Library, Embase, ProQuest, Scopus, Web of science) and Persian (SID, Magiran, IranMedex) databases and the Google search engine with equivalent keywords (Women [Mesh], Life Style [Mesh], Reproductive [Mesh], Social Determinants of Health) and a combination of words with AND and OR functions were carried out with no time limit until 6 September 2019. All published observational studies on lifestyle of Iranian women of reproductive age were reviewed. Two authors independently reviewed the titles and abstracts of the extracted articles to exclude irrelevant ones. If the abstract of an article did not have sufficient information for decision-making, the full text of the article was checked. The disagreements between the two authors about the eligibility of the articles were resolved through discussion, and a third person (MM) was consulted if they disagreed. The search was updated on 22 October 2019, but no more studies were found to be eligible.

Cohort, case–control, nested case–control or cross-sectional studies concerning the lifestyles of women of reproductive age in Iran were included in the study, and all qualitative studies, interventional studies and editorial letters were excluded. Both authors independently collected the following information from each study: study design, the number of participants, research setting, inclusion and exclusion criteria and data collection tools.

2.2 | Assessment of methodological quality

Newcastle–Ottawa Quality Assessment Scale (adapted for evaluating cross-sectional survey/studies) was used to evaluate the quality of the articles, and the articles were categorized into three categories of poor, moderate and good in terms of methods (cut-off scores: high methodological quality 12 stars [achieved score > 75%], moderate methodological quality 9–11 stars [50% < achieved score < 75%], low methodological quality 0–8 stars [achieved score ≤ 50%]). Both researchers independently scored each part of the checklist (Aim [one item], maximum 2 stars, subject selection [four items] and outcome [two items] maximum 2 stars can be given in each item for selection and outcome items [maximum 8 stars for selection and 4 stars in outcome], comparability [one item] maximum one star can be given in each item for Comparability [Maximum 2 stars]). Different scores were discussed in one item until an agreement was reached. If a study achieved > 75% of the score, it was categorized as high quality methodologically (Hillen et al., 2017)].

2.3 | Data collection

Each study was tabulated using a validated data collection form. This form enabled that data were extracted systematically, including an assessment of eligibility and quality. It was also used to

justify why some studies were excluded. The extracted data for each study were as follows: study design and duration (years), participant (inclusion (I)/exclusion (E), number (N)), sampling method, scale, outcome definition, measure of determinant, summary of results and adjustments. Data were extracted by two authors (SGY AND SGH) separately.

The process of selecting studies is presented in Figure 1. Our search resulted in 6,109 studies from related databases, and one study was retrieved from the references of a study. Once the titles and abstracts were examined, 3,945 studies were excluded. Forty articles were selected for a full-text review, and 28 were excluded because they did not meet the eligibility criteria or did not analyse the relationship between health-promoting behaviours and social determinants. Finally, 12 studies entered the systematic review.

2.4 | Statistical analysis

The metap code was used in SATATA16 to combine the *p*-values using Edgington's additive method. Edgington's additive method based on the sum of probabilities (Edgington, 1972) method is suggested to combine a small number of studies, producing similar results as Fisher's method.

3 | RESULTS

3.1 | Description of studies

The general features of the existing articles in this systematic review are summarized in Table 1. No study was found to have directly examined the relationship between social determinants of health and women's lifestyle in Iran. The included studies comprised 11 cross-sectional studies and one case–control study from 2012 to 2018. In all studies, health-promoting behaviours and their related factors were analysed. In most studies (Abedi et al., 2015; Ahmadi et al., 2015; Ahmadipour & Kiarash, 2016; Amirabadizadeh et al., 2016; Anbari et al., 2015; Bakouei et al., 2017; Enjezab et al., 2012; Mirghafourvand et al., 2014; Tol et al., 2018), Walker's health-promoting lifestyle Profile (HPLP 2) (Walker et al., 1987) was used to investigate health-promoting behaviours. Two studies used a researcher-made questionnaire (Mahdipour et al., 2013; Rafiee et al., 2014), and one study applied the Lifestyle Questionnaire (LSQ) designed by La'li et al. in Iran (Zare & Khaluee, 2016). Studies that subjectively examined the determinants by self-report through one variable such as social class were excluded (Ahmadi et al., 2015).

A significant relationship has been reported between income and healthy lifestyle in three studies (Mirghafourvand et al., 2014; Rafiee et al., 2014; Tol et al., 2018). There was a significant relationship
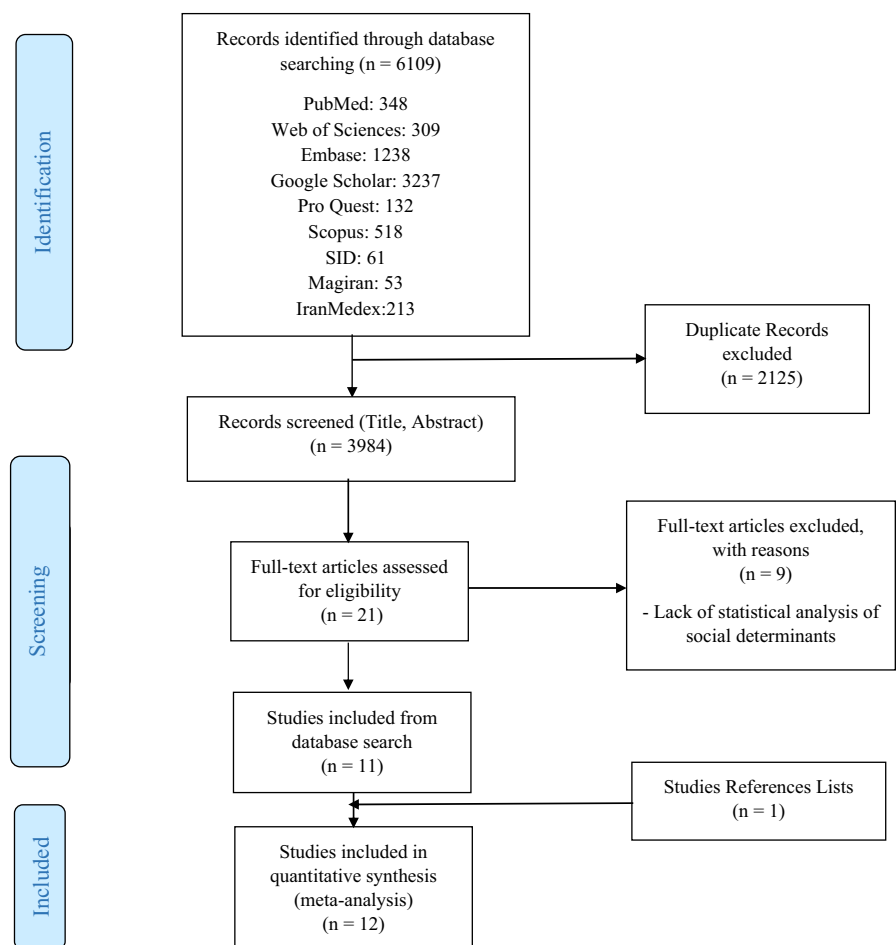

FIGURE 1 Study flow diagram

TABLE 1 Overview of study characteristics and quality assessment score

First Authors, Year	Study design	Sample	Scale
Abedi et al. (2015)	Cross-Sectional	(N = 1,200) I: 15 to –45-year-old married women referred to health centres, minimum education in reading and writing, no drug addiction. E: Menopause, pregnancy, infertility, sleep disorders, lactating women <2 months after delivery, a history of diseases such as high blood pressure, diabetes and mental health problems	Socio-demographic characteristics, Walker's health-promoting lifestyle Profile (HPLP2)
Ahmadi et al. (2015)	Cross-Sectional	(N = 392) Reproductive age women (15–49 years old) The eligibility criteria have not been reported	Socio-demographic characteristics, Walker's Health-Promoting lifestyle Profile (HPLP), Health knowledge
Ahmadipour and Kiarash (2016)	Cross-Sectional (Brief Report)	(N = 400) 15- to 64-year-old women	Walker's Health-Promoting lifestyle Profile (HPLP) Persian version of the 34-item form, demographic questionnaire
Amirabadizadeh et al. (2016)	Cross-Sectional	(N = 290) Women Age of 30 – 59 years, residence in Birjand, Iran, No communication problems, written consent for participation and no chronic and refractory disease such as cancer, cardiovascular diseases, diabetes mellitus, renal and mental disorders, hypertension and pulmonary diseases	Walker's Health-Promoting lifestyle Profile (HPLP), (SF–36) QOL questionnaire, demographic questionnaire
Anbari et al. (2015)	Cross-Sectional	(N–500) Women aged from 15 to 49 years; referring to the health centres	Walker's Health-Promoting lifestyle Profile (HPLP), demographic questionnaire
Bakouei et al. (2017)	Cross-Sectional	(N = 330) Reproductive age women (between 15 and 49 years) without any known diseases such as severe mental retardation and mental disorders	Walker's Health-Promoting lifestyle Profile (HPLP), demographic questionnaire
Enjezab et al. (2012)	Cross-Sectional	N = 483, Middle-aged women 40–60 years, no mental disorder and speaking problem	Walker's Health-Promoting lifestyle Profile (HPLP), demographic questionnaire

Outcome definition	Measure of determinant	Summary of results	Adjustments	Quality score	Quality rating
Health-promoting behaviours, Woman Education, Woman Occupation, Husband Education, Husband Occupation	Logistic regression	The number of children, job situation and educational level of woman, also job situation of the spouses were affected health-promoting lifestyles ($p < .05$)	Yes	10	62.5
Health-promoting behaviours, Woman Education, Husband Education	Multiple regression was used for predictive factors for health-promoting behaviours; study in health matters, Health knowledge, women's education, husbands' education and socio-economic class	The age, education and health education, affected health knowledge ($\beta = 0.168$, 0.239 and 0.150 for age, education and health education, respectively). Health knowledge and health education affected HPLS with Beta values of 0.168 and 0.330, respectively	NO	11	68.75
Health-promoting behaviours, Income, Woman Education, Woman Occupation	Independent t test and one-way ANOVA were used for comparing the health-promoting lifestyle scores between two groups and between more than two groups, respectively. Linear regression was used for the analysis of variables in predicting health-promoting lifestyle scores	Employment status was a significant predictor of health-promoting lifestyle scores ($p = .04$)	No	10	62.5
Health-promoting behaviours, Income, Woman Education, Woman Occupation, Husband Education, Husband Occupation, Housing, Quality of Life	One-way ANOVA and independent t test	The study found the significant correlation of women's HPL with their husbands' job	No	9	56.25
Health-promoting behaviours, Income, Woman Education, Woman Occupation	Multivariate linear Regression	Education level ($p = .004$, $\beta = 0.15$), marital status ($p = .021$, $\beta = -0.1$) had positive effects on health-promoting behaviours.	No	7	43.75
Health-promoting behaviours, Income, Woman Education, Woman Occupation, Ethnicity, Crowding Index	One-way ANOVA	Regarding ANOVA with a Tukey post hoc test, there was a significant difference in health-promoting behaviours with respect to women's educational level just in illiterate/primary level in comparison with other levels (intermediate, high school and university)	Yes	9	56.25
Health-promoting behaviours, Woman Education, Woman Occupation	Pearson, Spearman correlation test, one-way ANOVA and covariance analysis	Positive significant correlation of HPBs with education level ($p < .016$, $p < .001$) and women's job (HPBs in retired women were significantly higher than others even after adjusting for age)	Yes	10	62.5

TABLE 1 Continued

First Authors, Year	Study design	Sample	Scale
Rafiee et al. (2014)	Cross-Sectional	(N = 384), 15- to 45-year-old married women referring to health centres	Researcher designed two-section question naire includes two sections: individual profile and lifestyle (a total of 73 item)
Tol et al. (2018)	Cross-Sectional	(N = 461), 15- to 49-year-old married women referring to health centres, No diagnosed severe mental disorders require taking medication	The second version (49 item) Walker's Health-Promoting lifestyle Profile (HPLP), demographic questionnaire, Oxford Happiness Inventory (OHI)
Zare and Khaluee (2016)	Case-Control	(N = 240) 120 Employed women working at training centres and 120 sisters of women that was not employed	La'li et al. LSQ = life Style Questionnaire
Mahdipour et al. (2013)	Cross-Sectional	(N = 138) Middle-aged women in the age of 40–50 years, exclusion criteria: having specific diet or women who had problem to do exercise or had mental disorder were excluded	Researcher-made questionnaire
Mirghafourvand et al. (2014)	Cross-Sectional	(N = 1,359) Women aged 15–49 years, Eligibility criteria: Iranian, Able to speak, Residing in, Neither pregnant nor in the puerperium period, No diagnosed severe mental disorders that make her unable to respond to the questions	Health-Promoting Lifestyle Profile-II (HPLP-II), Personal Resource Questionnaire 85-Part 2 (PRQ85-Part 2), perceived social support

Outcome definition	Measure of determinant	Summary of results	Adjustments	Quality score	Quality rating
Healthy lifestyle includes: nutrition, physical activity and exercise, sleep, leisure time, fertility behaviour, personal hygiene and smoking Income, Woman Education, Woman Occupation, Ethnicity, Housing	Qui-square test	Significant association between lifestyle and ethnic ($p < .001$), marital status ($p < .004$), occupation ($p < .002$) and income ($p < .001$)	NO	7	43.75
Health-promoting behaviours, Income, Woman Education, Woman Occupation	Multivariate variance analysis (MANOVA)	High economic level ($p < .0001$), Education level ($p < .0001$), Employment status ($p = .004$) had relationship with health-promoting behaviours' score	Yes	9	56.25
Health-oriented lifestyle includes physical and psychological health, social health, spiritual health, environmental health, disease prevention, drugs and alcohol avoidance, exercise and health, weight control and nutrition, Woman Education, Woman Occupation, Housing	Multivariate regression, t test and analysis of variance	There was a significant relation between healthy lifestyle of employed and non-employed women. Multiple regression analyses shows that respectively education and age explain 10% of health and lifestyle changes	Yes	11	68.75
40 questions in four aspects of lifestyle (nutrition, physical activity, psychological health, interpersonal relationships), Income, Woman Education	Descriptive statistics, Spearman correlation test	significant relationship between educational level of the samples and lifestyle	No	7	43.75
Health-promoting behaviours, Income, Woman Education, Woman Occupation, Husband Education, Husband Occupation, social support, Ethnicity, Crowding Index, Health Insurance, Housing, perceived social support	Pearson correlation test was used to assess the association between health-promoting behaviours and perceived social support, one-way ANOVA for relationship between socio-demographic characteristics and health-promoting behaviours. Backward multivariable linear regression model was used to determine the predictive factors for health-promoting behaviours	Social support, education and crowding index predicted 29.8% of the variance of health-promoting behaviours	Yes	11	68.75

between job and healthy lifestyle in four studies (Abedi et al., 2015; Enjezab et al., 2012; Rafiee et al., 2014; Tol et al., 2018). In all included studies except of one study (Ahmadipour & Kiarash, 2016), a significant relationship has been reported between education and healthy lifestyle. For determinant of spouse's education, there was a significant relationship in three studies (Abedi et al., 2015; Ahmadi et al., 2015; Mirghafourvand et al., 2014). There was a significant relationship between spouse's job and healthy lifestyle in two studies (Abedi et al., 2015; Amirabadizadeh et al., 2016). For determinant of housing, there was a significant relationship in two studies (Rafiee et al., 2014; Zare & Khaluee, 2016). The association between health knowledge and social support with healthy lifestyle has been assessed only in one study, and a significant relationship has been reported (Ahmadi et al., 2015; Mirghafourvand et al., 2014).

3.2 | Meta-analysis results

The meta-analysis results showed that effective predictors of healthy lifestyles among healthy Iranian women included the income variable ($p = .00066$) by entering 8 studies, the job variable ($p = .0027242$) by entering 10 studies, the education level variable ($p < .001$) by entering 12 studies, the spouse's occupation variable ($p = .0000953$) by entering 3 studies, the spouse's education level variable ($p = .00137223$) by entering 4 studies, the housing variable ($p = .00006484$) by entering 3 studies and the social support variable ($p = .02$) and health knowledge ($p = .000$) by entering 1 studies. Also, the meta-analysis results showed that the ethnicity variable ($p = .10527145$) by entering 3 studies and the crowding index variable ($p = .324818$) by entering 2 studies were not effective predictors of healthy lifestyles among healthy Iranian women (Figure 2; Table 2).

4 | DISCUSSION

Our findings showed that social determinants of healthy lifestyle among healthy Iranian women included income, job, education, spouse's education and occupation, housing and social support. Health behaviours are considered a mediator for social class and health outcomes (Petrovic et al., 2018).

Income was one of the social determinants of lifestyle in the present study. High costs and financial pressures prevent women from addressing health-promoting lifestyle (Baheiraei et al., 2013). Material resources can also affect health-related behaviours by providing appropriate environmental conditions, including walking facilities, recreational areas and access to healthy food. Material factors may also serve as a psychosocial stress source, which may influence health-related behaviours (WHO, 2010).

Education was another determinant of a healthy lifestyle in Iranian women. Education promotes peoples' awareness and skills and can facilitate healthy behaviours. In addition, higher education leads to finding better jobs and higher income and can lead
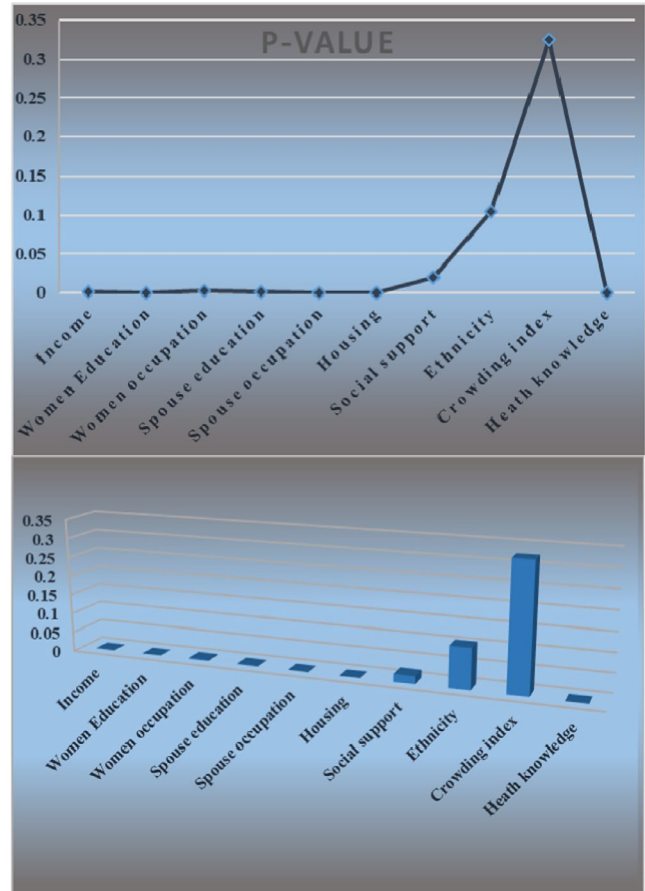

FIGURE 2 Social determinants of lifestyle in Iranian women (It was drawn by second authors of this study (MAG) based on the results of included studies)

TABLE 2 Number of studies included in the analysis of social determinants components and their results

Variable	Number of study	p
Income	8	.00066
Women Education	12	.000
Women occupation	10	.0027242
Spouse education	4	.00137223
Spouse occupation	3	.0000953
Housing	3	.00006484
Social support	1	.02
Crowding index	2	.324818
Heath knowledge	1	.000
Ethnicity	3	.10527145

to health-promoting lifestyle in a variety of ways, such as job-related benefits, environmental opportunities and stress reduction (Panagiotakos et al., 2016; Telfair & Shelton, 2012; Virtanen et al., 2008). Education also influences health through psycho-biological processes such as belief control, social status and affairs related to one's thinking and social relations (Egerter et al., 2009). Behavioural factors account for about half of the difference in

mortality rates in cardiovascular diseases observed between the lowest and highest levels of education (Soskolne & Manor, 2010).

Another social component related to a healthy lifestyle in the present study was spouse's level of education and occupation. Spouse's occupation and education are among the components of social class (Vallot, 2019) which affect health through mediating effect of behaviours along with other structural determinants (WHO, 2010). Meanwhile, family income and one's education were found to be key determinants of a healthy lifestyle in Canada (Qi et al., 2006). According to the Iranian Statistics Center data, only 11.8% of Iranian women over 10 years of age are economically active (Portal, 2016-2017), which reveals they are dependent on the family in terms of the income component. In the present review study, most participants were married women of childbearing age, so the husbands' income was as effective as the women's income. In the Kave Firouz et al.'s (2017) study, employed women had a healthier lifestyle than non-employed women and women with higher education and college degree had a healthier lifestyle.

Another social component related to a healthy lifestyle in the present review was social support. A study by Adams et al. (2017) has shown the association between social support and health-promoting lifestyle in rural women. A qualitative study also reported the lack of social support to be a barrier to women's adopting health-promoting behaviours during reproductive age (Baheiraei et al., 2013). In Ahmadi's review study (2016), there was a relationship between social support and health-promoting lifestyle in both sexes. Another study conducted on 3,124 patients with coronary heart diseases in Iran also showed that social support is the most important variable of healthy lifestyle in them (Keyvan & Ahmadzadeh, 2016). The results of two above mentioned studies are consistent with the results of the present systematic review. Therefore, it is important to improve social support to change unhealthy lifestyles and to adopt health-promoting behaviours. Social support is a multidimensional concept defined as feeling being attended to by others and belonging to a social network. Social support is divided into four domains: emotional, instrumental, informational and appraisal (Vaux, 1988). When an individual enjoys social support, their response to stress reduces and they are less exposed to various diseases such as cardiovascular diseases, cancer and rheumatoid arthritis (Goodenow et al., 1990; Holahan et al., 1997; Penninx et al., 1998).

Housing was another component of the women's healthy lifestyle in this study. Housing is one of the social determinants of health (Wilkinson & Marmot, 2003) related to health behaviours including physical activity. Dimensions of housing that are effective in promoting health include its affordability, quality, stability and context (Neighbourhood opportunity) (Swope & Hernández, 2019). The included studies examined residential stability, cost of rental houses and ownership status (organizational accommodation, owning the home). The economic component is the most important factor in selecting household's housing, which is also influenced by cultural, social and geographical factors (Wong, 2002). Strategies needed to achieve equality in healthy housing include appropriate housing conditions, suitable prices and stable housing (Hernandez & Suglia, 2016).

4.1 | Nursing implications

To address the social determinants of healthy lifestyle, training nurses and other health providers including midwives should be considered as one of the main principles for promoting more equitable health outcomes for women and their families as well as communities. In this systematic review, we determined the social determinants of healthy lifestyle that nurses can use from its results in their clinical practice for improving of women's lifestyle. For example, nurses can improve healthy lifestyle among women through social support, especially emotional and informational support.

4.2 | Strengths and limitation

Limited sample size and not disclosing the method for estimating the sample size in half of the included studies are among the limitations of this study. Also, the low number of studies included in the analysis of some of the social determinants is another limitation. The methodological quality of most studies was categorized as moderate. Another limitation of this study is the heterogeneity in the analysis methods and differences in confounding factors. All the included studies, except one, were conducted in the provincial centres, which hold a higher level of economic and social status than other provincial cities. Finally, the nature of cross-sectional studies is such that they are not able to detect the cause–effect relationship. One of the strengths of this study is the use of standard tools in most studies.

5 | CONCLUSION

Healthy lifestyle determinant among healthy Iranian women includes adjustable components of income, job, education, spouse's education and occupation, housing and social support. It is necessary to set policies to improve the status of factors related to women's lifestyle including reducing poverty, promoting education and providing social support to eliminate inequality in women's health.

CONFLICT OF INTEREST
The authors declare no conflict of interest.

AUTHOR CONTRIBUTION
SGY, SGH, MAJ, DL and MM participated in the study designing. SGY and SGH searched the literature and selected studies, extracted data, assessed quality and drafted the manuscript. MAJ analysed

data. DL and MM revised the draft and all authors read and approved the final version of the manuscript.

ETHICAL APPROVAL

This study was approved by the ethics committee of Tabriz University of Medical Sciences (Ethics code: IR.TBZMED.REC.1397.700).

PATIENT CONSENT

Not applicable.

DATA AVAILABILITY STATEMENT

Not applicable.

ORCID

Sakineh Ghasemi Yngyknd https://orcid.org/0000-0002-9690-1828
Mojgan Mirghafourvand https://orcid.org/0000-0001-8360-4309

REFERENCES

Abedi, P., Jorfi, M., & Afshari, P. (2015). Evaluation of the health promotion lifestyle and its related factors in reproductive aged women in Ahvaz. *Iran. Community Health Journal*, 9(1), 68–74.

Adams, M. H., Bowden, A. G., Humphrey, D. S., & McAdams, L. B. (2017). Social support and health promotion lifestyles of rural women. *Online Journal of Rural Nursing and Health Care*, 1(1), 43–65. https://doi.org/10.14574/ojrnhc.v1i1.501

Ahmadi, A. (2016). Social support and women's health. *Women's Health Bulletin*, 3(1), e60232. https://doi.org/10.17795/whb-31083

Ahmadi, A., Ahmadi, A., & Roosta, F. (2015). Health knowledge and health promoting lifestyle among women of childbearing age in Shiraz. *Women's Health Bulletin*, 2(3), 1–4. https://doi.org/10.17795/whb-25342

Ahmadipour, H., & Kiarash, G. (2016). Promoting healthy lifestyles for women in Kerman, Iran: A population-based study. *Women's Health Bulletin*, 3(3), e33612. https://doi.org/10.17795/whb-33612

Amirabadizadeh, Z., Sharifzadeh, G., & Moodi, M. (2016). Middle-aged women's quality of life and health-promoting lifestyle. *Modern Care Journal*, 13(3), e11597. https://doi.org/10.5812/modernc.11597

Anbari, K., Mostafavi, S. M., & Ghanadi, K. (2015). Health promoting behaviors in women of Khorramabad City in Western Iran in 2013. *Women's Health Bulletin*, 2(1), e22162. https://doi.org/10.17795/whb-22162

Baheiraei, A., Bakouei, F., Mohammadi, E., Montazeri, A., & Hosseni, M. (2015). The social determinants of health in association with women's health status of reproductive age: A population-based study. *Iranian Journal of Public Health*, 44(1), 119–129.

Baheiraei, A., Mirghafourvand, M., Charandabi, S.-M.-A., & Mohammadi, E. (2013). Facilitators and inhibitors of health-promoting behaviors: The experience of Iranian women of reproductive age. *International Journal of Preventive Medicine*, 4(8), 929–939.

Bakouei, S., Bakouei, F., Omidvar, S., & Bakhtiari, A. (2017). Health-promoting behaviors and their predictors in iranian women of reproductive age: A cross-sectional study. *International Quarterly of Community Health Education*, 38(1), 3–8. https://doi.org/10.1177/0272684x17747053

Bayati, M., Akbariyan, R., Kavosi, Z., Sadraei Javaheri, A., Amini Rarani, M., & Delavari, S. (2012). Socioeconomic determinants of health in the countries of West Pacific: Analysis of panel data. *Social Welfare*, 12(47), 111–130.

Bishai, D. M., Cohen, R., Alfonso, Y. N., Adam, T., Kuruvilla, S., & Schweitzer, J. (2016). Factors contributing to maternal and child mortality reductions in 146 low-and middle-income countries between 1990 and 2010. *PLoS One*, 11(1), e0144908. https://doi.org/10.1371/journal.pone.0144908

Cockerham, W. C., Rütten, A., & Abel, T. (1997). Conceptualizing contemporary health lifestyles. *The Sociological Quarterly*, 38(2), 321–342. https://doi.org/10.1111/j.1533-8525.1997.tb00480.x

Dratva, J., Gómez Real, F., Schindler, C., Ackermann-Liebrich, U., Gerbase, M. W., Probst-Hensch, N. M., Svanes, C., Omenaas, E. R., Neukirch, F., Wjst, M., Morabia, A., Jarvis, D., Leynaert, B., & Zemp, E. (2009). Is age at menopause increasing across Europe? Results on age at menopause and determinants from two population-based studies. *Menopause*, 16(2), 385–394. https://doi.org/10.1097/gme.0b013e31818aefef

Edgington, E. S. (1972). An additive method for combining probability values from independent experiments. *The Journal of Psychology*, 80(2), 351–363. https://doi.org/10.1080/00223980.1972.9924813

Egerter, S., Braveman, P., Sadegh-Nobari, T., Grossman-Kahn, R., & Dekker, M. (2009). *Education matters for health*. RWJF Commission to Build a Healthier America. Retrieved from https://www.issuelab.org/resource/education-matters-for-health.html

Enjezab, B., Farajzadegan, Z., Taleghani, F., Aflatoonian, A., & Morowatisharifabad, M. A. (2012). Health promoting behaviors in a population-based sample of middle-aged women and its relevant factors in Yazd, Iran. *International Journal of Preventive Medicine*, 3(Suppl 1), S191–S198.

Goodenow, C., Reisine, S. T., & Grady, K. E. (1990). Quality of social support and associated social and psychological functioning in women with rheumatoid arthritis. *Health Psychology*, 9(3), 266. https://doi.org/10.1037/0278-6133.9.3.266

Hernandez, D., & Suglia, S. (2016). *Housing as a social determinant of health*. Issue Brief. Robert Wood Johnson Foundation Convening. Retrieved September, 9, 2018.

Hillen, M. A., Medendorp, N. M., Daams, J. G., & Smets, E. M. A. (2017). Patient-driven second opinions in oncology: A systematic review. *The Oncologist*, 22(10), 1197–1211. https://doi.org/10.1634/theoncologist.2016-0429

Holahan, C. J., Moos, R. H., Holahan, C. K., & Brennan, P. L. (1997). Social context, coping strategies and depressive symptoms: An expanded model with cardiac patients. *Journal of Personality and Social Psychology*, 72(4), 918. https://doi.org/10.1037//0022-3514.72.4.918

Kave Firouz, Z., Sarem, A., & Farash, N. (2017). Comparison of healthy lifestyle of employed and unemployed women in shiraz with emphasis on demographic variables. *Iranian Demographic Association Letter*, 12(23), 181–211.

Keyvan, A. M., & Ahmadzadeh, R. (2016). The effect of social support on healthy lifestyle (Case study: Coronary heart disease in Baneh City). *Journal of Social Sciences*, 10(32), 51–66.

Mahdipour, N., Shahnazi, H., Hassanzadeh, A., Tabaraie, Y., & Sharifirad, G. (2013). Relationship between various aspects of life style in middle-aged women. *Bulletin of Environment, Pharmacology and Life Sciences*, 3(1), 68–74.

Marmot, M., Friel, S., Bell, R., Houweling, T. A., Taylor, S., & Health, C. o. S. D. o. (2008). Closing the gap in a generation: Health equity through action on the social determinants of health. *The Lancet*, 372(9650), 1661–1669.

Mirghafourvand, M., Baheiraei, A., Nedjat, S., Mohammadi, E., Charandabi, S.-M.-A., & Majdzadeh, R. (2014). A population-based study of health-promoting behaviors and their predictors in Iranian women of reproductive age. *Health Promotion International*, 30(3), 586–594. https://doi.org/10.1093/heapro/dat086

Panagiotakos, D., Georgousopoulou, E., Notara, V., Pitaraki, E., Kokkou, E., Chrysohoou, C., Skoumas, Y., Metaxa, V., Pitsavos, C., & Stefanadis, C. (2016). Education status determines 10-year (2002–2012) survival from cardiovascular disease in Athens metropolitan area: The ATTICA study, Greece. *Health & Social Care in the Community*, 24(3), 334–344. https://doi.org/10.1111/hsc.12216

Penninx, B. W., Van Tilburg, T., Boeke, A. J. P., Deeg, D. J., Kriegsman, D. M., & Van Eijk, J. T. M. (1998). Effects of social support and personal coping resources on depressive symptoms: Different for various chronic diseases? *Health Psychology*, *17*(6), 551. https://doi.org/10.1093/oxfordjournals.aje.a009305

Petrovic, D., de Mestral, C., Bochud, M., Bartley, M., Kivimäki, M., Vineis, P., Mackenbach, J., & Stringhini, S. (2018). The contribution of health behaviors to socioeconomic inequalities in health: A systematic review. *Preventive Medicine*, *113*, 15–31. https://doi.org/10.1016/j.ypmed.2018.05.003

Portal, I. D. (2016-2017). *Statistical yearbook 2016-2017*. Retrieved from https://irandataportal.syr.edu/socio-economic-data/statistical-yearbook

Qi, V., Phillips, S. P., & Hopman, W. M. (2006). Determinants of a healthy lifestyle and use of preventive screening in Canada. *BMC Public Health*, *6*(1), 275. https://doi.org/10.1186/1471-2458-6-275

Rafiee, A., Doostifar, K., Tavasoli, E., Alipour, F., Hosseini, H., & Darabi, T. (2014). The lifestyle of married women referring to health centers in West of Ahvaz. *Journal of Ilam University of Medical Sciences*, *28*(3), 1–9. In: Persian.

Raphael, D. (2011). A discourse analysis of the social determinants of health. *Critical Public Health*, *21*(2), 221–236. https://doi.org/10.1080/09581596.2010.485606

Soskolne, V., & Manor, O. (2010). Health inequalities in Israel: Explanatory factors of socio-economic inequalities in self-rated health and limiting longstanding illness. *Health & Place*, *16*(2), 242–251. https://doi.org/10.1016/j.healthplace.2009.10.005

Stanhope, M., & Lancaster, J. (2016). Health promotion with target population across the life span. In M. Stanhope (Ed.), *Public health nursing-E-Book: Population-centered health care in the community* (9th ed., pp. 27–31). Elsevier Health Sciences.

Swope, C. B., & Hernández, D. (2019). Housing as a determinant of health equity: A conceptual model. *Social Science & Medicine*, *243*, 112571. https://doi.org/10.1016/j.socscimed.2019.112571

Telfair, J., & Shelton, T. L. (2012). Educational attainment as a social determinant of health. *North Carolina Medical Journal*, *73*(5), 358–365.

Tol, A., Mohebbi, B., Yekaninejad, M., & Sabouri, M. (2018). Influential factors on health promoting behaviors and happiness among women. *Razi Journal of Medical Sciences*, *25*(169), 11–22.

Vallot, P. (2019). Education and occupation: Two components of the social class in France and Germany. *L'année Sociologique*, *69*(2), 425–450. https://doi.org/10.3917/anso.192.0425

Vaux, A. (1988). *Social support: Theory, research and intervention*. Praeger publishers.

Virtanen, P., Vahtera, J., Broms, U., Sillanmäki, L., Kivimäki, M., & Koskenvuo, M. (2008). Employment trajectory as determinant of change in health-related lifestyle: The prospective HeSSup study. *European Journal of Public Health*, *18*(5), 504–508. https://doi.org/10.1093/eurpub/ckn037

Walker, S., Sechrist, K., & Pender, N. (1987). The health-promoting lifestyle profile: Development and psychometric characteristics. *Nursing Research*, *36*(2), 76–81. https://doi.org/10.1097/00006199-198703000-00002

Welfare, A. I. o. H. a. (2016). *Australia's health 2016*. Retrieved from https://www.aihw.gov.au/reports/australias-health/australias-health-2016/contents/summary

White, M., Adams, J., & Heywood, P. (2009). How and why do interventions that increase health overall widen inequalities within populations? In *Social inequality and public health* (pp. 65–82): Policy Press.

Wilkinson, R. G., & Marmot, M. (2003). Social exclusion. In R. W. M. Marmot (Ed.), *Social determinants of health: The solid facts* (2nd ed., pp. 17): World Health Organization.

Wong, G. K. M. (2002). A conceptual model of the household's housing decision-making process: The economic perspective. *Review of Urban & Regional Development Studies*, *14*(3), 217–234. https://doi.org/10.1111/1467-940x.00055

World Health Organization (2009). *Women and health: Today's evidence tomorrow's agenda (9789241563857)*. World Health Organization. Retrieved from http://www.who.int/gender-equity-rights/knowledge/9789241563857/en/

World Health Organization (2010). *A conceptual framework for action on the social determinants of health*. World Health Organization.

World Health Organization (2020). *Social determinant of health*. World Health Organization. Retrieved from http://www.who.int/social_determinants/sdh_definition/en/

Zare, S. A., & Khaluee, Z. (2016). Comparing the healthy lifestyle among different groups of women in Yazd (with emphasis on employed and unemployed women). *Journal of Woman and Society*, *6*(4), 1–18.