

Women-centred workplace health promotion interventions: a systematic review

M. R. Jimenez-Mérida (1), M. Romero-Saldana, R. Molina-Luque (1), G. Molina-Recio (1), A. Meneses-Monroy (2), R. De Diego-Cordero (3), M. Vaquero-Abellan (1)

1 Nursing, Pharmacology and Physiotherapy Department, Faculty of Medicine and Nursing, University of Cordoba, Cordoba, Spain, 2 Professor, Nursing Department, Faculty of Nursing, Physiotherapy, and Podiatry, University Complutense of Madrid, Madrid, 3 Professor, Nursing Department, Faculty of Nursing, Physiotherapy, and Podiatry, University of Sevilla, Sevilla, Spain

Abstract

Aim: To analyse the workplace health promotion interventions implemented exclusively in the female community.

Background: The differences in biological, psychological, and social characteristics, as well as the type of work carried out by men and women, make it necessary for workplace health promotion to be specific for each group. This study focused on working women.

Introduction: Workplace health promotion interventions are centred in increasing the well-being and health of employees. The occupational health nurse has an essential role implementing these interventions.

Methods: A Systematic review was carried out in Medline and SCOPUS databases, following the PRISMA guide.

Results: 12 articles met the inclusion criteria. Two lines of interventions were found: (1) Promotion of breastfeeding (16.6%) and promotion of physical activity and other healthy lifestyles (83.4%). The interventions studied underlined promoting breastfeeding, preventing a sedentary lifestyle, improving body composition, reducing cardiovascular risk, relieving premenstrual symptoms and time of breastfeeding after returning to work, showing favourable results.

Discussion: The lack of studies on the subject and the medium / low quality of the articles included in the review have made difficult to analyse the workplace health promotion interventions, making it necessary to continue researching in this area.

Conclusion: There are few occupational health promotion interventions targeting women (1.9%) and the majority focus on promoting physical activity. It is worrying that specific aspects of women's health are so poorly addressed.

Implications for nursing practice and health policy. The work of the occupational nurse is essential to guarantee the health of women in the company, being the key figure in research and development of gender-related policies in the field of public health.

Keywords: Health promotion; Nursing; Occupational health nursing; Occupational health; Public Health Nursing; Public Health Policy; Women's health; working women.

Introduction

Health promotion encompasses “a wide range of social and environmental interventions that are designed to benefit and protect individual people’s health and quality of life by addressing and preventing the root causes of ill health, not just focusing on treatment and cure”(WHO 2016, page 1, 1st paragraph). Within this set of interventions, we find those aimed at specific areas, such as the workplace. The workplace health promotion (WHP) encompasses a joint effort not only of companies and workers but also of the entire society, to increase the well-being and health of employees (OSHA 2010). The role of the occupational nurse within these actions is essential since they are health professionals trained to develop WHP interventions on an ongoing basis, analyse the results, and research on health policies. They are also responsible to analyse individual health characteristics of workers, the type of job and their social and labour environment for possible hazards (Romero-Saldaña et al. 2019) The importance of the continuity of the WHP interventions must be highlighted, and not limited to various work scenarios, with prompt and fragmented actions, since it is not effective in improving workers’ health (Muñoz 2010). Therefore, interventions must include aspects such as the influence of the environment, organization, community and society, and also the implementation of health policies in order to carry them out correctly.

Work and women's health

In recent decades, WHP interventions aimed at modifying lifestyles and preventing occupational, chronic, oncological diseases, etc. have increased, however, there are still not sufficient to answer workers’ health needs (Rojatz et al. 2017). Moreover, these interventions generally do not differentiate between men and women. The different biological, psychological and social characteristics, as well as the type of work carried out by men and women, make it necessary for WHP interventions to be specific for each group (Llorca-Rubio et al. 2013). Thus, for example, about gender and risks at work, OSHA (2019) showed that women work in specific sectors; they balance dual obligations at work and home; they have not sufficient representation at the supervisory and management level; they have physiological differences with men, and perform work that is often mistakenly considered safe and comfortable.

In this sense, a study by Crawford et al. (2016) highlighted that, throughout the working life, there is a reduction in the well-being of women compared to men, accentuating the difference after the woman have children. It also emphasizes that, due to the higher life expectancy of women, morbidity and mortality figures in this group are elevated. The reason falls to the fact that this high life expectancy goes with a higher risk of developing

chronic diseases or some type of disability. There are also other specific problems that can affect women's health such as menopause, osteoporosis, stress, musculoskeletal problems, problems with breastfeeding, breast cancer, caregiver overload and inequalities when evaluating risks for occupational health (Crawford et al. 2016). Other study (Hart et al. 2019) underlined similar problems in differentiating the pathologies associated with men and women, and how ineffective could be health interventions that are not individualised and gender focused. For this reason, it has been necessary to separately investigate the health-disease processes of both groups, focusing on WHP interventions for women.

Aim

The aim of the present study is focused on obtaining information on the efficacy of the interventions applied in companies that have dedicated specific WHP programs for women versus those that have not applied any WHP or have done it with general non-specific interventions for women, and thus analyse changes in the level of health.

Method

Search methods and strategy

In the present study, a systematic search was performed using the PubMed MEDLINE and SCOPUS databases. The article search period was from September 01, 2013, to December 31, 2019. The research question was elaborated following the PICOS structure (P- workers between 18 and 65 years old; I - Specific WHP programs for women; C- without specific WHP; O- improvement of the health level; S - RCTs, Quasi-experimental studies, longitudinal, observational studies and systematic reviews/meta-analyses).

The search strategy was carried out in two phases. First, a general WHP search was made where the following descriptors were used: "Health Promotion AND Workplace"; "Total worker health" and "Risk Reduction Behaviour AND Workplace".

The results obtained were reviewed by two groups of researchers, selecting those aimed at health promotion interventions at work. Once the articles found in the first search were selected, a second search within those selected was made using the following terms: women, woman, female, breastfeeding, breast cancer, menstruation, osteoporosis y menopause.

Selection criteria

Inclusion criteria: articles which included WHP activities focus on women; articles written in English and Spanish. Exclusion criteria: articles of health promotion interventions outside the workplace; articles of general health promotion interventions, without individualizing in the study group.

Selection of studies and analysis

The first phase of the review was carried out by two groups composed of two researchers each, who created a database with those articles selected from reading the title and the abstract. Upon completion, both databases were pooled to remove duplicate articles. A third team was in charge of reviewing the articles whose inclusion could be doubtful.

Following the development of the database of general health promotion interventions in workplaces, those who met the study selection criteria were extracted. All reviewers had access to all data from the reviewed studies.

Data extraction and data verification were carried out by independent teams. The analysed information included the identification data (author, year and country of the study/company), characteristics of the participants (age and individual characteristics), sample size, study design, type of interventions and results.

Due to the heterogeneity of the studies and their results, a meta-analysis could not be performed. For structuring and writing the article, the PRISMA guide was followed (Moher et al. 2015)

Interventions and Population

The studies that have been included analyse the efficacy of specific WHP interventions in a female population. The age of the population corresponded to the active working age (18 and 65 years). Both individual and collective WHP interventions have been included, which focus on women and have been carried out in the workplace.

Types of studies and outcome variables

Observational and experimental studies were reviewed. Studies lacking a control group were not restricted. The analysed results have included the effectiveness of the interventions, depending on the type of intervention and groups studied, as well as the usefulness of the methodology applied in each one.

Assessment of risk of bias

For the assessment of the risk of bias, the Cochrane Collaboration tool has been used, through the RevMan program version 5.3 (Review Manager version 5.3). In this tool, the

risk of individual bias was evaluated from the following items: sequence generation (randomization); allocation concealment; blinding of participants, personnel, and investigator; incomplete data; selective outcome reporting; and other possible sources of bias.

Results

Selection of studies

A total of 2425 articles were obtained and, after applying the eligibility criteria, 628 manuscripts (25.8%) of general WHP interventions were selected. Of these, only 12 (1.9%) corresponded to the inclusion criteria. The reasons for the exclusion of articles are shown described in Figure 1.

Characteristics of the studies

Among the 12 selected articles, two corresponded to retrospective studies (Spatz et al. 2014; Snyder et al. 2018), one to a systematic review (Nestler et al. 2017), another to a systematic review and meta-analysis (Reed et al. 2017), seven randomized clinical trials (Barene et al. 2013, 2014a, 2014b, 2016; Tan et al. 2016; Mailey et al. 2017; Rowland et al. 2018) and a quasi-experimental (Tsai 2016).

Within the selected studies, two differentiated thematic lines are distinguished, one aimed at promoting physical activity and healthy lifestyle habits and the other aimed at promoting breastfeeding. The first is treated in 10 articles, representing 83.3% of the total of those selected. In turn, within the interventions promoting physical activity and healthy lifestyles, actions with different objectives were found: reduction of muscle pain and fatigue (Barene et al. 2014b, 2016; Mailey et al. 2017; Nestler et al. 2017), decreased risk of osteoporosis (Tan et al. 2016), decreased cardiovascular risk (Barene et al. 2013, 2014a; Nestler et al. 2017; Reed et al. 2017; Rowland et al. 2018), and reduction of premenstrual pain (Tsai 2016).

Promotion of physical activity and other healthy lifestyles

Interventions in this line (83.4%) focus on the prevention of cardiovascular risk and improvement of muscle pain, fatigue and physical condition. The studies carried out by Barene et al. (2013, 2014a, 2014b, 2016) verified how a routine of moderate/vigorous physical exercise through soccer and zumba, improves lung capacity, decreases levels of total fat mass and heart rate. Besides, in the medium term (40 weeks), it improves muscle pain, especially in the neck-shoulder region. Regarding fatigue, no conclusive results were seen after the end of the study. Other interventions that have improved the

state of health and have served as prevention of sedentary lifestyle and the consequences that it entails have been short breaks throughout the workday, better than long breaks (Mailey et al. 2017), as well as medium-high intensity exercises in spaces enabled in the company and coordinated by professionals (Nestler et al. 2017; Reed et al. 2017). However, it has been verified that the location of the training zone and the type of exercise determine the effectiveness of the intervention. The planned activity must allow the worker to reconcile with his professional work, so the type of work activity, the hours and the physical factors (noise, lighting, ventilation) that could affect the development of the intervention must be taken into account. Rowland et al. (2018) focused on analysing the effectiveness of the “peer model”, where a physically active woman from the environment of the workers presented her experience to motivate the rest to do physical exercise. It was found that the group that carried out the workshops according to this model increased their level of physical activity compared to the group that had only received general health recommendations.

Regarding the intervention to prevent osteoporosis in working women with a sedentary habit, it was found that the intervention group that promoted physical exercise and healthy nutritional habits, increased blood calcium levels and developed an active lifestyle, with moderate-vigorous activity, compared to the control group (Tan et al. 2016). To finish, Tsai (2016) developed an intervention that reduced premenstrual pain in her workers. After implementing an intervention with yoga classes in the workplace, the participants indicated less use of analgesia during menstruation and a moderate/severe decrease in the effects of premenstrual pain at work. Other effects that were evident after the intervention: decreased body pain and abdominal inflammation, the tension in the breasts, abdominal cramps and chills.

Promotion of breastfeeding

Only 16.6% of the articles deal with interventions to promote breastfeeding in the workplace. Snyder et al. (2018) found that those sectors where women received less formal and informal support (services, production and transportation), were more likely to abandon exclusive breastfeeding before 6 months and not continue with it after that time, while in those sectors where they received both types of support (administration), the opposite was true. On the other hand, the study carried out by Spatz et al. (2014) in hospital workers, evaluated a comprehensive plan to promote breastfeeding that made discounts available to mothers for the acquisition of support materials, breastfeeding rooms and workshops with specialist nurses before and after delivery. After comparing the results with national data, the workers at that hospital had higher rates of adherence to breastfeeding at 3, 6, and 12 months

Results of risk of bias

Figure 2 shows the result of the global analysis of the risk of bias, which was prepared using the RevMan 5.3 tool. Most of the studies present an unclear risk of bias and only in the item “incomplete presentation of the results” does not appear a high risk of bias. Regarding the process of masking and reporting risks, 25% or less of the selected works indicate this in their study.

The quality of evidence from randomized clinical trials and systematic review/meta-analysis (Barene et al. 2013, 2014a, 2014b, 2016; Tan et al. 2016; Tsai 2016; Mailey et al. 2017; Nestler et al. 2017; Reed et al. 2017; Rowland et al. 2018) ranged from high to moderate for presenting incomplete information on blinding to participants and staff, treatment of groups, and little or no information about the study protocol. In the rest of the studies (retrospective studies) (Spatz et al. 2014; Snyder et al. 2017) the quality fell from medium to low due to the high risk of bias in the selection of participants, subjective information collection, biased publication data and lack of information about the protocol before the investigation.

Discussion

Of the 628 articles chosen for full reading on WHP interventions, only 12 of them were directed at women. Of these, the interventions carried out by Barene et al. (2013, 2014a, 2014b, 2016) were originally proposed for a mixed group, but as they did not obtain a representative male sample, it was decided to analyse only the data of the female workers. This shows that only 8 articles were proposed from the beginning for the female group, showing a lack in the literature. The scarcity of articles with which to compare the results obtained makes it difficult to analyse the interventions.

Among the activities promoting physical activity, most are proposed outside working hours (Barene et al. 2013, 2014a, 2014b, 2016; Nestler et al. 2017; Reed et al. 2017; Rowland et al. 2018; Tan et al. 2016; Tsai 2016), although powered by the company. This could be a reason for rejection when involving workers in these interventions since it would conflict with the right to family conciliation and the development of activities of personal nature. Activities should be distributed throughout the working day and adapted to the type of work carried out in each company (Mailey et al. 2017), and propose additional activities for those who, after finishing working hours, want to continue with physical training. Various studies carried out in a mixed worker population have shown that, while activities such as Yoga or Pilates tone the muscles, improve joint flexibility and influence the worker's mental well-being (Tsai 2016; Ivandic et al. 2017), soccer, Zumba or aerobic exercises, such as walking or running, improve cardiovascular

performance and lung capacity, as well as decrease stress levels (Kettunen et al. 2015; Milanovic et al. 2015; Abdin et al. 2018). These results are similar to those of the present review. However, the study authors have not found any studies in the literature that address premenstrual pain as a specific WHP intervention. Although the scientific production does not finish associating the premenstrual syndrome with the loss of labour productivity, it does affect the psychosocial health of women, and it is necessary to expand the research in this field of study (Velasquez et al. 2019).

Regarding the promotion of breastfeeding after the first 6 months, there are awareness campaigns, and some companies have set up areas so that women can express milk, if they need it (Jantzer et al. 2018; Lauer et al. 2019). However, as the authors collected in this study conclude (Spatz et al. 2014; Snyder et al. 2017), a complete inclusion of family reconciliation within the workplace has not been reached. The long working hours, the turnicity, the sector where they carry out their activity or the distance between home and the company, are obstacles that must be worked on to support lactating women (González et al. 2017; Wallenborn 2019).

It should be noted that the quality of the articles obtained has been medium/low, being an added problem when evaluating the interventions. Wilkinson (2008) already noted in his publication on occupational health and policy, the paucity of studies evaluating the effectiveness of WHP interventions implemented in companies. This is a turning point for all health researchers since if the effectiveness of the interventions we carry out is not evaluated, we will not be able to create evidence that serves the community.

Regarding the development of policies capable of capturing gender differences, it has been observed that none of the articles has explored the complexity of health and gender relationship. The study of this relationship, as well as the multiple aspects of gender, is essential to understand the patterns that diseases follow in each group and the best intervention to prevent them (Hart et al. 2019). In this sense, the authors McGregor et al. (2019) analysed the creation of a network of health professionals and educators that could support the curricular integration of scientific evidence that includes the impact of sex and gender on health. This curricular integration would be mainly oriented to train health professionals in all their areas. In this way, the gender perspective could be integrated into public health research.

It is necessary to adopt a global vision of workers in order to analyse all the necessary variables, plan and schedule activities, implement them correctly and evaluate their effectiveness. In this sense, nursing has sufficient training to carry out this type of analysis and develop effective public health action plans (Campbell 2015). Of the

selected studies, three of them had an author associated with a nursing school (Rowland et al. 2018; Snyder et al. 2017; Spatz et al. 2014). A recently published study (Benton 2020) argues how nurses can take a leadership role in contributing to universal health coverage, especially within the area of health promotion and public health. However, not all countries have developed and defined the competencies of the profession (La Torre et al. 2020), making it necessary to create regulations and campaigns for visibility and empowerment. A recent example is the Nursing Now campaign, which encourages countries and leaders in public health to invest in the development of the nursing profession, with the aim of improving the global health of the population (Nursing Now n.d.).

Limitations

The main limitation of this study has been the lack of research focused on women's health in the workplace, preventing the comparison between WHP interventions and evaluating their effectiveness. Furthermore, the results have been so disparate and heterogeneous that they have not allowed the development of meta-analyses. It is possible that some study has been left behind in the grey literature or that the search synthesis has not covered the entire subject of study. Other limitations have been the consultation of only two databases, Pubmed and SCOPUS, and the language filter, being possible the loss of related articles.

Conclusion

The number of publications on WHP interventions directed specifically at women in the last years is low (1.9%), and most focus on the promotion of physical activity and other lifestyles. Furthermore, the quality of the studies is medium/low, with a moderate/high risk of bias, so it is necessary to expand quality research in this area. It is worrying that specific aspects of women's health, such as premenstrual syndrome or menopause, are so poorly addressed. It is essential to focus the development of specific interventions to improve the well-being of women workers. Public agencies should take responsibility and focus part of their efforts on implementing occupational health policies, encouraging companies to develop interventions in WHP on the female community.

In this way, to provoke progress in the field of occupational health, occupational nursing professionals should direct their efforts to implement WHP programs, increase their involvement in research and collaborate in decision-making in occupational and public health.

Implications for nursing practice and health policy

The implications for the practice of this study include raising awareness of the need to carry out effective and specific WHP activities for women. It is necessary to take this deficiency into account in the literature and that occupational nursing professionals, as responsible for the health of workers in companies, dedicate part of their effort to research in this line of work. This means investing in training of nursing professionals and standardizing the speciality of occupational nurses globally. In addition, it is necessary to highlight the relevance of adequately analysing the needs of each group, taking into account the biological, cultural and social differences between men and women and how these differences affect the level of health. The occupational nurse is a key figure in WHP interventions, and for this reason, it is necessary to continue developing the nursing profession, its specialities, and its visibility within the community.

However, the implication of governments and health institutions are critical for this transformation in occupational and public health policies. The results shown in this research underline the crucial need of start developing policies with gender perspective. We can not evolve as a community if we do not take into consideration all subjects that interact within. Female's issues should be addressed properly and taken into account as well as males', and the responsibility to update workplaces' policies relies on companies, health institutions and governments, as well as the community itself. Moreover, occupational and public health nurses should be change agents and research in this area, producing protocols and investigations that support these policies.

Some lines of research to be considered could be the implementation of WHP that facilitate family reconciliation and breastfeeding, the reduction of risk of osteoporosis in premenopausal workers or activities to relief premenstrual symptoms in young females. Furthermore, the develop of individualized gender-related interventions by the occupational and/or public health nurse would mean a substantial change in the way of approaching the WHP.

Author contributions

Study design: MRJM, MRS, MVA

Data collection: MRJM, MRS, RML, AMM, RDC

Data analysis: MRJM

Study supervision: MRS, MVA

Manuscript writing: MRJM, MRS

Critical revisions for important intellectual content: GMR, MVA

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Figure 1 PRISMA Flow diagram

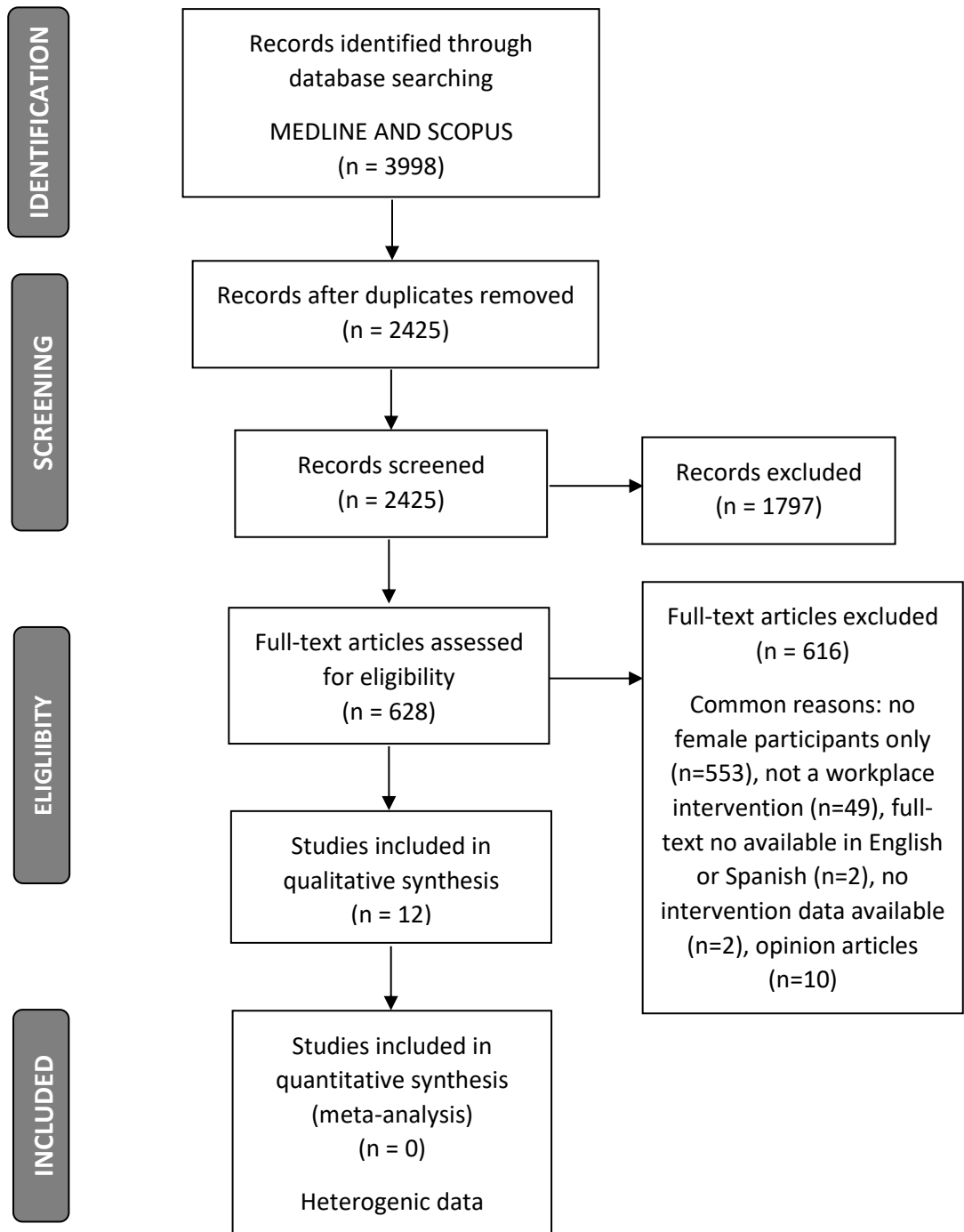


Figure 2. Summary of the assessment of the risk of bias of the articles included.

