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REVIEW ARTICLE

Workplace wellness programs for working mothers: A systematic review

Ernawati Ernawati^{1,2} | Fitriana Mawardi² | Roswiyani Roswiyani³ |
Melissa Melissa³ | Guswan Wiwaha⁴ | Sri Tiatri³ | Dany Hilmanto⁵

¹Public Health Department, Faculty of Medicine, Universitas Tarumanagara, Jakarta Barat, Indonesia

²Medicine Study Program, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia

³Faculty of Psychology, Universitas Tarumanagara, Jakarta Barat, Indonesia

⁴Public Health Department, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia

⁵Pediatrics Department Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia

Correspondence

Ernawati Ernawati, Public Health Department, Faculty of Medicine, Universitas Tarumanagara, West Jakarta, Indonesia.

Email: dr.ernawati@gmail.com, ernawati@fk.untar.ac.id

Abstract

Background: This systematic review aimed to uncover the evidence and benefits of employers' commitment to delivering workplace wellness programs for working mothers.

Methods: The articles published in PubMed, Embase, Scopus, and AgeLine-Medline databases between 2012 and 2021 were searched to evaluate the workplace wellness programs for working mothers with at least one resultant wellness or wellbeing (e.g., physical health, less stress, mental health, burnout, depression, smoking, bullying, alcohol consumption, overweight), work-life balance outcome, or job satisfaction.

Results: Eight studies that met the criteria were retrieved from databases. They showed some effective workplace wellness programs that can reduce depression, stress, and burnout, improve mental health, healthy behaviors, work-family balance and work-life balance. Working mothers participating in a workplace wellness program generally gain some benefits; one of which is reduced stress typically related to childcare, economic, and personal health issues.

Conclusions: The implementation of workplace wellness programs for working mothers showed positive effects on their health problems and health costs. These eight studies revealed that workplace wellness programs specifically designed for working mothers can lead to time efficiency by holding the programs in or near the workplace and implementing them during the workdays. This greatly suits the conditions of many working mothers whose limited time and energy to balance the household, family and work tasks.

KEYWORDS

wellness programs, working mothers, workplace

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1 | INTRODUCTION

Recently, there has been an increase in chronic diseases in the working population with increasing medical expenses.^{1,2} This has an impact on the life quality of employees and their families, as well as harming the sustainability of their company's economic interests.¹ It is important to carry out health promotion and health protection intervention in the workplace,¹ including disease prevention programs, for all of the employees. Workplace wellness programs supported by policies can have some advantages, such as mitigating health risks and optimizing the employees' quality of life.^{3,4}

A comprehensive setting and proper synchronization between programs, environmental supports, policies, advantages, and relations to the community are highly required to gain maximum safety and health needs of all workers.³ According to Berry et al (2011), a workplace wellness program is a program designed systematically and sponsored by the employer to develop healthy behaviors to minimize health risks, improve life quality, gain efficiency and effectiveness, and bring positive impacts on the organization's bottom line.⁵ Workplace wellness programs consist of several activities: screening actions to monitor health risks (e.g., measurement of body weight, biometric measures), preventive interventions to minimize health risks (e.g., vaccination, smoking cessation, physical activities, weight management counseling, access to fitness facilities, stress management, supportive social and physical environments, wearing personal protective equipment), health promotion to improve a healthy lifestyle (e.g., healthy food options, health education, company policies, workplace bullying), and disease management (e.g., health insurance, on-site medical health centre such as a clinic for workers with or without their families).^{2-4,6} Emmons et al. evaluated a workplace health education initiative targeting smoking, diet, and physical activity.⁷ Workers in the intervention condition developed an improved healthy diet and exercise behaviors; however, these did not affect their levels of smoking.⁷ Sorensen et al. found that a comprehensive workplace malignancy prevention intervention conducted at 15 manufacturing plants reduced the number of smoking stages.⁸ As a result, smoking levels dropped significantly over the 2 years, but a healthy diet did not improve. Golaszewski et al. found that there was an improvement in the workplace environment of a U.S. government's department for over 3 years.⁹ There was a decline found in the hours taken by workers for sick leaves, progress in the worksite environment, and stable employees' risk statuses although some of them were getting older.⁹ Short et al. reported the results to Prudential Financial in which physically active workers had a good level of high-density lipoproteins (HDL).⁸ The

workers joining a disease controlling program were also found to have a declined level of low-density lipoproteins (LDL) and cholesterol in 1 year matched to a group of non-participants.¹⁰ Byrne et al. presented the findings of their seven-year research (2003–2009) at Vanderbilt University, in which the application of health promotion programs had improved the physical activities of employees from 73% to 83%.¹¹ Jackson et al. reported that there was a decline in blood pressure and an increased level of awareness among the workers after the interventions through health education for 6 months (86%).¹² Merrill et al. compared the employees of Lincoln Industries with those outside Lincoln Industries in terms of four wellness indicators, namely emotional health, physical health, access to health-related services, and engagement in healthy behaviors.¹³ It was found that the employees of the Lincoln Industries were better than those outside in three of the four indicators, namely emotional health, physical health, and engagement in healthy behaviors. Neville et al. carried out an 8-year study and revealed that there was an improvement in the health condition of workers with chronic diseases.¹⁴ Long-standing involvement was linked to Body Mass Index (BMI), adjusted blood pressure, cholesterol, and with the highest advantages discovered in the highest-risk group. Berry et al. reported that a U.S. software provider, SAS Institute (The Statistical Analysis System), ran its own worksite full-service health clinics for workers and their families.¹⁵ The services included consultation with a dietician, allergy shots, blood tests, consultation with a psychotherapist, and physical therapy. Workers generated a connection with a primary care physician (a medical home) which guaranteed the continuity of care.¹⁵

Not all worksites provide workplace wellness programs aimed specifically at working mothers with special conditions with their triple burdens of taking care of their nuclear family, parents, parents-in-law, and the demands of the worksite.^{1-4,16,17} Not all workplace wellness programs showed positive results on the workers' wellness in the short time as reported from the RAND Employer Survey by one employer that did not succeed significantly in lowering cholesterol levels,² and Burke says on Hochart and Lang's research at Blue Cross Blue Shield in weight loss.⁶ The success of workplace wellness programs requires consistency and a long period of time to assess their success.^{2,6} Thus, a systematic review is needed to understand better the evidence associated with the implementation of wellness programs in the workplace.

Working mothers as part of the workers' community are more vulnerable to various health problems compared men or other working women. Health risks emerge from both workplace factors and family factors, which sometimes are correlated to each other. Working mothers often have to carry out multiple responsibilities at the same time,

or preventive interventions to reduce health risks (e.g., physical activity, weight control counseling, vaccination, smoking cessation, access to fitness facilities, stress management, supportive social and physical environments, wearing personal protective equipment) or health promotion to improve healthy lifestyle (e.g., healthy diet options, health education, company policies, workplace bullying) or disease control (e.g., health insurance and on-site medical clinics for workers with or without their families), but not any breastfeeding programs, because Kin JH et al have carried out an updated systematic review related to workplace lactation interventions until September 2017.²⁵ The articles were omitted if there were no working mothers among the respondents, no workplace wellness programs implemented, and no outcomes mentioned. The criteria for working mothers were women working pregnant or having a minimum of one child of any age.

2.2 | Data extraction and quality assessment

The PRISMA guidelines were used during the data collection process, as shown in Figure 1. The current research team consisted of 7 authors (4 physicians and 3 psychologists). The concept was created by four of the authors, namely E, DH, GW, and ST (E and ST as the originator of ideas when the first PICO concept was and DH and GW provided input and correction for the first PICO concept). Of 941 articles, 14 were removed due to duplication, and 827 were excluded after the titles and abstracts were reviewed by E, M, R and F independently (E and M re-checked after being chosen together with R and F). Of 100 full-text articles, 53 articles were excluded after finding out that no working mothers were involved as the research respondents; no workplace wellness programs were implemented; no original articles were found out. Of the remaining 47 articles, 39 were excluded by E, M, R and F independently because there were neither specific working mothers mentioned in the respondent section nor specific workplace wellness programs implemented. The seventh author (DH) was consulted when there were disagreements among the rest of the authors. The methodology review was carried out by E, DH, GW, and ST. Finally, there were 8 articles included in the review with 2 were published in 2014, 2 in 2016, 3 in 2017 and 1 in 2020.

2.3 | Statistical analysis

Based on the final search output, there were only 8 articles considered eligible for this systematic review, consisting of 2 qualitative studies and 6 quantitative studies. Clarke

contends, “systematic review does not need to combine the results of the studies to provide an average estimate” when such heterogeneity in methodology exists.²⁶ Therefore, in this study, the data were collected and synthesized through narrative interpretation. Approaches to the results were organized based on the study designs, occupations, workplace wellness programs, and outcomes. The results were presented in Table 1. Every implemented workplace wellness program had an outcome, and the survey study showed the report from their workplace.

2.4 | Risk of bias assessment

Quality assessment of the selected studies was appraised with the ‘QualSyst created by Kmet and teammates using a checklist consisting of 14 questions to assess the quantitative studies and 18 questions to examine the qualitative study.²⁷ They set up a cut-off of 75% for quantitative papers and 55% for qualitative papers. The total details of quality reviews of personal studies were provided in Supplement 1. Based this quality assessment by Kmet and teammates, quality interpretation for quantitative papers is considered “strong” if the summary score is >0.80 , “good” if the summary score is $0.71-0.79$, “adequate” if the summary score is $0.50-0.70$, and “limited” if the summary score is <0.50 . For qualitative papers, a score of ≥ 0.55 is categorized as “adequate” while a score of ≤ 0.54 is considered as “low-quality”.²⁷ Each study quality assessment is shown in Supplement 1.

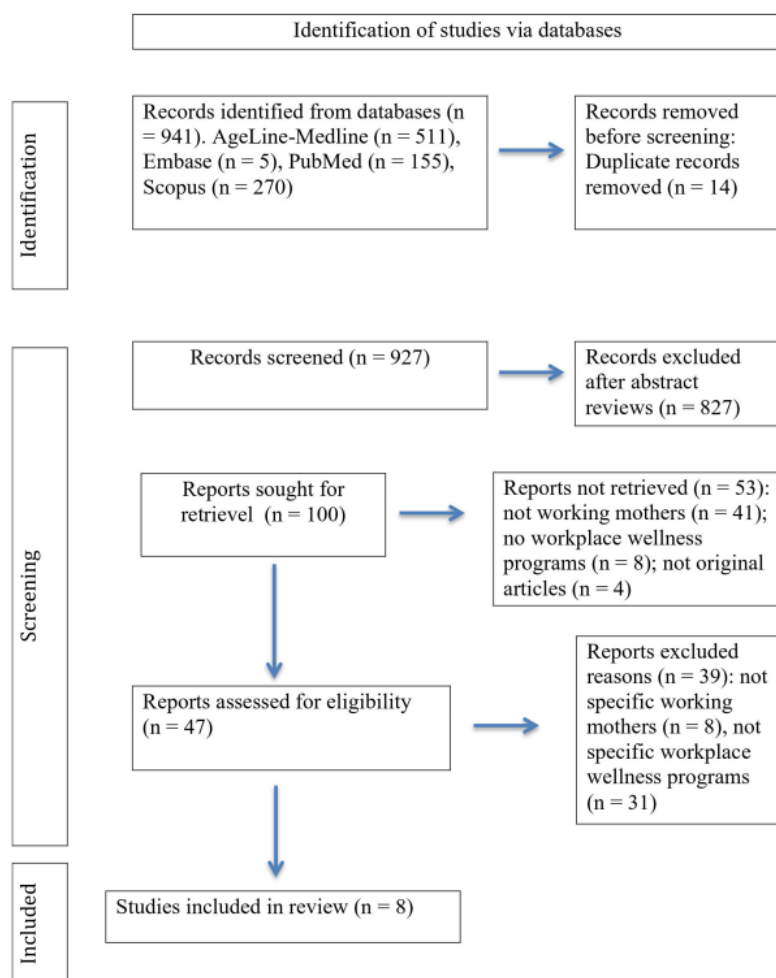
3 | RESULTS

The 8 articles consisted of two qualitative, one RCT, one questionnaire survey, one longitudinal and three cross-sectional study. All of them show adequate results for qualitative studies and are strong for quantitative studies after doing a quality assessment using QualSyst tool. Six of them were conducted in the USA, one in Thailand, and the other was in the UK. Three of them had physicians as their respondents, while the rest did not.²⁸⁻³⁵

3.1 | Workplace wellness programs

Workplace wellness programs mentioned in the eight studies consisted of indoor walking clubs, worksite pedometer challenges, recipe contests, social support (exercising and eating healthy food together), extra free time provided during the workday for workers to exercise or choose a continuing education class, working hour flexibility, work environment stimulation, activities during

FIGURE 1 Article selection using PRISMA 2020.



free time, maternity leaves, job reward, workplace integration and support, institution-affiliated child-care and Authentic Connections Groups (ACG) programs with 12 sessions (1. Introduction, 2. Minimizing rumination, 3. Children's pain and go-to committees, 4. Obstacles for connecting authenticity, 5. Anger/hurt, 6. Support wallets, 7. Assertiveness and mentorship at work, 8. "Good enough" mothering, 9. Continuity after termination 10. Shame versus self-compassion, 11. Limit-setting and affection, 12. Prioritize tending) that have working mothers.^{28–31} According to the author, many other workplace wellness programs in the worksite can be added to suit the needs and abilities of employees; however, they have not been designed to accommodating other working mothers' needs (for example, on-site clinics that can serve reproductive health problems for working mothers, health insurance related to diseases specifically for reproductive organs in working mothers, special health checks on reproductive organs for working mothers, etc.).

⁶ Some research revealed that workplace wellness programs held at worksite helped working mothers manage their time well. Research by Maraolo and Christiansen for example, showed that physical activity can be done properly if adequate places, facilities, time,^{28,30} and support from supervisors as well as co-workers are available.^{32,33,35} Maraolo, mentioned activities during free time, maternity leave,²⁹ working hour flexibility⁶ as part of stress management.^{33,34} Similarly, the study by Luthar using the ACG intervention²⁹ and by Apple using institution-affiliated childcare³¹ improved working mothers' time management which led to less stress. Christiansen, Zhou discovered that workplace wellness programs giving some extra free time to working mothers allow them to do other activities, such as eating healthy food and doing physical activities at the worksite and on workdays.^{28,34} These programs should also be supported by the co-workers and supervisors. However, these do not suit the shift workers because they have a different work schedule compared

TABLE 1 Description of the study findings

Study design First author	Occupation	Respondent's age, age of children and number of children	Workplace wellness programs	Outcomes
Cross-sectional Sanguanklin N (2014)	Full time worker (skilled and semi-skilled workers in private and government workplace)	The average working mother's age is 28.76 years (SD 5.22). The average gestational age was 30.77 weeks (SD 3.89).	Workplace support	Mental health (psychological distress). The results from the hierarchical multiple linear regression models indicated that the interaction terms between job strain and perceived workplace support was not significant. Another contribution of the findings was the significant direct effect of perceived workplace and family support in reducing psychological distress in employed pregnant women.
Cross-sectional Pedersen DE (2014)	Professional/managerial	The average working mother's age was 35.71 years (SD 4.8). The number of children averages 2 with preschool age.	Job flexibility Co-worker support	Preventive health behaviors (adequate sleep, adequate exercise, time to relax, healthy diet) → job demands were associated with days of adequate sleep for mothers, job flexibility statistical significant with adequate exercise, time to relax and healthy diet. Subjective health outcomes (feel worried or stress, feel overwhelmed, feel healthy and energetic) → job flexibility statistical significant with feel worried or stress, feel overwhelmed and feel healthy and energetic Mothers who had higher levels of education and job flexibility reported fewer days per week of feeling worried or stressed, whereas those with greater work hours and work pressure reported more days of worry and stress. Occupational status: positive association with occupational status ($b = .32^*$), indicating that the professional women workers in the sample reported more days of adequate sleep
Longitudinal study Zhou N (2016)	No information	There is no data on the age of working mothers nor the number of children. There is only data on the age of children from 6 months to grade 5.	Job reward Reduced work hours	Work life balance (work-family enrichment) → job reward associated with higher work-family enrichment
Qualitative Mazerolle SM (2016)	Head athletic trainers	The average working mother's age is 38 years old (SD 9). The number of children and the age of the child is not mentioned	Supportive supervisor, supportive co-worker, family oriented environment in workplace/ workplace integration	Work life balance "As previously mentioned, time is a limiting factor, but workplace integration enables the working mother to make time for her role as AT and leader as well as that of mom and caretaker"

TABLE 1 (Continued)

Study design First author	Occupation	Respondent's age, age of children and number of children	Workplace wellness programs	Outcomes
Qualitative Christiansen K (2017)	Female primary caregivers, schools, tribal employees from tribal agencies, enterprises (such as the casino and gas station)	There is no explanation of the age of the working mother, the number of children and the age of her child. Only the age of adult respondents aged 18–75 years and child respondents aged 6–17 years	Indoor walking clubs, worksite pedometer challenges, recipe contests, and social support (exercise or eat healthier together, extra break time given during the workday for workers to exercise or choose a continuing education class), incentives to engage in healthier behaviors	Work-life balance Work-family balance Healthy behaviors (regular eating, activity schedule, physical activity, healthy diet) Positive responses to the respondents
RCT Luthar SS (2017)	PhD clinicians, physicians, physician assistants, nurse practitioners	The age of working mothers in the intervention group was 38.76 (SD 6.13) and the control group was 39.39 (SD 4.83). The ages of the working mothers' children are all ages, <18 years old and >18 years old. There is no mention of the number of children.	Authentic Connections Groups (ACG) based on the structured Relational Psychotherapy Mothers' Groups (RPMG) with 12 sessions (stress management)	Mental health (less depression, less stress, lower stress hormone)
Questionnaire survey Maraolo AE (2017)	Physicians	The average working mother's age is 32 years (SD 5). The ages of the working mothers' children are all ages. There is no mention of the number of children.	Working hour flexibility, stimulating work environment, activities during free time, maternity leaves	Work-life balance (maternity leave) > 50% Healthy behaviors <50% (physical activity) Mental health <50% (stress management)
Cross-sectional Apple R (2020)	Physicians; house staff physicians; clinical providers; non-clinical support or administration non-clinical faculty	The age of the working mother is not stated, there is only a minimum number of children 1 who are aged 6 months to 6 years	Institution-affiliated childcare (supportive social and physical environments)	Mental health (less stress and burnout)

to the schedule of working mothers. Workplace wellness programs must be of great quality, comprehensive, easy to apply, engaging, fun, personalized, and designed well with some main programs.⁶ These eight studies do not explicitly explain nominal financial benefits for employers and working mothers, but we clearly understand that the ability to maintain physical and mental health and balance tasks at work and home will reduce health costs and increase benefits for employers, working mothers, and their families.^{28–35} This is what was conveyed from The RAND Employer Survey data showing that more than 60% stated that their program reduced healthcare costs, and around four-fifths reported that it decreased absenteeism and increased productivity. The evaluation showed that the employer saved \$111 per member in 2009 and \$261 in 2010.²

3.2 | Working mothers wellness, work-life balance, and job satisfaction

The respondents' occupations in the eight studies were physicians, workers in tribal agencies, schools, and enterprises, PhD clinicians, physician assistants, nurses, house staff physicians, other clinical providers, non-clinical support, and non-clinical faculty administrators, skilled and semi-skilled workers in private and government workplace, professional/managerial, and head athletic trainers.^{28–35} Five of the eight articles mentioned mental health studies,^{29–33} because the most common issues faced by working mothers are stress, burnout, and depression. The amount of work they have both at work and home is often overwhelming, which reduces their physical capacity, time, endurance, energy, and psychological acceptance.^{3,17,18,29,33}

These eight studies were proof that the implementation of workplace wellness programs can improve the working mothers' health by allowing them to do a healthy diet and physical activity to lower the risks of chronic diseases, such as hypertension, cardiovascular problems, diabetes, and stroke.⁶ Christiansen and Pedersen reported that there were positive impacts of physical activities and a healthy diet carried out at worksites and during workdays, such improved work-life balance, work-family balance, and healthy behaviors.^{28,33} Luther provided evidence that the implementation of stress management, such as ACG program intervention can improve working mothers' mental health.²⁹ Sanguanklin and Mazerolle proved that workplace support can reduce stress and maintain work-life balance.^{32,35} This result is similar to that of the Apple study that implemented institution-affiliated childcare.³¹ Significant improvements were found between the intervention and mothers in the control group based on the results of central psychometric measures, with the

transition mainly manifesting three months after the program had ended. Psychological indices were measured using Brief Symptom Inventory,³⁶ the Beck Depression Inventory,³⁷ The Self-Compassion Scale,³⁸ Parenting Stress Index,³⁹ while the burnout was measured using The Maslach Burnout Inventory.⁴⁰

Other evidence showed a significant reduction of cortisol level from baseline.²⁹ Apple study reported a 6.3 lower median stress score for the worksite with implemented institution-affiliated childcare compared to without institution-affiliated childcare.³¹ Maraolo reported more than 50% of working mothers who enjoyed the maternal leave had that impact on their work-life balance.³⁰

4 | DISCUSSION

There were not much data found on workplace wellness programs specifically designed for working mothers from 2012 and 2021. This suggests that many worksites may not have specifically designed or fully prepared workplace wellness programs yet for working mothers, although there are already existing ones that can be used by both working and non-working mothers such as physical activity, weight loss, healthy diet, health promotion and stress management programs.^{1,2,5–7} Three of the studies focused on health workers like physicians. All workplace wellness programs in the eight studies also showed positive impacts of the programs on reducing obesity, depression, burnout, and stress related to childcare, finances, work-life balance, and other individual health.^{28–35} The studies' results were in accordance with the result of Ryan et al., in which social support can promote healthy lifestyle choices, safety, health, wellbeing,^{41,42} work and family satisfaction, mental health, cardiovascular health,⁴³ job satisfaction⁴⁴ and economic outcome.⁴⁵ A large U.S. warehouse retail company running a worksite wellness program gained significantly greater rates among the exposed employees. They reported that there were some positive health behaviors developed among the exposed employees compared with those who were not exposed. However, there were no significant differences after 18 months of clinical or biometric measures, healthcare utilization and spending, and employment outcomes.⁴⁵

All the workplace wellness programs implemented in the eight studies were similar to those recommended by the National Institute for Occupational Safety and Health⁴¹ and The National Workplace Wellness Programs (WWP) in Botswana, which mainly consisted of stress management and team building, psychological and spiritual care, health screening, health promotion, therapeutic recreation, occupational health and safety,⁴⁶ and multicomponent or multidimensional

workplace wellness program. They were also similar to the programs presented by many U.S. employers, such as nutrition, stress reduction, issues typically addressed by registered dietitians at the therapy worksites, and physical activity.⁴⁵ Workplace wellness programs were described comprehensively in a study by Biswas et al., in which they consisted of flexible work hours, onsite shower facilities, worker assistance programs, fitness programs and/or physical activity, stress management and prevention, self-care books/tools, nutrition education, education on work-family balance, fitness breaks, on-site fitness or walking trails, health risk assessment, smoking cessation classes/counseling, weight management classes/counseling, screenings for high blood pressure, alcohol or drug abuse support programs, cholesterol reduction education, screenings for cholesterol levels, screening for diabetes, chronic disease management programs, promotions/discounts to encourage healthy food choices, food labels with specific health information in the cafeteria, nurse advice line, screenings for any forms of cancer, signages to encourage people to use the stairs, and education on HIV/AIDS.⁴⁷

Although some workplace wellness programs suit all types of workers, some others require special treatments to be included for certain groups, such a group of working mothers. The treatments include working flexibility that can be used by the working mothers for breastfeeding, the availability of childcare access, and social support from supervisors and co-workers to ease a large amount of burden they have.^{28–35} A successful workplace wellness program is typically one that suits a particular worker population, workers' needs, the workplace, individual and organization¹¹ health targets.³

There is no doubt that workplace health programs starting to be widely recognized by employers for the great benefits¹¹ that they offer for workers, employers, and companies, such as improved physical health, mental health, life balance work safety, job satisfaction, work productivity and economic outcomes.^{1,41–45} These benefits will certainly bring a positive impact on the workers' families as well.

4.1 | Strengths and limitations

The study's strength is that it is based on a search that is entirely focused on the wellness of working women in the workplace and excludes breastfeeding initiatives.

As a limitation, we searched databases by the Boolean operator only using the keywords “occupational” OR “workplace” AND “wellness” AND “programs” AND “working” AND “mothers”. There may be some other words that can show more detailed results based on the set criteria.

5 | CONCLUSION

1 The implementation of workplace wellness programs for working mothers showed positive effects on health problems and health costs directly or indirectly. The results of these **1** studies showed that workplace wellness programs for working mothers can lead to time efficiency and work-life balance. They were held in or near the worksite, made available in the work environment, and implemented during workdays. These suit the condition¹ of working mothers well because they tend to have limited time and energy to balance household, family and work tasks.

AUTHOR CONTRIBUTION

Conceptualization: Ernawati, Dany Hilmanto, Guswan Wiwaha, Sri Tiatri. Data curation: Ernawati, Melissa, Roswiyani, Fitriana Mawardi. Formal analysis: Ernawati, Melissa, Fitriana Mawardi. Methodology: Ernawati, Melissa, Fitriana Mawardi. Project administration: Ernawati. Visualization: Ernawati, Melissa. Writing-original draft: Ernawati, Sri Tiatri. Writing-review & editing: Ernawati, Dany Hilmanto, Guswan Wiwaha, Sri Tiatri.

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CONFLICT OF INTEREST¹

There is no conflict of interest among the authors associated with the materials used in this paper.

DATA AVAILABILITY STATEMENT

Available from the corresponding author on request.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

ORCID

Ernawati Ernawati  <https://orcid.org/0000-0003-3009-4573>

Fitriana Mawardi  <https://orcid.org/0000-0002-8058-3220>

Roswiyani Roswiyani  <https://orcid.org/0000-0001-9506-6974>

Melissa Melissa  <https://orcid.org/0000-0001-5721-3590>

Guswan Wiwaha  <https://orcid.org/0000-0002-2514-7493>

Sri Tiatri  <https://orcid.org/0000-0003-2047-1603>

Dany Hilmanto  <https://orcid.org/0000-0003-3684-4144>

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