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**Original Article**

# Acceptance of KOSPEN Plus Active Living program for workers in Malaysia: A cross-sectional study

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**Abstract**

**Introduction:** KOSPEN Plus (KP) is a workplace intervention to decrease the prevalence of non-communicable diseases (NCDs) and associated risk factors among workers. Active Living, a program component, emphasizes fitness and lifestyle improvements. The purpose of this study is to investigate the acceptance of the KOSPEN Plus Active Living program among government and private agencies in Malaysia.

**Methods:** A cross-sectional study was conducted from January to March 2020 in the agencies already implementing the KP program. Data was collected from members of the KP coordinating committee using a self-administered questionnaire in electronic form. The Active Living scope consisted of three sections namely sociodemographic, Active Living activities and Active Living facilities. Different in Active Living activities before and after the program were evaluated using the chi-Square test.

**Results:** A total of 362 agencies have participated in this study. Prior to the program, the most common activity undertaken by agencies was having scheduled fitness activities (18.2%), followed by promoting stair usage (17.7%) and carrying out fitness activities (9.1%). Following the program's implementation, these activities significantly increased to 46.1% ($P<0.01$), 33.7% ($P<0.01$), and 27.3% ($P<0.01$), respectively. Facility enhancements included an increase in walking trails from 23.2% to 28.7% ($P<0.01$) and fitness facilities from 21.5% to 26.5% ($P<0.01$).

**Conclusion:** The study revealed a moderate increase in Active Living activities and facilities before and after the program. Continued promotion and strategic improvements are essential to mitigate NCDs and foster a healthy workplace culture.

**Keywords:** KOSPEN plus, Workplace health promotion, Non-communicable diseases, Active living, Malaysia

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## Introduction

Non-communicable diseases (NCDs) continue to be a major public health concern worldwide, with devastating consequences for individuals, families, and communities.[1,2] The World Health Organization (WHO) identified four major NCDs (cardiovascular disease, cancer, chronic respiratory disease, and diabetes) that collectively killed approximately 25.9 million people in 2000 and increased significantly to 33.3 million in 2019. If current trends continue, the total annual global NCDs deaths will exceed 77 million by 2048.[3] In Malaysia, NCDs are the leading cause of death and the largest contributor to the nation's morbidity burden.[4] The Ministry of Health (MOH), Malaysia estimated that cardiovascular disease, diabetes, and cancer have cost the nation around RM 13 billion in lost productivity, accounting for one percent of Malaysia's gross domestic product in 2017.[5] The National Health and Morbidity Survey (NHMS), conducted in 2015 and 2019, found that the prevalence of NCD risk factors among its population has continued to rise. According to the NHMS findings from 2015, 8.3% of adult Malaysians have diabetes, and this increased to 9.4% in 2019. In terms of known hypertension, the prevalence of the disease was 13.1% in 2015 and increased significantly to 15.9% in 2019. While, the prevalence of hypercholesterolaemia in 2015 and 2019 were 9.1% and 13.5%, respectively.[6,7]

The prevalence of NCDs is rising not just in the general population of Malaysia but also among those in the workforce. [6,7] In response to the rising prevalence of NCDs among workers in Malaysia, the MOH developed and implemented a nationwide workplace intervention program to reduce the occurrence of NCDs as well as related risk factors in the workplace environment known as KOSPEN Plus (KP, Healthy Community Empowers the Nation - Plus) in 2016.[8] Briefly, KP is an intervention program launched by the MOH in collaboration with other interested agencies in government and private institutions to enhance healthy behaviours among the workers. KP is a comprehensive initiative aimed at transforming public health services by engaging workers in programs such as (a) healthy eating, (b) smoke-free living, (c) active living, (d) weight management, (e) health screening, (f) mental health, (g) fostering healthy work environments, and (h) preventing and reducing harmful alcohol use. The

primary units of KP are the coordinating teams, consisting of trained members from each agency. These teams serve as health change agents, fostering positive behavioral changes among workers by encouraging them to adopt and maintain healthy lifestyles.[9] Workers spend more than thirty percent of their waking hours at work, and the development of NCDs among workers has been connected to a number of factors, including shift work, long working hours or overtime, high job expectations, and an absence of job control. Thus, the workplace appears to have considerable potential for this intervention program.[10,11]

In the early phase of KP implementation, multiple engagements from the MOH with the government and private agencies were held to achieve extensive advocation coverage and yielded favourable outcomes for the agencies. While the benefits of workplace health interventions are widely recognized, there is limited evidence of their long-term acceptance and effectiveness in Malaysia, particularly within government and private agencies. However, the MOH believes that this new workplace healthy living interventions program will be widely received and help to lower the burden of NCDs among workers in the country.[8,9] Thus, the purpose of this study is to investigate the acceptance of the KP Active Living program among government and private agencies in Malaysia.

## Methods

### *Study design and participants*

A cross-sectional study was conducted between January and March 2020 across 16 Malaysian states. All agencies that implemented the KP program between 2016 and 2018 were included. In each state, a liaison officer from the State Health Department was identified to help the investigators in identifying the study participants from the agencies involved. In each agency, one of the KOSPEN Plus Coordinating Committee members was invited to participate in the study as a respondent. The inclusion criteria for this study are individuals holding positions as chairman, deputy chairman, or other committee members who have a comprehensive understanding of the agency's KP program and were directly involved in its implementation. On the other hand, the exclusion criteria excluded individuals who were not part of the Coordinating Committee or those unable to provide consent to participate in the study. Additional information about the study design can be found in the KP technical report.[12]

### *Instruments*

The Active Living program questionnaire was designed and pre-tested by investigators, and a few minor corrections were made before distributing it to respondents. It was written in Malay language and comprised of three sections. The first section consists of the sociodemographic characteristics of the agency such as the total number of workers, the date of KP program was implemented, and the date of KP Coordinating Committee was established. The second section consists of three questions regarding whether the agency implements any Active Living activities such as scheduled fitness sessions and promotes the "Let's Use the Stairs" campaign on workers, with the expected answers being "Never", "Sometimes", and "Always". The third section consists of two questions on Active Living facilities and inquiring whether the agency provides gym facilities/fitness corners and walking trails, with the expected answers being "Yes" and "No".

### *Data collection*

All questionnaire items were self-reported, and the data was collected using a Computer-Assisted Self-Interview (CASI) technique. Electronic surveys were distributed to respondents via email. Before answering any questions on the survey, respondents had to read and fully understand all of the information that was provided and give their informed consent. Respondents must answer all questions, and the application will remind them of relevant topics that have yet to be answered to reduce unanswered questions. To ensure a high response rate, respondents were reminded if they fail to answer the questionnaire within the specified period. Each respondent's answer that was sent to the server underwent several rigorous quality checks for accuracy.

### *Statistical analysis*

SPSS version 25 was used for analysis. Descriptive statistics were used to summarize respondent demographics. Categorical variables were reported as frequencies and percentages. For the current analysis, answers of 'Never' or 'Sometimes' were grouped as one category (irregular), while 'Always' was categorized as regular. Chi-square tests assessed changes in activities and facilities before and after the program was implemented, with $P$ values $< 0.05$ indicating significance.

## Results

### *Active Living activities*

A total of 362 agencies participated in the study. Following the implementation of the Active Living program, the percentage of workers who consistently engaged in fitness activities rose significantly from 9.1% to 27.3% ($P < 0.01$). While, the regularly conducted scheduled fitness activities and promoted the use of stairs in the agencies were also significantly increased to 46.1% and 33.7%, respectively ($P < 0.01$; Table 1).

### *Active Living facilities*

After the program was implemented, the percentage of workers with access to gyms or fitness corners increased significantly from 21.5% to 26.5% ($P < 0.01$). Additionally, there was a substantial increase in the number of agencies

**Table 1.** Difference in Active Living before and after the program, by activities

| Activities | Frequency (%) | | *P* |
|---|---|---|---|
| | Regular | Irregular | |
| 1). Agency carry out fitness activities for employees? | | | |
| Before | 33 (9.1) | 329 (90.9) | 0.01 |
| After | 99 (27.3) | 263 (72.7) | |
| 2). Agency conducted scheduled fitness activities? | | | 0.01 |
| Before | 66 (18.2) | 296 (81.8) | |
| After | 167 (46.1) | 195 (53.9) | |
| 3). Agency promote "Let's Use Stairs"? | | | |
| Before | 64 (17.7) | 298 (82.3) | 0.01 |
| After | 122 (33.7) | 240 (66.3) | |

*Note*. Chi-square test

providing walking trails from 23.2% to 28.7% ($P<0.01$; Table 2).

## Discussion

Overall, agencies involved in the KP Active Living program effectively implemented the initiative, as evidenced by notable enhancements in most activities and facilities inside their workplaces. This indicates that the organizations support the Active Living program and that it is feasible to implement it in the workplace. In the effort to reduce the burden of NCDs, both the public and private agencies should collaborate in order to reinforce the measures that are currently in place.[13] However, the most crucial aspect in the successful execution of this program is the agencies' understanding and dedication to a healthy workplace that promotes the well-being of their workers.[14,15]

In terms of the Active Living activities program, the study revealed that the difference in the increment of Active Living activities before and after the program was moderate. The most significant increase was noted in "always conducted scheduling fitness activities" (27.9%), followed by "always carry out fitness activities" (18.2%), and "always promoting the use of stairs" (16.0%). Regarding providing Active Living facilities, there was a relatively small increase in the percentage of facilities provided before and after three years of implementation. There was only a 5.5% increase in the number of walking trails, and the Gym facilities/fitness corners saw only 5.0% increase. Further analysis revealed that government agencies demonstrated slightly higher engagement in Active Living activities and providing facilities compared to private agencies. This could be attributed to stronger policy mandates in public institutions.[12]

The current study on Active Living activities placed more attention on regular since workers who engage in physical activity regularly may develop new, healthier habits than those who engage in activities just occasionally or once.[16]

**Table 2.** Difference between Active Living before and after the program, by facilities

| Facilities | Frequency (%) | | *P* |
|---|---|---|---|
| | Yes | No | |
| 1. Agency provide Gym facilities / fitness corners to employees? | | | |
| Before | 78 (21.5) | 284(78.5) | 0.01 |
| After | 96 (26.5) | 266 (73.5) | |
| 2. Agency provide walking trails? | 84 (23.2) | 278 (76.8) | |
| Before | 104 (28.7) | 258 (71.3) | 0.01 |
| After | | | |

*Note*. Chi-square test

When compared to workers who lead a healthy lifestyle, those who engage in unhealthy behaviours at work are less productive, demonstrate poorer performance at work, and have a higher rate of absenteeism.[17] After three years of the Active Living program being implemented at the agencies, Most activities and facilities in the participating agencies still fall short of expectations due to the moderate improvements achieved.

The reasons for moderate increments could be due to a few factors, including the following: commitment and support from management, worker participation, full technical and service support from the agencies, and incentive mechanisms, all of which are necessary components for effective intervention strategies of the program.[18,19] Another study on the barriers to implementing workplace health promotion programs, from an employer's perspective, identified the main issue as a lack of management support. Employers frequently do not feel the responsibility to improve their workers' health because they believe that workers should be responsible for their health.[20] Issue that is specific to agencies is that employers are hesitant to spend on workplace health facilities, the majority of which tend to be small, and there is currently limited evidence that the facilities supplied are helpful, although the expense is immediate.[21,22] In addition, according to the some studies that has been conducted, the success of this workplace health program is also impacted by a lack of human resources, experience, and focus on other issues.[20,23,24]

There are some limitations to the study that should be considered when interpreting the findings. Firstly, reporting mistakes may arise since Active Living activities were self-reported by respondents, as there was no trained interviewer available to ensure the accuracy of data entry. Second, the cross-sectional data's nature makes it impossible to show a causal relationship. Finally, the study focused on Coordinating Committee members as respondents due to their familiarity with the program and this approach may introduce a positive bias, as their perspectives might differ from those of the broader workforce. Despite these limitations, our findings are the first to determine the prevalence of Active Living

practices among KP agencies. In addition, the study also provided important baseline data for policy development and tailoring interventions for government and private agencies in the country.

## Conclusion

Despite considerable improvements in KP Active Living in agencies that adopted this program, the increase remains moderate and there is still room for improvement. Broader advocacy, resource allocation, and innovative strategies are essential for scaling and sustaining this initiative nationwide. Future research should evaluate long-term impacts on worker health and organizational productivity to strengthen the evidence base for such interventions.

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### Authors' Contribution

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### Competing Interests

The authors disclose that they have no competing interests.

### Consent for Publication

All respondents permitted publication, provided anonymity was ensured.

### Ethical Approval

This study protocol was approved by the Medical and Research Ethics Committee (MREC), Malaysian Ministry of Health (NMRR-18-3965-40445). Prior to the study, approval was obtained from all of the government, and private agencies involved. Each respondent received all the details of the study and provided informed consent. The study was performed in line with the principles of the Helsinki Declaration.

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