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Telework:
Managing Safety and Health from Macroergonomics approaches


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Executive Director's Note

Assalamualaikum W. B. T.

In September, our publishing team decided to share several resources on ergonomics specifically on key issues that have baffled the workforce that are affecting the traditional work settings globally during and after the COVID-19 pandemic. In the past months, the Social Security Organisation (Socso) reported that RM15.41 million was paid in compensation to 1,504 employees who suffered injuries while working from home, under the Employment Injury Scheme and Invalidity Scheme. The report stated that "Work from Home" has aggravated the severity of ergonomic issues since the work settings and work environment have been changed. Ergonomic issues are not new to some industries, especially for those involved in manufacturing, agriculture, forestry, fishery, or even for domestic workers from the service industry.

In NIOSH, we have established the Ergonomics Excellence Centre (EEC) in Johor Bahru that is supporting ergonomics research and providing solutions.

As for Indoor Air Quality (IAQ), we have another article after the introduction of the disciplines of our last edition. For this edition, the authors tell us about the relevance of IAQ and COVID-19. Technically, the public still lacks knowledge on this topic, and the Department of Occupational Safety and Health also recently published a Guide to Ventilation and Indoor Air Quality during the COVID-19 pandemic. We should all pay more attention to work areas, housing, and ventilation of buildings which have resulted in a high risk of transmission of the virus. Poor ventilation and confined spaces must take into account the working environment, temperature, and humidity which are the contributing factors of transmission, especially in public places with a high density of crowds.

Some of us like to say," We all know how to do our jobs, and we always select the most comfortable atmosphere that we prefer the most" but yet has anyone ever really taught us how to work with good ergonomics. I hereby wish the reader to enjoy reading.

"You cannot understand good design if you do not understand people; design is made for people." Dieter Rams

Haji Ayop Salleh
Executive Director
NIOSH

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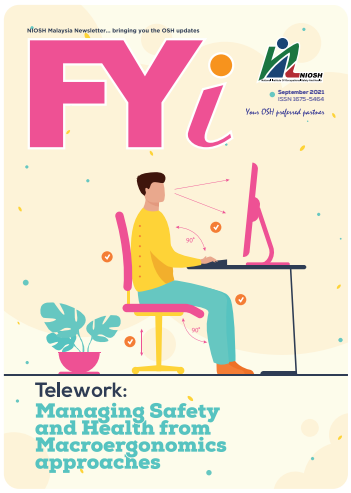

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Info

Telework: Managing Safety and Health from Macroergonomics approaches

Article written by:
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Ergonomics Excellence Centre (EEC) NIOSH

Overview:

We are facing a 'New Normal' working arrangement during this generation due to evolving the pandemic COVID-19 since early 2020. Undoubtedly, COVID-19 has given rapid changes to the nature of the working systems around the globe. The Malaysia Government's initiative to implement a series of Movement Control Order (MCO) starting in March 2020 has drastically contributed to the current new norms working system. As the lockdown, quarantine, and restriction of movement order continuously forced the entire nation to stay at home, many industries enforced a new system to work from home. This system had impacted adversely the workers who are unprepared and unfamiliar to adopt these new norms of work mode.

What is Telework?

Telework is defined as working for an employer outside the employer's premises or at any alternative work location such as the home using information and communications technologies such as smartphones, tablets, laptops, and desktop computers [1]. Telework is also called telecommuting, working from home, remote working, or distance working.

Under the current pandemic COVID-19 scenarios, teleworking has proven itself as one of the control measures to control the spreading of the virus among workers and ensure business continuity for stakeholders. Teleworking offers freedom to work from an alternative location subjected to management approval. Its implementation shows great benefits including offers time flexibility, reduced commuting time, long distance travelling and stress in traffic, reduced displacement and exposure to environmental pollution, and an opportunity for better work-life balance [2]. However, there are various risk involved, such as isolation, comfort, conflict between work and family life, lack of support and contact with colleagues, time management, overwork, stress, limitation of resources, and technical support, which is essential to anticipate and prevent. Table 1 encapsulates the benefits and the disadvantages of telework both for the company and employees.

Risk and injuries amongst teleworkers

Many employees work from home with limited setup or workstations, and some of them set up the workstation without adequate ergonomics consideration. These situations may have a physical and mental impact on the workers. This limitation will expose employees to several health issues and ergonomics risk factors that lead to musculoskeletal disorder (MSD).

Previous studies have shown that inadequate home space and the adoption of inappropriate posture for a long time as significant issues experienced by teleworkers. Some of them report complaints on the prevalence of a higher incidence of work-related discomforts like muscle sprain, sores, tired eyes, pain in the neck and wrists region. The Social Security Organisation (SOCSO) had paid RM 15.41 million in compensation to 1,504 employees who experienced injuries while working from home until May 2021. The common injuries reported include skeletal injury due to falling from high places, injuries caused by collision with an object, muscle strains and passing out [**3**].

Company		Employees	
Advantages	Disadvantages	Advantages	Disadvantages
Greater organisational flexibility	Obstruction of direct communication and response	Reduction of commuting time to workplace	Less visibility in career advancement and opportunities
Reduction of operational cost of properties	Higher expenses for telecommunications equipment, programs and training	Work according to own availability and rhythms	Self-isolation and lack of external relational life
Increase employee motivation	Reorganisation of business culture and work system	More free time for work-life balance	Invasion of the private space for a workstation
Increase productivity	An issue in managing remote workers	Free choice of where to work	Unsecured safety, health, comfort and work standards

Table 1: Benefits and disadvantages of telework for the company and employees

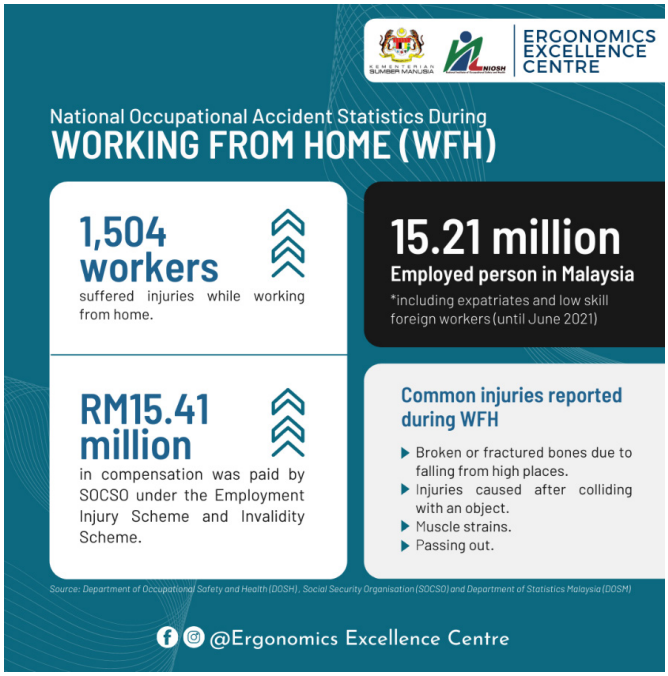

Figure 1: Infographic on Occupational Injury from Work from Home by SOCSO

Telework practices are used typically for a short time and limited periods in a week [**4**], but in current pandemic COVID19 scenarios, many workforces are being instructed to telework full-time to prevent the spread of the coronavirus. The previous study on teleworking has revealed that employees experienced difficulties managing their work-life balance and tended to work extra hours than expected. This issue is because of the reduced travel time to workplaces, replaced by telework activities, and conflict between office work and personal life. Those employees that have children or other dependants at home need to find additional time in their day to get the job done. These situations also lead to longer working hours during the day and sometimes involve the weekends [**5**].

Ergonomics, as adopted by International Ergonomics Association (EIA), is defined as the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data, and methods to design to optimise human wellbeing and overall system performance [**6**]. Generally, ergonomics or human factors (HF) has two main objectives: improving and maintaining the safety, health, and comfort of the human being on physical, cognitive, and psychosocial aspects. Secondly, to increase the organisation's performance such as efficiency, productivity, and quality. There are two ergonomics approaches available to achieve the objectives known as microergonomics and macroergonomics.

The microergonomics approach studies the interaction between machine and environment with the human, including design of the procedures, software, equipment, products, tools, and technologies used to perform tasks. The microergonomics approach mainly aims at physical risk factors such as analysing work or working posture, forecasting productivity, designing work tools, work physiology, work biomechanics, physical environment, anthropometry, time-motion analysis, and other external factors.

Meanwhile, macroergonomics is designing a working system that focuses on the organisation-system interaction, including the work organisation, types of jobs, the technology used, work roles, communication, and system feedback. Macroergonomics is also known as organisational ergonomics. This approach is more holistic, focus-driven, and proactive in preventing workplace injuries [**7**]. Furthermore, ergonomics also emphasises the fundamental understanding of people and their interactions and applications to improve these interactions. As the telework and microergonomics approaches continue to emerge, designing an effective work system using macroergonomics practices is crucial to achieving the remote working objectives and benefits.

Macroergonomics shares many of the principles of human factors and ergonomics at large. The fundamental principle of macroergonomics is:

- **A systems-oriented approach**: performance results from interactions in a socio-technical system, of which the person/human is one of the essential components within systems.

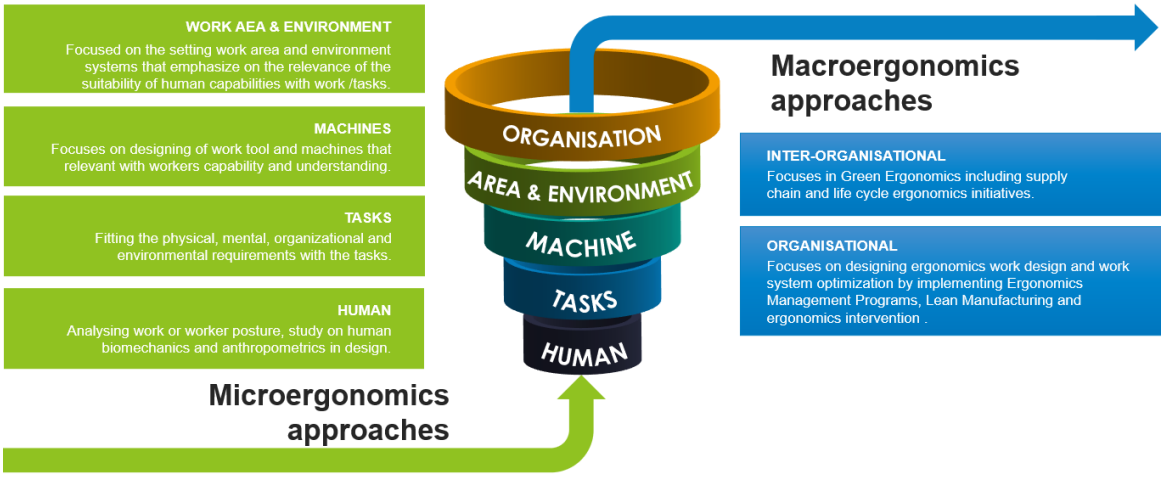

Figure 2: Microergonomics and Macroergonomics Interaction at workplace

- **It is design-driven**: Performance is improved by designing and redesigning work systems to accommodate and support human capabilities and activities without affecting organisational performance.

- **It has a dual goal of improving performance and wellbeing**: Outcomes to balance include productivity, efficiency, effectiveness, quality, innovativeness, flexibility, safety and security, reliability, sustainability, safety and health, satisfaction, pleasure, learning and increased personal development

The ultimate purpose of the macroergonomics approach is to create harmonised work system and compatible with organisational and socio-technical characteristics. The harmonised and compatible work system is seen in synergistic improvements in various organisational effectiveness criteria, including health, safety, comfort, productivity, quality of products and services, job satisfaction, and quality of work-life [**8**]. Within a working system, various components interact within an organisation to complete the need and demands. The human is considered as one of the components in this work system. The main intention for ergonomics to develop an ergonomics-design work system is to support human limitations and, at the same time to increase human capabilities [**9**] at both the micro-level as well as the macro- or system-level features that define the job and impact the worker.

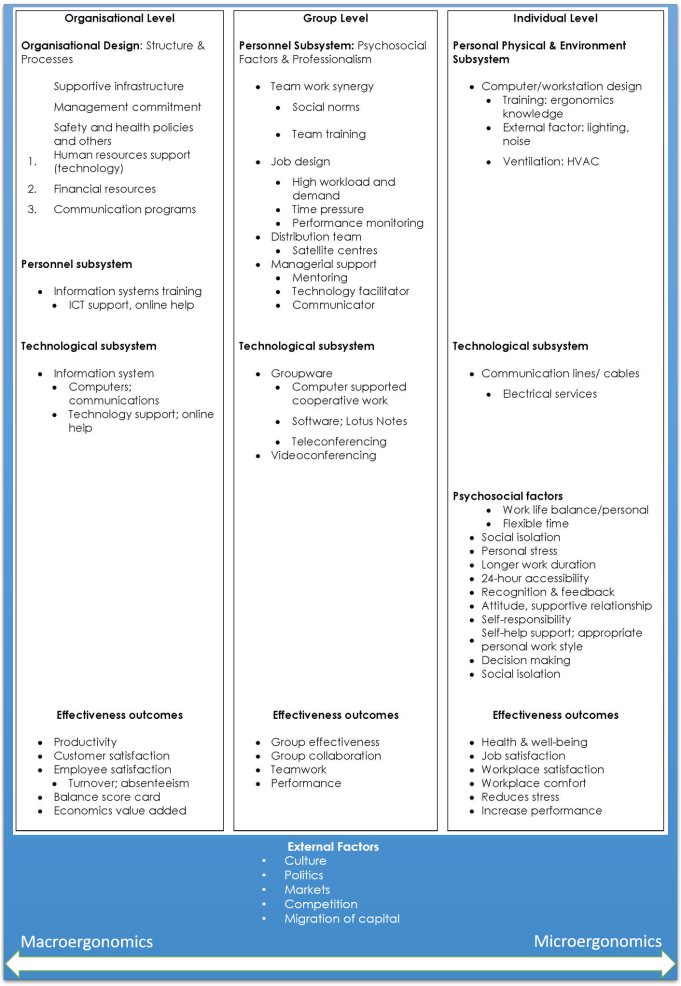

Figure 3: A macroergonomics model of teleworking

Macroergonomics framework for teleworker

Macroergonomics is a human-centred design approach that focuses on the relationship between human factors and organisation technology characteristics. Human socio-technical and psychological aspects of this human-centred design are considered in the designing process and overall work systems, including external environmental factors. Conceptually, the macroergonomics structure can be divided into three levels: organisational, group and individual (see Figure3). Within each level, the workers' socio-technical and psychological elements, including environmental factors, are identified and possible outcomes that will affect the teleworker. These proactive approaches will continuously monitor the performance of the workers within the work system.

Macroergonomics approach in managing safety and health of teleworkers

The main objectives for optimising the working environments is to eliminate the risk of injury, promote comfort workplace, reduce the injury cost and at the same time increase productivity and profit for the organisation. All those objectives need to be incorporated into the safety and health process using macroergonomics approaches. The macroergonomics approaches process involves various individuals, including top management representatives, human resources personnel, safety and health personnel, engineering and maintenance, and others, to identify pre-injury causes and post injuries element as prevention methods.

The obstacles for macroergonomics approaches to be successful are due to the limited involvement of the workers' to participate in the hazard communication related to injury and risk at workplaces. The organisation must establish a communication channel that will attract the participation of the teleworker to provide accurate and reliable data related to the injury while working at home, primarily associated with ergonomics risk factors and musculoskeletal injuries. Safety and Health personnel or Human Resources Department must be competent in conducting effective risk management concerning their teleworkers. The workers also need to understand any guidelines related to office ergonomics and other safety issues and hazards.

According to Robertson (2004), the organisation can implement three safety and health approaches to managing risk associated with teleworkers using macroergonomics strategies. The strategies are as follows:

1. **Empowering participatory ergonomics and employees self-reporting**: Human is one of the main elements in microergonomics and macroergonomics frameworks. Prompting early reporting of risk and work-related injuries by employees is crucial for the risk management and prevention process. This process needs participation from all managerial levels and employees using proper communication platforms. Organisations may provide Initiatives to encourage employee's participation and feedback to management on risk management issues. This approach is in line with the primary methodology of macroergonomics in participatory ergonomics approaches. Participatory ergonomics is an approach that involves employees at all organisational levels in the design and risk assessment process.

2. **Review of existing data:** All data related to a general risk assessment conducted, medical reports

and any reports related to injury from teleworking must be recorded and reviewed. Those data are valuable and can be used to projecting the possibility of occupational injuries related to teleworkers. The existing data can be collected from previous Job Safety Assessments, HIRARC documents, Health Risk Assessment, initial and advanced ergonomics risk assessment, body symptom survey, employees self-reporting checklist, and musculoskeletal/discomfort complaint forms.

3. Risk assessment and home survey: Employers may not know what hazards exist in the home environment unless the worker voluntarily offers the information. However, some employees do not possess adequate skills to conduct self-assessment. The organisation can conduct a risk assessment using a simplified risk assessment checklist or survey form that is understandable for every level of workers within the organisation. The employees may use teleconference tools if they are facing difficulties to conduct self-assessment.

Other ergonomics considerations for teleworkers

Physical and environmental criteria are two main factors that are crucial when developing a home office workstation. Teleworkers need to have a dedicated workstation that is specifically designed for office or work-related tasks. That dedicated workstation should be private and isolated from any interference, especially from the flow of home activity. The design and location of the workstation must be adequate to accommodate work tasks, work-related equipment and furniture. Even though the environmental condition at home is not fully designated for a working situation, teleworkers are encouraged to ensure good lighting, temperature, humidity, and ventilation are adequate while working at a dedicated workspace.

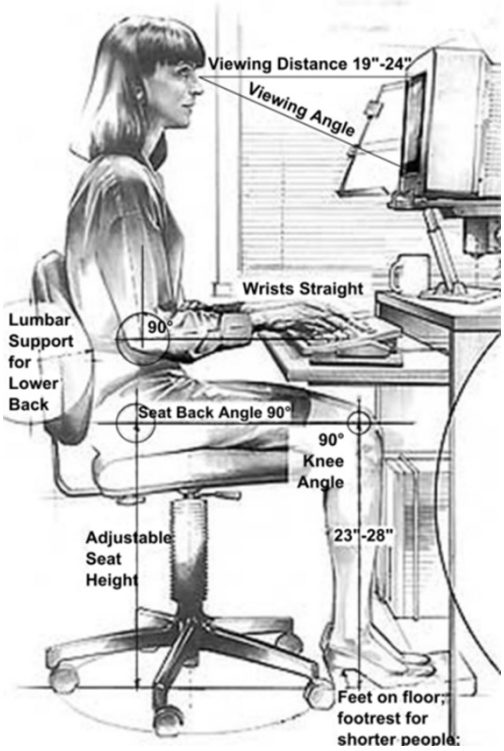

Figure 4 Office workstation consideration

The selection of furniture and fittings is also vital to ensure teleworkers work in a comfortable environment. Teleworkers are encouraged to put some budget to purchase ergonomic chairs and adjustable tables. Selection of ergonomics chair and adjustable workstation provide adjustability for teleworkers to maintain in neutral working posture. Teleworkers need to adjust the height of the monitor and chair to keep in a neutral posture, and the recommended monitor height is in line with eye height. Sit up straight with head upright, shoulders relaxed, forearms horizontal, feet flat and back supported. Worksurface, keyboard and mouse height should be approximately within elbow height. For teleworkers that use a laptop or external monitor, an external keyboard, mouse and docking system should be provided.

Teleworkers need to implement smart workstation arrangements to reduce any unproductive movement while working from home. Try to keep frequently-used devices (keyboard, mouse and phone) within the primary work zone to limit reaching and ensure that your arms remain close to your body. It is recommended for all teleworkers to attend training on correctly set up and adjust workstations to obtain various comfortable computing postures and how to vary the working poses throughout the day. Informative and resourceful guidelines related to occupational and health on sitting and standing at the workplace, working with a visual display unit (VDU), and safe working in the office can be accessed on the DOSH website under the Ergonomics section. Lastly, do not forget to promote active working posture by alternating the working posture between sitting and standing, pausing briefly every 20 minutes to rest muscles and increase blood circulation.

Closing

Telework will likely be a new direction for a large part of the working population and exposing the workers to unique challenges and opportunities regarding their work style and workplace arrangement. Some organisations will likely continue the home offices initiative to reduce the potential of widespread COVID-19 infection within the workplace, resulting in the workers continuously work from home. To have a successful teleworkers program, organisations need to design and implement a system-oriented such as macroergonomics approaches.

Future studies should be conducted to empirically explore the possible requirements and effects of remote working culture within pandemic COVID-19. Research findings can be used to propose virtual ergonomics intervention programs, such as virtual risk assessment, digital health monitoring systems, and empowering participatory ergonomics involvement by employees on teleworkers' safety, health, and comfort. As the working from home initiative becomes optional for some workers, the organisation will provide proper infrastructure concerning the ergonomics home office. Otherwise, the widespread occupational injuries and discomfort will progress into more calamitous conditions such as musculoskeletal disorders. Lastly will have a direct and indirect impact on the organisations.

About the author

Noorul Azreen b Azis is an ergonomics enthusiast and Executive cum Technical Officer at Human Ergonomics Assessment Laboratory (HEAL), Ergonomics Excellence Centre (EEC), NIOSH Southern Regional Office (Johor). Interest in statistics, research on physical ergonomics, biomechanics and cognitive ergonomics. He was graduated from Universiti Teknologi Malaysia with a degree in Biological Science and a Master's degree in Safety, Health & Environment.

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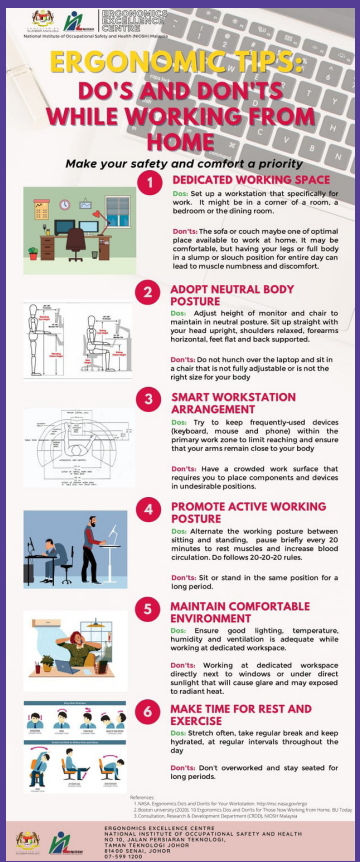


Info

COVID-19 Dan Kualiti Udara Dalaman Di Tempat Kerja?

Article written by:
Ts. Nor Mohd Razif Noraini / Hazwan Adli Hamdan

Dunia dan Malaysia telah lama di dalam fasa pandemik COVID-19 dan kita masih lagi dalam fasa untuk melawan virus yang tidak dapat dilihat ini. Disini kita akan kupaskan lebih lanjut apa kaitan Kualiti Udara Dalaman atau Indoor Air Quality (IAQ) dengan COVID-19.

Seperti mana yang kita tahu dan dengar, COVID-19 adalah penyakit pernafasan yang disebabkan oleh virus SARS CoV-2. Virus ini tersebar daripada orang yang dijangkiti kepada orang lain. Virus ini mudah tersebar melalui titisan pernafasan ketika orang yang dijangkiti itu bernafas, batuk, bersin dan bercakap. COVID-19 juga dapat disebarkan melalui virus aerosol di udara dalam keadaan tertentu seperti kawasan tertutup dengan pengudaraan yang kurang baik. Dalam sekatan pergerakan yang dilakukan oleh kerajaan Malaysia pada masa ini, masyarakat umumnya banyak menghabiskan masa di ruangan dalaman.

Ruangan dalaman yang dimaksudkan adalah suatu tempat tertutup yang mana kita menghabiskan masa kira-kira beberapa ketika atau lebih. Ia boleh jadi dalam pejabat, kedai atau pasaraya, pantri pejabat, dewan, hospital, rumah ibadat, dalam kenderaan persendirian mahupun awam atau bangunan sementara seperti pusat pemberian vaksin (PPV). Mesti kita masih tertanya-tanya apa kaitannya Kualiti Udara Dalaman dengan COVID-19?

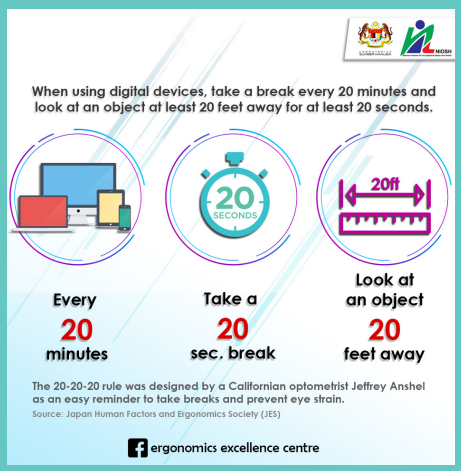
Seperti mana yang telah dimaklumkan oleh Ketua Pengarah Kementerian Kesihatan Malaysia Tan Sri Dr. Noor Hisham Abdullah baru-baru ini virus SARS CoV-2 dengan varian yang baharu boleh tersebar melalui udara dengan cepat. Terdapat juga beberapa kajian di dunia merekodkan penemuan terbaharu COVID-19 beserta varian baharu yang lebih merbahaya boleh merebak melalui bawaan udara dan dapatan ini diperkukuhkan lagi oleh Pertubuhan Kesihatan Dunia (WHO) yang menyatakan *'airborne precaution'* untuk keadaan dan tetapan di mana prosedur penjanaan aerosol dan rawatan sokongan dilakukan seperti di ruang kerja dan fasiliti kesihatan (Ruj: WHO reference number: WHO/2019-nCoV/Sci_Brief/Transmission_modes/2020.2). Namun demikian, masih tidak ada bukti yang kukuh untuk menunjukkan bahawa SARS CoV-2 boleh menular melalui sistem pengudaraan walaupun RNA virus pernah dijumpai dalam sistem pengudaraan tetapi ianya tidak menunjukkan kaedah sebenar penularan virus berkenaan. Walaubagaimanapun dapatan virus SARS CoV-2 dalam bawaan udara tidak boleh diabaikan dan langkah menekankan kefungsian sistem pengudaraan bekerja secara optimum adalah perlu diutamakan. Seterusnya dengan sistem pengudaraan yang baik dapat menjamin Kualiti Udara Dalaman yang baik serta risiko untuk sebaran virus SARS CoV-2 di kawasan tertutup ini dapat dikurangkan. Hal ini secara tidak langsung menguatkan lagi sokongan terhadap dapatan statistik semasa kes COVID-19 di Malaysia yang cenderung kepada kluster tempat kerja berikutan keadaan bangunan yang sesak. Kadar kebolehjangkitan yang tinggi ini direkodkan oleh industri perkilangan dan pembinaan yang semestinya melibatkan ramai pekerja dalam sesebuah tempat.

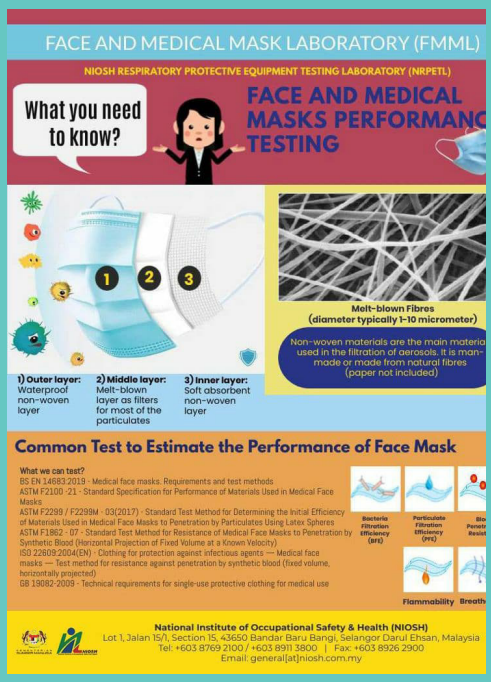
Penguatkuasaan dan serbuan ke tempat kerja yang dibuat oleh penguatkuasa terlibat seperti pihak Kementerian Perdagangan Antarabangsa dan Industri (MITI), Kementerian Kesihatan Malaysia (KKM), Kementerian Sumber Manusia (KSM), Kementerian Dalam Negeri (KDN) dan lain-lain kementerian dan agensi yang dijalankan mendapati punca utama penularan jangkitan di antara pekerja ini adalah disebabkan ruang kerja yang terhad dan sempit yang juga menjadikan pekerja sukar mengamalkan Prosedur Standard Operasi (SOP) disarankan seperti amalan penjarakan fizikal melebihi 1-2 meter. Oleh yang demikian akan berlaku sentuhan di antara pekerja dengan pembawa COVID-19 yang tidak diketahui. Kemudahan hostel, asrama dan rumah kongsi yang tidak mematuhi standard dengan pengudaraan bangunan yang tidak baik menjadi faktor tambahan penyumbang jangkitan harian yang tinggi. Situasi ini menyebabkan udara tercemar seperti virus COVID-19 boleh terampai di udara dalam satu jangka masa yang lama dan juga tersebar luas sehingga lebih 6 meter jauh seperti yang dinyatakan dalam kajian-kajian terbaru. Disebabkan pengudaran yang kurang baik dalam ruang tertutup, hal ini menjadikan kepekatan kandungan virus tinggi di udara dan lebih membimbangkan jika suhu persekitaran, kadar kelembapan dan zarahan halus yang terampai yang tinggi menjadikan virus ini boleh kekal aktif dan tersebar luas ke keseluruhan ruang yang dihuni bersama oleh pekerja.

Memandang serius perkara ini, Pertubuhan Kesihatan Dunia (WHO) telah menerbitkan satu rujukan bagi teknik pengudaraan berkesan pada bulan Mac 2021 yang bertajuk *'Roadmap to improve and ensure good indoor ventilation in the context of COVID-19'* untuk kegunaan tiga kategori bangunan termasuk fasiliti kesihatan, bangunan kediaman dan bukan bangunan kediaman. Jabatan Keselamatan dan Kesihatan Pekerjaan (JKKP) baru-baru ini juga telah mengeluarkan Panduan Pengudaraan dan Kualiti Udara Dalaman Semasa Pandemik Covid-19. Panduan ini amat penting dalam memastikan aspek penambahbaikan dari segi sistem pengudaraan dan Kualiti Udara Dalaman di ruangan dalaman dapat mengurangkan risiko penularan COVID-19 melalui sebaran udara. Kesimpulannya, Kualiti Udara Dalaman dan COVID-19 amatlah berkait rapat dalam menangani isu penyebaran melalui udara. Dengan harapan dengan adanya panduan ini dapat mengurangkan risiko penularan di udara dalam ruangan dalaman.

Tidak hanya sekadar dengan mematuhi prosedur operasi standard (SOP) yang telah ditetapkan oleh Majlis Keselamatan Negara (MKN) seperti memakai pelitup muka, menjaga penjarakan fizikal dan kerap membasuh tangan, golongan pekerja juga berisiko dijangkiti virus jika terdedah dalam ruangan yang tiada pengaliran udara yang baik. Penggunaan pengudaraan semulajadi (natural ventilation) sekiranya bersesuaian merupakan cara yang paling berkesan dan kos efektif bagi mengurangkan kepekatan virus di udara. Virus SARS Cov-2 merebak dengan lebih mudah dalam bangunan berbanding dengan luar bangunan kerana kepekatan zarah virus adalah lebih tinggi di dalam bangunan disebabkan oleh pengudaraan yang terhad ataupun kurang pengudaraan untuk menggerakkan virus bagi tujuan mengurangkan kepekatan virus di udara. Oleh itu adalah penting untuk memastikan pengudaraan yang ada boleh membantu mengurangkan kepekatan virus dalam persekitaran bangunan.

Oleh kerana masih terdapat potensi penularan virus SARS CoV-2 melalui udara, pendedahan kepada virus udara harus dikawal di tempat berhawa dingin dan ruang tertutup. Penambahbaikan operasi bangunan termasuk sistem pengalihudaraan mekanikal dan penyaman udara akan dapat mengurangkan pendedahan di udara.





8th ASEAN-OSHNET Conference Theme: "Work From Home"

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The outbreak of COVID-19 has forced a large segment of the workforce around the world to Work From Home (WFH) on a scale never experienced before. WFH is nothing new to some of us but the coronavirus pandemic has given the economic sectors and almost all industry players around the world in experiencing the change, a transition whereby most of us may not have otherwise considered working from home an option for staff, practical insight into how it affects the business operations, employees and operation cultures. It has enabled most employers in all countries to have first-hand experience to stream into the benefits, challenges, and impacts of home working, remote working, and even teleworking revolutions. These experiences can be very beneficial in feeding into the future direction of employees' working practices moving forward even after the pandemic has sparked a revolution in the WFH scenario.

The Ministry of Human Resources (KSM) through the Department of Occupational Safety and Health (DOSH) has been appointed recently as the ASEAN Occupational Safety and Health Network (ASEAN-OSHNET) chairman for the year 2021-2022. In conjunction with the appointment, the 22nd ASEAN-OSHNET Coordinating Board Meeting (22nd CBM) was held on the 24th of August 2021 and in the new norm, whereas the 8th ASEAN-OSHNET Conference (8th AOC) was hosted by Malaysia on the day after. The Board has opted for the theme for "Work from Home" and ASEAN countries have participated in the lobby with the subject "strengthening the Labour Inspection Mechanism for the Effective OSH inspection Post COVID-19 Pandemic" to share expertise, different viewpoints, and national strategic plans from the respective country. The event was chaired by Ir. Zailee Bin Dollah, Director General of Department of Occupational Safety and Health (DOSH) Malaysia along with two honorable core speakers Dr. Yuka Ujita, Senior Occupational Safety and Health Specialist, International Labour Organization (ILO), and Er. Ho Siong Hin, President of the International Association of Labour Inspection, International Association of Labour Inspection (IALI) were invited to the conference.

This conference is conducted by the ASEAN OSHnet Board in providing a platform for exchanging and sharing technical inputs on information and innovations concerning Occupational Safety and Health among the ASEAN OSH members. The conference this year focuses on issues of Work from Home due to the consequence of the pandemic of COVID-19. The global pandemic has impacted the numbers of workers as most of us are facing difficulties to continue the working life as usual. Employers shall adapt to new work settings and develop integration with control measures to support workers in preventing any harm caused by the impacts of the pandemic. The general policy in many countries has allowed workers to work from home to control the rapid transmission, but the majority of the countries did not mandate the policy rather it is an open policy with options depending on the severity level and threats to the country. It is both the employer and employee's cooperation to develop new patterns of work settings to keep workers maintaining the fitness to work. However, WFH may not be the only solution, the situation has led to a new structure for workers to decide and prepare suitable and sufficient resources as if information and guidelines were laid and distributed. Certainly, several issues have arisen in the transformation period such as inadequate knowledge and skills for workers to operate, lacking infrastructures facilities, i.e. internet connection, or network communication, and at certain contexts whereby working environment from home is perceived as not suitable for work. These problems may cause several issues and impacts, especially on OSH.

Dr. Yuka revealed the compendium of WFH setting as the practices are not something new as ILO proposed many years ago to introduce the home base work settings to employees and employers as it brought many benefits such as reduces commuting times, provides greater autonomy and flexibility in work organization, creating a better work-life balance, increases motivation and reduces turnover, enhancing productivity and efficiency and also reducing carbon emissions. But, on the other side of the coin, there are challenges found associated with home base settings as not all jobs are suitable for WFH arrangements due to the lack of necessary infrastructures and technology systems. Nevertheless, as for the legal aspect, there is a lack of provision supports on privacy obligations, safety and health issues are affected thereafter, which provokes potential impacts on worker's living arrangements. Substantial, the OSH concerns are relevant to the work environment and ergonomics risks marked with working time arrangement, psychosocial risks, and sustaining work-life balance. Dr. Yuka stressed on the convention of the ILO has spelled out the employees were conducive to a policy set between employers and employees, but the actual scenarios have reflected a certain degree of consent committed, workers had failed to achieve some of the expectations. As reported globally in 2020, 8.8 % of global working hours were lost relative to the 4th quarter of 2019, equivalent to 255 million full-time jobs. Dr. Yuka enunciated the definition of the workplace needs to be defined with specifications before the employer is held responsible for its employee's safety and health conditions. Apropos of the flexibility extended to employees for work settings other than the office, some actions should be taken into consideration to encounter psychological problems that are yet to be resolved.

One of the demerits that draw accents is on work time arrangements. In reality, the WFH settings have caused most of the employees to prolong their working hours, and this could be due to the flexibility and intervention on work schedules. As emphasized, significantly, employees are working more hours while working from home with fewer breaks. In terms of safety and health, WHO/ILO joint estimates on the health outcome of long working hours and tracked down 745,000 people who died from cardiovascular disease due to extended working hours. The impacts of psychosocial risk and work-related stress on the world of work are significant as most of all other countries are experiencing the same dilemmas. Employees sought mental health and resilience resources. These impacts evolved to psychological responses such as depression, burnout, and suicidal thoughts, physical reactions including musculoskeletal disorder (MSD), digestive problems, body aches, and joint pain, increase risk of work injuries/accidents impacted on workplace productivity as the work environment changes lead to absenteeism and presenteeism increases, low job engagement and affecting job performance. Several measures could be applied to prevent and control psychological risk, it includes increasing the susceptibility to adapting to the hazards and risk encountered by enterprises, taking into account constant review and modification of the condition regularly, complying with national law and regulations, considering the current state of knowledge and to be adopted in consultation with workers and their representatives. At the end of the presentation, Dr. Yuka suggested areas for actions to overcome these barriers. The determinants should attend to encompassing the environment and equipment, looking at workload, workspace and work schedule, prevent violence and harassment issues, retain work-life balance, job security level, strengthens management leadership and controls, enhance communication effectiveness, proactively involved in the dissemination of information and training activities, encourage health promotion and prevention upon negative influential behaviors, last but not least the improve social and psychological support leading us through revolutions.

During the second session, the president of International Association of Labour Inspection (IALI) Er. Ho Siang Hin shared some of the practices, issues, and findings concerning WFH that highlighted the findings raised during the webinar and ILO's publication on the role of inspection in a pandemic environment. As explained, the two most commonly recognized challenges are psychosocial risks and ergonomics. During his presentation, he explained the distinctive challenges in managing the risks are highly dependent on the public health authorities and employers that acquire knowledge from OSH specialists (IL) in translating public health prevention policies into the workplace. He expressed the need to use well-established OSH principles such as workplace based risk assessment and the hierarchy of control in managing risks and labour inspections would be the solution platforms to assist employers, employees, and social partners in achieving the goal.

IALI President Er. Ho suggested implementing risk assessment strategies and measures of control but labour inspection is faced with a great barrier as there is a lack of a clear boundary to safeguard the assessment, especially when lacking strong supports on the legislative provision on WFH context. As elucidated, taking the Western countries as an example, the psychosocial risks and ergonomics issues are difficult to be assessed when the barriers are hooked into situations whereby the house of rules are not spelled out, and there is no standardization for changing of work environments. As an example, the feasible work hours and availability rules, percentage distribution of the day on face to face and teleworking are far beyond control as there are no specific standards that could be generalized for all types of work and measuring parameters varies as working condition differs. Moreover, the means of control carried out by the employer or even data protection instructions could be beyond control. Another example was highlighted in Germany, although there is a legal obligation that can be enforced by the labour inspectors, however, the inspectors are not authorized to check the ergonomics. There were too many interventions and barriers that became issues for IL to carry out inspection activities on WFH. To one side, there are several findings and lessons learned shared by the IALI president. The innovation shared by the Japanese is using the Artificial Intelligence (AI) avatar robots. He further described how remote workers can view their office and communicate with their colleagues through using the rough 20 cm tall robots, with a built in camera, microphone, and speakers, coupled with the "teleworking" application that worked on a phone or iPad. It can be operated remotely by the teleworker and can be carried around by staff in the office, and can even attend meetings on behalf of remote employees. The artificial intelligence application is also possible to operate its hands and head, even using non verbal communication with various gestures from applause to greetings. Before ending his speech, he also described the role of labour inspection in times of the COVID-19 pandemic and the challenges of traditional IL policies, activities, functions, and forms of action, powers, and purpose including WFH. He concluded his speech by indicating the need to apply and use the well established OSH principles such as workplace based risk assessments and the "hierarchy of control" and assess revision, especially on common risk on psychosocial risk and ergonomics. As we are gradually moving towards the WFH revolution, there is a need to rethink how work shall be organized as every role needs to be considered for its compatibility with teleworking, and when designing new roles, teleworking needs to be embedded in the design process. Organizations need to invest in the materials and processes required for effective teleworking to ensure that the highest possible quality of teleworking is available to workers.

In Cambodia, the government has identified jobs that are suitable for WFH arrangements by segregating industries into sectors. The industries are categorized into appropriate sectors and inappropriate sectors depending on the nature of business. WFH is not specifically regulated under the labour law. In general, in the labour law, employers must provide a safe and healthy working environment for the workers. A proper policy and guideline on WFH workplaces with the agreement from the manager and workers concerned are required to be established to protect the workers during the COVID-19 pandemic while the rights and responsibilities of employers and workers are dependent on consent. The country has set WFH as a temporary measure to respond to the COVID-19 outbreak in the workplaces. Workers are obliged to resume normal working arrangements when the situation permits and as directed by employers.

In Indonesia, the government leveled the restriction to control the pandemic by grouping the industries into essential sectors, critical sectors, non essential and non critical sectors. There are four levels to assess the severity of the pandemic outbreaks and rules are developed to determine the percentage of workers that should remain active in supporting the business activities. The country has imposed strict implementation of health protocols in the essential sector and critical sector. The government is tentative about the arrangement of working hours, restriction on the capacity of workers, periodic testing on COVID-19, and optimizing vaccination for workers. There are restrictions on work activity in the non essential and non critical sector to obliged 100% WFH.

In Malaysia, the government has introduced the restriction of movement control ordered (MCO) since 18 March 2020. MCO is a series of national quarantine and cordon sanitaire measures

implemented by the federal government of Malaysia in response to the pandemic. The government has implemented measures ranging from physical distancing, restrictions on the freedom of movement, and the closure of non essential companies. WFH is a shared responsibility and commitment by both the employers and workers to ensure business continuity and sustain employment. The country believed that WFH could bring in benefits including less commute stress, better worklife balance, improved inclusivity, and money savings. The changing of WFH revolutions could also create positive environmental impacts as customizable offices could impact sustainability and create a happier, healthier work life. WFH has been prepared by taking into account areas and determinants for the environment changing process and these include screening tasks that can be done off-site, substituting virtual platforms for connectivity assessment, infrastructure assessment on the availability of technology systems and innovations, safety and health assessment on the domestic environment and actual ability to perform WFH and mental health assessment to measure risk on psychosocial impacts. The country has also developed a policy to define the expectations, responsibilities, eligibility, and other WFH guidelines to support the transition phase. The policy has described both the employer and employees' responsibility with clear distinctions. One of the greatest challenges identified by the Malaysians is Indoor Air Quality (IAQ). Malaysia has developed guidelines to support Ventilation and Indoor Air Quality (IAQ) for Residential settings, public areas, and also for healthcare facilities to support combating the pandemic. Malaysia has indicated that the WFH arrangements implemented by employers due to the COVID-19 response are temporary. However, workers are obliged to resume normal working arrangements when the situation permits and as directed by employers. As further explained, employers intend to access the benefits and challenges of WFH during the pandemic on a case by case basis, and these cases will require consultations from workers and the labour union.

In the Philippines, a survey on Work from Home during the Community Quarantine has been carried out from 27th April to 23rd May 2021 by the Department of Labour and Employment. The study has involved 276 companies (respondents) with a 72% response rate from the sample size of 384 companies based on 469,054 registered established with NCR Plus. Based on the studies, 276 companies are categorized into four groups and the groupings are categorized according to the group size of employees. The scale of grouping is based on 42 micro enterprises (less than 10 employees), 142 enterprises (10-99 employees), 30 medium enterprises (100-199 employees), and 62 large enterprises (200 or more employees) within 12 multi-locations. The top respondent industries are comprised of Transportation & Storage, Logistics, Education/ Training Institutions/ Manufacturing, and BPO. Out of 118,950 employees, 61,472 are male and 57,478 are females. The findings have projected that 9 designated positions are more susceptible and adaptable to telecommute settings based on job family/ functions. This business role includes those in the position of executives, managers, supervisors, professional/ technical, technicians, salesforce, other field personnel, office and clerical employees, and craftsmen and operatives from respective industries. As suggested, job family and functional areas can be used as criteria of the employers to determine the eligibility of employees to telecommute. Before concluding the speech, the Philippines stated that the survey could be presented to stakeholders in determining the appropriate percentage of employees that are eligible for telecommuting.

There are many more areas of and study as shared by the ASEAN members on WFH. Each country has applied strategies that fit the country's environment and economic behavior. The discussions are touch based on the social, economic, safety and health, and labour aspects of the WFH revolutions. The lobby sessions have successfully brought in innovative ideas and new ways of supporting improvements because there are too many elements that require exploration, especially for safety and health. The ASEAN OSHnet and its member's commitment has provided impetus energy and made the conference an interactive and lively sharing platform. We are expecting there are more sessions to be organized and conducted soon on subjects that are commonly shared by the ASEAN countries.

Readers may refer to the youtube video to know more about Brunei, Laos, Myanmar, Singapore, Thailand, and Vietnam.

YouTube: https://www.youtube.com/watch?v=RhUCw11x5Xs

Aktiviti-Aktiviti Sepanjang Bulan Sept 2021

06/09

07/09

09/09

11/09

NIOSH's involvement in IOHA 2021 was via e-poster presentation by two (2) technical officers.

1. Mr. Baderin Osman - Evaluation of Particle Penetration and Breathing Resistance for Doubling Masking
2. Ts. Shahrulnizam Jamen - Evaluation of A Slitter Bag Table Prototype to Reduce Hydrated Lime Dust During Manual Dosing: A Case Study at Water Treatment Plant in Johor, Malaysia

13/09

14/09

30/09

30/09

29/09

28/09

23/09

22/09

21/09

14/09

21/09

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