TRANSLATION AND VALIDATION OF NIOSH WORKER'S WELL-BEING QUESTIONNAIRE AMONG HEALTHCARE WORKERS (WELLBQ)

by

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DECLARATION

I, Nionella bt Stephen Sampil, hereby confirm that the content presented in this thesis is my original work. Any information obtained from external sources has been duly acknowledged and cited within the thesis.

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LIST OF SYMBOLS

>	More than
<	Less than
=	Equal to
α	Alpha
β	Beta
%	Percentage
n	Frequency

LIST OF ABBREVIATIONS

AGFI   Adjusted Goodness of Fit Index

AVE   Average Variance Extracted

CFA   Confirmatory Factor Analysis

CFI   Comparative Fit Index

CI   Confidence Interval

CR   Composite Reliability

CVI   Content Validity Index

df   Degrees of freedom

FVI   Face Validity Index

GFI   Goodness of Fit Index

HCWs   Healthcare Workers

KPAS   Kesihatan Pekerjaan dan Alam Sekitar

NIOSH   National Institute Ocupational Safety and Health

OR   Odd Ratio

RMSEA   Root Mean Square of Error Approximation

TLI   Tucker Lewis Index

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ABSTRACT

TRANSLATION AND VALIDATION OF NIOSH WORKER'S WELL-BEING QUESTIONNAIRE (WellBQ)

Introduction: The measurement of a worker's well-being is multidimensional that includes the work life of a worker, mental and physical condition, positive feelings, negative feelings, workplace environment, and workplace safety outside of work life. As we progress toward developing nations and countries, the measurement of workers' well-being is increasingly being prioritized. NIOSH Worker's Well-being Questionnaire is developed to measure workers' well-being holistically. This study aims to establish the validity and reliability of this instrument before it can be used due to the cultural, language, and environmental differences between the Western and Eastern populations.

Objectives: To translate to Malay language and to determine the validity and reliability of the Malay version NIOSH Worker's Well-Being Questionnaire among healthcare workers in Hospital Universiti Sains Malaysia.

Methods: A cross-sectional study involving a web-based survey was employed among healthcare workers at Hospital Universiti Sains Malaysia, Kubang Kerian. The study involved Forward and Backward Translation of the NIOSH Worker Well-being Questionnaire (WellBQ) to Malay version with Content Validation and Face Validation, and Confirmatory Factor Analysis (CFA) to determine the construct validity. Participants were recruited using a random sampling method through a selection of emails to healthcare workers. Descriptive, confirmatory factor analysis was applied in the statistical analysis.

Results: Four expert panels were involved in content validation for the translation phase, and 30 medical officers were to rate the Face validation process. The CVI was calculated to be 0.92 for both S-CVI/Ave, and the FVI score was calculated to be 0.98, indicating that all items in the questionnaire are relevant to the domain, clear, and comprehensible. For the Confirmatory Factor Analysis phase, a total of 366 respondents participated in this study, the majority of the respondents being female (76%), Malay ethnicity (97.5%), between 30 to 44 years old (71%), works as nurses (52.7%) and holding education level of Diploma (63.9%) with permanent post (91.3%). The final measurement model of CFA had fit indices: CFI = 0.841, TLI = 0.834, RMSEA = 0.053, χ^2 / df = 2.008. The fit indices were within the acceptable range. The composite reliability ranged from 0.603 to 0.963.

Conclusion: The final model for Confirmatory Factor Analysis showed a reasonably acceptable model fit, valid and reliable after model revision of higher-order factors and after removing nine items. The translated Malay version of the NIOSH Worker's Well-being Questionnaire comprised 117 items across five domains/factors. The questionnaire is valid and reliable for healthcare workers in local settings.

Keywords: NIOSH Worker's Well-being Questionnaire (WellBQ), healthcare workers, translation, validity, reliability, Confirmatory Factor Analysis

ABSTRAK

TERJEMAHAN DAN PENGESAHSAHIHAN BORANG SOAL SELIDIK KESEJAHTERAAN PEKERJA (NIOSH WELLBQ)

Pengenalan: Pengukuran kesejahteraan pekerja adalah multidimensi yang merangkumi kehidupan kerja pekerja, keadaan mental dan fizikal, perasaan positif, perasaan negatif, persekitaran tempat kerja, dan keselamatan tempat kerja di luar kehidupan kerja. Pada era kita makin maju ke arah negara dan negara membangun, pengukuran kesejahteraan pekerja semakin diutamakan. Soal Selidik Kesejahteraan Pekerja NIOSH telah dihasilkan untuk mengukur kesejahteraan pekerja secara holistik. Kajian ini bertujuan untuk mewujudkan kesahihan dan kebolehpercayaan instrumen ini sebelum ia boleh digunakan disebabkan perbezaan budaya, bahasa, dan persekitaran antara populasi Barat dan Timur.

Objektif: Untuk menterjemah ke bahasa Melayu dan untuk menentukan kesahihan dan kebolehpercayaan Soal Selidik Kesejahteraan Pekerja NIOSH versi Bahasa Melayu dalam kalangan pekerja kesihatan di Hospital Universiti Sains Malaysia.

Kaedah: Kajian keratan rentas yang melibatkan tinjauan berasaskan atas talian telah dijalankan dalam kalangan pekerja penjagaan kesihatan di Hospital Universiti Sains Malaysia, Kubang Kerian. Kajian ini melalui Terjemahan Hadapan dan Belakang Soal Selidik Kesejahteraan Pekerja NIOSH (WellBQ) ke versi Bahasa Melayu dengan Pengesahan Kandungan dan Kesahan Muka, dan Analisis Faktor Pengukuhan (CFA) untuk menentukan kesahihan konstruk berdasarkan struktur dalaman model. Peserta telah dipilih menggunakan kaedah persampelan rawak melalui pilihan e-mel kepada

pekerja penjagaan kesihatan. Perihal deskriptif, dan CFA telah digunakan dalam analisis statistik.

Keputusan: Seramai empat panel pakar terlibat dalam pengesahan kandungan, dan 30 pegawai perubatan akan menilai proses pengesahan muka bagi fasa penterjemahan. CVI dikira menjadi 0.92 untuk kedua-dua S-CVI/Ave, dan skor FVI dikira menjadi 0.98, menunjukkan bahawa semua item dalam soal selidik adalah berkaitan dengan domain, jelas dan boleh difahami. Bagi fasa CFA, seramai 366 responden telah menyertai kajian ini, majoriti responden adalah perempuan (76%), etnik Melayu (97.5%), berumur antara 30 hingga 44 tahun (71%), bekerja sebagai jururawat. (52.7%) dan memegang peringkat pendidikan Diploma (63.9%) dengan jawatan tetap (91.3%). Model akhir CFA mempunyai indeks padanan: CFI = 0.841, TLI = 0.834, RMSEA = 0.053, $\chi 2$ / df = 2.008. Indeks padanan berada dalam nilai yang boleh diterima. Komposit kebolehpercayaan adalah antara 0.603 hingga 0.963.

Kesimpulan: Model akhir untuk CFA menunjukkan padan model yang boleh diterima, sahih dan bolehkepercayaan selepas semakan model bagi faktor peringkat tinggi dan selepas mengeluarkan sembilan item. Versi Bahasa Melayu Soal Selidik Kesejahteraan Pekerja NIOSH terdiri daripada 117 item yang merentasi lima domain/faktor. Soal selidik ini dianggap sahih dan boleh dipercayai untuk digunakan di kalangan pekerja kesihatan dalam tetapan tempatan.

Kata kunci: Soal Selidik Kesejahteraan Pekerja NIOSH (WellBQ), pekerja penjagaan kesihatan, terjemahan, kesahan, kebolehpercayaan, Analisis Faktor Pengesahan

CHAPTER 1

INTRODUCTION

1.1   Background

For workers to thrive and flourish in any organization, their well-being is fundamental to producing good quality service regardless of which area they are working on. Assessing the well-being of individuals is a crucial measure for enhancing their overall quality of life. The concepts of well-being are multidimensional and include the work life of a worker, mental well-being, physical conditions, positive feelings, negative feelings, workplace environment, workplace safety outside of work life, and cultures of the population. Various literature and studies were done through the years to measure these psychometric properties mentioned. Diener *et al.* conducted rigorous studies on measuring multiple aspects of well-being and showed measuring subjective well-being is possible using various scales. However, further studies are still needed to improve in terms of different designs of studies to analyze and investigate the significant issue of causality and differences between psychological well-being and subjective well-being (Diener, 2009b). His work has propelled other researchers toward finding those unanswered questions.

As we progress towards the future, well-being measurement among workers is increasingly being prioritized and further incorporated into occupational safety and health programs to enhance and achieve balanced occupational safety and worker well-being. A healthy, balanced, and lifelong worker's well-being benefits the individual worker, employers, and community (Tamers *et al.*, 2019).

By realizing the socioeconomic impact and health impact on healthcare workers in Malaysia, we need to prioritize healthcare worker well-being through a holistic approach, including integrated preventive and intervention strategies. In the United States, NIOSH's endeavor to establish a definition for the welfare of workers resulted in the conceptualization of the Total Worker Health Program (TWH). The TWH program provides backing for policies, programs, and practices that combine safeguarding against work-related and health-related risks, thereby promoting initiatives to prevent injuries and illnesses and enhance the overall well-being of workers (Tamers *et al.*, 2019). Multiple studies have produced reliable and valid questionnaires to measure the psychometric properties of worker well-being. Still, they are not as comprehensive as NIOSH's effort in developing and validating NIOSH Worker Well-being Questionnaires (WellBQ) published in 2022. This questionnaire serves as an instrument that can measure multidimensional psychometric properties of all main core qualities of well-being. NIOSH has achieved significant advancements by integrating numerous well-established and validated scales from existing literature and fundamental principles of occupational safety and health (Chari *et al.*, 2022).

NIOSH TWH has outlined fundamental principles of well-being concepts to direct the strategy for evaluating worker well-being across diverse spheres. Since well-being encompasses multiple facets, social connections, physical and psychological health, and contentment with life and work have been investigated. There exist two primary methods to gauge well-being: subjective and objective methodologies. The subjective approach defines well-being as how individuals assess their global life satisfaction and emotions. Subjective well-being encompasses

cognitive and emotional components, granting insight into how people perceive their well-being (including life contentment and positive/negative emotions).

Conversely, objective well-being involves quantifiable markers of an individual's standard of living, concentrating on tangible factors that contribute to their overall well-being. These factors, such as resources, material possessions, and essential components (e.g., physical health, social relationships, safety), are palpable and pivotal for realizing personal ambitions. Moreover, well-being transcends mere avoidance of threats to one's quality of life and entails favorable and advantageous circumstances that foster individual growth. To achieve well-being, it is essential to encompass both work-related and non-work-related facets of life. By assimilating all these dimensions, a more all-encompassing comprehension of an individual's overall quality of life and well-being can be acquired (Chari *et al.*, 2022).

The study aims to evaluate the reliability and validity of the translated Malay version of the NIOSH Worker's Well-Being Questionnaire (WellBQ) in Malaysian healthcare workers. This section will illustrate the problem statement, research questions, objectives, and hypotheses.

1.2   Problem Statement

Well-being measurement involves assessing various dimensions of a person's life to understand their overall quality of life and happiness. Well-being encompasses physical health, mental well-being, social connections, job, and life satisfaction. Healthcare workers are subject to the same principles of well-being measurement as anyone else, but their unique work environment and stressors might influence their well-being differently.

Healthcare workers often experience elevated stress levels due to extended work hours, disease exposure, emotional demands, and the pressure to deliver excellent care. This can significantly impact their overall well-being. Ensuring the health and safety of healthcare workers leads to improved productivity, job satisfaction, and worker retention, all of which contribute to their well-being. Well-being signifies a positive outcome that holds significance for individuals and healthcare workers, as it indicates a favorable perception of their lives. Monitoring well-being as a measure of overall population health is crucial for shaping policies that protect healthcare workers' health, safety, and well-being. Enhancing healthcare workers' health, safety, and well-being reduces occupational harm costs. It minimizes patient harm, thus enhancing the quality, safety, and sustainability of patient care, healthcare workforce management, and the environment (WHO, 2022).

However, the researcher realized that well-being measurement among healthcare workers is relatively low, and very little study has been conducted in the local context to explore the well-being of healthcare workers. The lack of research on well-being is likely due to the lack of a holistic well-being questionnaire and low awareness of the importance of measuring well-being among healthcare workers or other private or public working populations.

The objective of the NIOSH Worker's Well-being Questionnaire was to assess worker well-being using various components, as discussed in the earlier introduction section. This questionnaire, recently created in English, was developed using a representative sample of civilian, non-institutionalized working populations in the United States for its development and initial testing (Chari *et al.*, 2022); there would bound to be potential linguistic and cultural nuances that might affect the accuracy and relevance of the questionnaire items when used in Malaysia's setting. The

WellBQ Questionnaire has not undergone extensive translation into foreign languages, including the Malay language. Consequently, adapting the NIOSH Worker's Well-being Questionnaire from English to Malay becomes complex, necessitating careful consideration of cultural nuances to ensure its reliability and validity. Given that English is not the predominant language in this country, utilizing the original English version of the NIOSH Worker's Well-being Questionnaire for research purposes poses challenges. Therefore, creating a translated Malay version of the questionnaire is indispensable, enabling researchers to explore well-being issues within the local context effectively.

1.3   Study Rationale

To date, no reliable questionnaires exist to assess the holistic well-being of workers in Malaysia, including their quality of working life, non-work circumstances, and physical and mental health. The NIOSH Total Worker Health Program's development and validation of the NIOSH WellBQ questionnaire aims to fill this gap and explore the multidimensional aspects of worker well-being. Cultural elements, societal standards, and language subtleties shape the well-being of workers. It's vital to translate and adjust a questionnaire for various languages and cultures to truly understand the wide range of well-being perspectives among different groups of people. In our globalized world, workplaces frequently bring together employees from diverse countries and cultural origins, particularly in healthcare environments. Making a well-being questionnaire accessible in multiple languages ensures a uniform evaluation of well-being throughout the workforce.

The national language of Malaysia is Malay. Most questionnaires used in Malaysia are in Malay for easier understanding among the population. A report from the Ministry of Education, 2015 stated that English language proficiency among Form 5 & university students was poor, and the proxying proficiency in the English language among workers was also poor. Furthermore, there should be a good practice of translating and cultural adaptation of any questionnaire for acquiring substantial data study (Wild *et al.*, 2005).

When a questionnaire is translated and validated for a different culture, it's called cross-cultural adaptation, which guarantees that the questionnaire remains accurate and dependable in the new cultural setting. If not properly validated, the findings might not truly represent how the specific group perceives well-being. Cross-cultural adaptation includes altering, translating, and validating a questionnaire to ensure it's fitting, accurate, and culturally suitable in a different environment. This recognizes that language, values, norms, and social situations differ among cultures, affecting how people interpret and answer the questions.

A healthcare professional is responsible for providing care and assistance to those unwell or suffering. This can be carried out directly, such as doctors and nurses, or indirectly as aides, assistants, laboratory technicians, and even those managing medical waste. These individuals play a crucial and esteemed role as an invaluable human assets within healthcare (Joseph and Joseph, 2016). Healthcare workers face distinct professional challenges, encountering specific stressors related to their roles, such as high-pressure decision-making, exposure to diseases, emotional demands, and long hours. The well-being of these workers directly impacts the quality of patient care; when healthcare workers are stressed or burnt out, it can lead to suboptimal care and affect patient outcomes. The health workforce encompasses individuals in various

roles within the healthcare sector, forming a crucial part of the broader working population. Therefore, translating and validating the NIOSH Worker's Well-Being Questionnaire for healthcare workers is essential. This process can help identify and address healthcare workers' unique stressors and concerns, informing policies and interventions aimed at enhancing their well-being. It provides a comprehensive, evidence-based approach with a reliable assessment tool to support the overall well-being of healthcare workers.

Hence, this study aims to validate the Malay translation of the NIOSH Worker Well-being Questionnaires (WellBQ) for evaluating the well-being of healthcare workers in any health organization. The findings of this study can serve as an internal benchmark within health organizations, helping assess the necessity for future interventions.

1.4   Research Questions

Can the recently translated Malay version of NIOSH WellBQ be considered a reliable and valid instrument/tool?

1.5   Research Objectives

1.5.1   General Objective

To translate and validate the NIOSH worker well-being questionnaire WellBQ

1.5.2   Specific Objectives

1. To translate NIOSH WellBQ to Malay version (Forward and Backward Translation)

2. To determine the reliability and validity of translated Malay version of NIOSH WellBQ among healthcare workers in Hospital Universiti Sains Malaysia using Confirmatory Factor Analysis (CFA)

1.6   Research Hypothesis

The Malay version of the NIOSH Worker's Well-being Questionnaire is valid and reliable in measuring the multidimensional aspects of workers' well-being in healthcare workers.

CHAPTER 2

LITERATURE REVIEW

2.1   Overview of worker well-being

Well-being is a state that individuals and societies experience, and it is closely intertwined with daily life resources, including social, economic, and environmental conditions. The concept of well-being is multifaceted, encompassing various psychometric properties, according to the World Health Organization (WHO). When we talk about worker well-being, it refers to employees' overall physical, mental, and emotional health and happiness within their work environment. It involves several factors that can impact the quality of their work life, such as job satisfaction, social support, work-life balance, and opportunities for personal and professional growth. The well-being of workers is influenced by a range of factors, including job demands, organizational culture, work environment, and personal relationships. Organizations prioritizing worker well-being can reap benefits such as enhanced productivity, increased employee engagement and retention, reduced healthcare costs, and decreased absenteeism. Studying long-term well-being is valuable as individuals' feelings exhibit stability over time, although situational factors can still influence these feelings (Diener 2009).

While there isn't a universally agreed-upon definition of well-being, most experts concur that it encompasses having positive feelings (like contentment and happiness) and lacking negative emotions (such as depression and anxiety). It also involves being content with life, feeling fulfilled, and functioning well. In simple

words, well-being means seeing life in a positive light and feeling good. Scholars from various fields have explored different facets of well-being, including physical, economic, social, developmental, emotional, and psychological aspects. Additionally, there's a focus on life satisfaction, satisfaction within specific areas, engaging activities, and work. From a modern standpoint, Professor Ed Diener, a notable psychology expert, defines well-being as an individual's cognitive and emotional life evaluations. This consists of three main elements: assessing life satisfaction and experiencing positive and negative emotions. Life satisfaction involves overall judgment of one's life, considering work, relationships, and personal achievements. Positive affect frequently describes positive emotions like joy and contentment, whereas negative affect refers to experiencing negative emotions such as sadness, anger, and stress (Diener, 2009a).

Another way to gauge well-being is through objective measures concentrating on tangible and quantifiable indicators. This approach relies on factors like economic status (such as income, wealth, and job opportunities), physical health (including life expectancy and access to healthcare), education level, social connections, environmental conditions (like air and water quality, access to green spaces), safety (measured by crime rates and secure housing), employment, and political freedoms (such as democratic governance and freedom of speech). It's important to recognize that the line between subjective and objective well-being isn't always distinct, as they are interconnected. Some researchers combine both subjective and objective indicators to get a more complete understanding of well-being. These indicators are utilized globally to measure objective well-being and make comparisons between nations, like the Legatum Prosperity Index. This index, crafted by the independent Legatum Institute and partly funded by the Legatum investment firm, ranks countries

based on economic, social, governance, personal freedom, health, education, and safety dimensions. This index comprehensively assesses a country's overall well-being and prosperity, a form of objective well-being. A higher Prosperity Index score indicates greater well-being, prosperity, and quality of life in a country. Different countries might prioritize various dimensions of well-being. As of 2023, Malaysia's ranking on the Legatum Prosperity Index stood at 43rd (Index, 2023).

Essential health services and global efforts toward achieving health-related goals under the Sustainable Development Goals have been continuously monitored. Among these goals, the 3rd Goal of SDG focuses on ensuring healthy lives and promoting well-being for people of all ages. Health and well-being play a crucial role in enhancing the quality of life for the population. Therefore, a country's progress and prosperity are closely tied to its ability to attain and sustain a sense of meaning and purpose in health and well-being. To achieve this, one of the significant health well-being issues is among workers regardless of employee or employer. Employee well-being is a multidimensional construct with no specific definition, covering various aspects and experiences (Abdi, Peiro, et al. 2018).

Additionally, another study offers a comprehensive, evidence-based analysis of mental health issues faced by healthcare workers, including burnout, increased work-related stress, moral injury, depression, and trauma. This study emphasizes the significance of prioritizing and safeguarding the mental well-being of healthcare professionals (Sovold, Naslund, et al. 2021). We must acknowledge these health problems among healthcare workers, which calls for further combined efforts to mitigate these challenges.

For the past seventy years, since the inception of the United Nations, the significance of peace, dialogue, and international cooperation has remained

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paramount. In the twenty-first century, a global action plan has been formulated to benefit individuals of all ages, including children, women, and men. The Sustainable Development Goals and their targets highlight the magnitude and ambition of this universal agenda. Among these goals, Goal 3 (Ensuring Healthy Lives and Promoting Well-being for All at All Ages) emphasizes explicitly the importance of well-being. There are a total of 13 targets that mainly focus on health, and by ensuring healthy lives, it will achieve healthy well-being for all.

A study among Spanish social workers in Mallorca, Spain showed that compassion satisfaction is at a medium level (26.3% showed higher levels of compassion satisfaction, and 18.9% showed lower levels of compassion satisfaction). In contrast, compassion fatigue among social workers is medium mainly level as well. Social workers scored high in compassion fatigue at 32.6% and scored low at 8.5%, indicating no risk. The score shows a strong association between job satisfaction with job fatigue in this study (Cuartero and Campos-Vidal, 2019). According to a survey conducted among employees in South Korea, it was found that when they receive comprehensive organizational support and psychological assistance, they exhibit high levels of work engagement, career satisfaction, and a strong sense of well-being. Organizational support had an indirect effect on well-being through career satisfaction. They also stated that career satisfaction relates to work engagement and subjective well-being (Joo and Lee, 2017).

Findings of a study in Malaysia among factory workers revealed 46 percent of the respondents are satisfied with their job, followed by 27 per cent who are just slightly satisfied. A total of 18 percent are very satisfied, while only 5 percent stated that they are not satisfied with their job. The least is 3 percent, who are dissatisfied with their job. Thus, it showed that most respondents are satisfied with their job as

factory workers (Manaf *et al.*, 2019). They also studied whether demographic factors such as gender, race, and job position influenced a worker's well-being. The study's results showed that these factors didn't lead to significant differences in how individual factory workers perceived their well-being, job satisfaction, or their work environment. The study suggests a consistent pattern in how well-being and work experiences are seen across genders, races, and job roles. Moreover, the study indicated that the quality of the work environment and employee well-being influence job satisfaction more than family income. The findings underscore management's importance in creating a supportive workplace to enhance employee productivity and well-being (Manaf *et al.*, 2019).

A study conducted on female academicians in Malaysian universities revealed that work-family demands and conflicts have a detrimental effect on the well-being of these workers. Work-family demand emphasizes that management and supervisory support directly influence worker's life, job, and family satisfaction, leading to significant and positive worker well-being. Management and supervisory support are crucial for improving workers' well-being at work and home. Balancing work demands and family roles is essential for enhancing the well-being of female academicians (Achour *et al.*, 2017).

Work-related sexual harassment is a serious matter and probably a taboo among employees or workers because exposing it may cause significant emotional distress to the worker and their family. It is emotionally distressing as the worker must decide whether to reveal the truth to the higher authority. Still, at the same, the worker would be worried about the possible severe impact on their job advancement or job insecurity, especially if the perpetrator were to be their supervisor or manager. A Swedish study investigated the connection between workplace sexual harassment

and suicide attempts. The findings indicated that exposure to workplace sexual harassment was linked to a higher risk of suicide attempts, with women reporting a higher prevalence of workplace sexual harassment (7.5%) compared to men (1.9%).

The connection between workplace harassment and worker well-being is both significant and intricate. Workplace harassment refers to unwanted behaviours, actions, or comments that create an unwelcoming or offensive atmosphere for an individual, including sexual harassment. The effects of workplace sexual harassment on well-being are profound and manifest in various ways. The impact includes the development of psychological distress, with individuals experiencing higher levels of stress, anxiety, and depression due to harassment. Psychological distress can eventually lead to feelings of helplessness, humiliation, emotional exhaustion, and a negative impact on mental well-being. Prolonged exposure to workplace sexual harassment can result in physical health issues such as headaches, sleep problems, physical fatigue, and even cardiovascular problems, leading to a decline in physical well-being. These ongoing exposures also diminish job satisfaction and engagement, affecting relationships with colleagues and supervisors, and resulting in strained interactions and isolation. All of these factors further influence an individual's social well-being.

Within the category of vulnerable women, including those who are single, divorced, or separated, a significant proportion was identified as having non-supervisory roles, highly stressful jobs, exposure to violence or threats of violence, and being subjected to bullying by superiors. Consequently, these women were found to have poorer mental well-being and an elevated risk of suicide. After accounting for factors such as gender, country of birth, family structure, educational level, and

income, the hazard ratio was determined to be 2.82 (with a confidence interval of 1.49 to 5.34) (Magnusson Hanson *et al.*, 2020).

In a study conducted among female registered nurses employed in government hospitals in Malaysia, a high prevalence of sexual harassment was observed, reaching 51.2%. Verbal harassment was found to be the most common form (46.6%), followed by visual harassment (24.8%), psychological harassment (20.9%), physical harassment (20.7%), and non-verbal harassment (16.7%). The study also revealed that individuals perceived as attractive, had an appealing body figure, displayed a friendly demeanour, and were easygoing tended to experience a higher prevalence of sexual harassment. Those exposed suffered psychological effects throughout their working life (Suhaila and Rampal, 2012). An additional study provided more evidence of the harmful impact of sexual harassment on female tour guides' careers. The research found that experiencing sexual harassment led to higher burnout, lower job satisfaction, and poorer psychological well-being. Consequently, it negatively affected these workers' overall well-being (Alrawadieh *et al.*, 2022).

The issue of general health status among workers must be identified as they are essential to achieving a balanced well-being among workers. A multinational study was conducted among healthcare workers from the United Kingdom, Poland, and Singapore to assess the safety culture and the levels of burnout, anxiety, or depression. They found that 67% of HCWs screened had burnout, 20% had anxiety, and 11% had depression. Among different occupational categories, doctors (OR 2.10; 95% CI 1.49-2.95), nurses (OR 1.38; 95% CI 1.04-1.84), and 'other clinical' staff (OR 2.02; 95% CI 1.45-2.82) were identified as significant predictors of burnout. The COVID-19 pandemic has imposed a substantial burden of burnout, anxiety, and

depression, negatively impacting the mental well-being of healthcare workers (Denning *et al.*, 2021).

2.2 Questionnaires used for Measurement of Worker's Well-being

The examples of questionnaires to measure each aspect are elaborated on below. Most questionnaires are validated and commonly used to measure the multiple aspects of a worker's well-being.

2.2.1 Work Evaluation and Experience

For this section, workers are evaluated for their work and their work experiences through questionnaires. By assessing aspects such as satisfaction in employment, wages, work benefits, support at work, and how they perceived the meaningfulness of their work, the organization may conclude whether their employees are satisfied to work comfortably and continue to contribute to their full potential. As mentioned in the well-being overview, researchers can evaluate subjective well-being by considering how individuals see their work life. Evaluation of subjective well-being involves assessing job satisfaction, finding meaning in their work, being engaged in their job, and their emotional state while working.

How work is assessed, and the experiences someone has at work shape their overall well-being. Various work experiences impact job satisfaction, mental health, engagement, and overall quality of life. For instance, positive work evaluation recognizes an individual's contributions and achievements, making them feel valued and accomplished, which boosts their well-being. When work evaluation processes are clear and fair, job satisfaction increases. Effective evaluation also offers chances

for improvement, motivating employees further. Constructive feedback from positive evaluations helps people continue to learn and grow, which benefits well-being.

On the other hand, positive work experiences involve having supportive colleagues, supervisors, meaningful tasks, and a healthy work environment. These lead to higher job satisfaction, engagement, and better mental and emotional well-being, ultimately improving overall well-being. Both work evaluation and work experience are intertwined and impact an individual's well-being. Organizations prioritizing both aspects foster an environment that promotes well-being and supports employees' growth.

Multiple studies examine the relationships between workers' satisfaction with wages, benefits advancements, jobs, the relation with the supervisors, and co-workers' support. Because it is costly and harms how well the organization runs and provides care, the high worker turnover rate in the healthcare sector is a problem. The health industry faces significant challenges, including workforce shortages, high attrition rates, and relatively low remuneration for some healthcare professions, as stated in the 2012 Commission Action Plan for the EU Health Workforce. Prior studies have mainly focused on how personal and organizational issues influence an employee's quitting decision. Steinmetz, 2014 acknowledges that the quality of care is not solely affected by the wages provided to personnel but also by how long activities and processes take (Steinmetz *et al.*, 2014).

This study used a *WageIndicator* questionnaire distributed through a web-based population that collects voluntary information from web visitors regarding their wages. The survey is standardized for cross-country comparison purposes. It is available in the respective national languages, tailored to the specificities of each country, and covers a diverse array of topics such as fundamental socio-demographic

features, salary, and other employment-related matters. However, their web-based survey distribution has a drawback where they may not represent the population of interest, such as non-healthcare workers. The data shows the likelihood of employees staying with their current employer the following year based on working hours and pay in three countries. Overall, employees in the Netherlands have the lowest intention to remain with their current employer compared to the other two countries. However, for employees with a commute time exceeding 60 minutes, Belgium has a slightly lower rate by two percentage points. It also demonstrates the correlation between the desire to stay, earnings, and characteristics connected to wages. Across all the nations, the intention to stay is lowest among people unsatisfied with their income. However, the intention to stay is higher among people who are satisfied with their pay (Steinmetz *et al.*, 2014). The WageIndicator questionnaire is commonly used to gather information about wages and working conditions. While it can offer some insights into specific aspects connected to well-being, it is not created to be a complete measure of overall well-being. The WageIndicator Questionnaire might not completely grasp the subjective well-being elements, as it mainly concentrates on factual information about work situations and pay, which is considered objective well-being. If work evaluation processes result in rewards based on performance, employees who excel could feel more content with their wages. Feeling fairly paid for their work boosts job satisfaction, which, in turn, improves the overall well-being of workers.

Job engagement is characterized as a positive and fulfilling mindset towards work, characterized by energy, dedication, and deep involvement. When a worker has a good engagement with their work, an employee will commit an adequate or higher emotional commitment to their work and the organizational institution for which they

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work. Employers use compensation to reward the employee in exchange for labour. Compensation consists of minimum wages, benefits, and advancements that are part of compensation satisfaction that influence employee engagement. Wages are crucial in maintaining a worker's financial security and social well-being at or outside the workplace (Che Ahmat *et al.*, 2019). Therefore, organizations must keep or enhance the minimum wages of their employees whenever needed. An efficient compensation system benefits employers and employees and improves overall job satisfaction. The study conducted by Che Ahmat et al. in 2019 found positive associations and consistent findings with other research, linking job engagement with job satisfaction, compensation satisfaction with work motivation, and compensation satisfaction with job engagement. Engaged employees feel motivated and committed to their work tasks and goals and further enhance overall workers' well-being.

Several validated questionnaires exist among the various options available to measure the multifaceted aspects of job satisfaction. Some examples include the WageIndicator Questionnaires and the Job Satisfaction Survey (JSS) developed by Paul Spector. A job satisfaction survey can offer valuable insights into specific aspects of well-being, especially those linked to work experiences and job feelings. However, it doesn't cover all dimensions of well-being thoroughly. A mix of assessment tools addressing physical, emotional, social, and psychological aspects would be more appropriate for a comprehensive measurement of overall well-being.

Additionally, the Pay Satisfaction Questionnaire (PSQ) by Heneman III and Schwab (1985) is another tool used to assess job satisfaction dimensions, particularly in human service, public, and non-profit organizations (Spector, 1994). The internal consistency is that an average of 0.7 was obtained from a sample of 3067 individuals. Some studies have tested the validity, reliability, and sensitivity of the JSS using

qualitative and quantitative methodologies, suggesting that JSS can be used in Nepalese settings and other low and middle-income countries (Batura *et al.*, 2016). The Minnesota Satisfaction Questionnaire (MSQ) has been commonly utilized in various job satisfaction studies conducted in Malaysia. This questionnaire assesses job satisfaction through seven items measuring general, external, and internal satisfaction. The MSQ employs a 5-point Likert Scale.

Additionally, compensation satisfaction has been measured using the Pay Satisfaction Questionnaire (PSQ), consisting of 18 items that cover aspects such as pay level, pay rise, work benefits, pay structure, and pay administration. The study selected these measurement scales based on their appropriateness and demonstrated reliability and validity (Che Ahmat *et al.*, 2019). PSQ Questionnaire and Minnesota Satisfaction Questionnaire (MSQ) also have limitations similar to Job Satisfaction Survey as it could not comprehensively measure the overall worker's well-being. However, it can provide insights into certain aspects of well-being.

Workplace stress is a significant concern for organizational leaders as it negatively affects the economy and reduces productivity. Prolonged workplace stress increases the risk of employees developing health problems such as cardiovascular disease, obesity, cancer, diabetes, depression, and anxiety. The development of chronic disease is a high emotional cost to employees' well-being, leading to increased financial costs to the organization's performance. Factors like unrealistic job demands, inadequate support from leaders, limited resources, and lack of rewards create workplace stress and hinder job performance. These stressors reduce employees' motivation to take initiative, leading to persistent underperformance and potential physical health issues. On the other hand, organizations that promote regular interaction between employees and managers directly impact employee productivity.

It is beneficial for organizations to adopt diverse leadership styles that suit different situations in the workplace.

A study in Ireland surveyed academic, research, and support staff using the ASSET questionnaire developed by Cartwright and Cooper (2002). The questionnaire assessed various factors, including job performance, co-worker support, leadership support, work-life conflict, and workplace stressors. The ASSET survey demonstrated good internal consistency reliability, with values ranging from 0.64 to 0.94 (Foy *et al.*, 2019). In a study conducted in Malaysia, questionnaires from existing literature reviews were utilized, and additional questionnaires were developed to measure the relationship between supervisor support and work engagement. The study results indicated convergent validity for the measurement model, with average variance extracted (AVE) values of 0.63 and 0.64, surpassing the suggested threshold values by Fornell and Larcker (1981). The instrument was considered reliable, as the composite reliability value for the constructs was 0.93, exceeding the minimum limit of 0.7 recommended by Hair *et al.*, 2011. The ASSET (A Shortened Stress Evaluation Tool) questionnaire is created to gauge how stressed individuals feel. Even though stress can affect well-being, the ASSET questionnaire concentrates on measuring stress itself and might not cover all aspects of well-being fully. It may not include physical health, mental well-being, life satisfaction, and social relationships.

Fatigue is when a person experiences unpleasant physical and cognitive sensations, including tiredness and exhaustion. This condition can lead to a continuous sense of overall weakness, which may harm a person's ability to perform tasks safely and effectively. Not only is fatigue subjective by nature, but objective assessment of fatigue is also involved in measuring human physiology or worker's performance indicators. The relationship between fatigue and assessing worker well-

being is meaningful because fatigue can directly affect different parts of well-being. Fatigue can impact a person's overall well-being in various ways. Physical fatigue, for example, can lower physical well-being by affecting energy levels, physical health, and the ability to do daily activities –all critical for well-being. Mental fatigue, caused by cognitive demands and prolonged focus, can affect mental well-being. Both physical and mental fatigue can lead to negative emotions like irritability, mood changes, and decreased emotional resilience, which negatively affects emotional well-being.

When we include fatigue in well-being assessments, we use specific tools and methods to understand how individuals feel tired. Because fatigue can affect different parts of well-being (like mental, psychological, emotional, and physical well-being), it's crucial to pick suitable assessment methods that match the context and purpose of the assessment. Patterson *et al*. conducted a review summarizing the reliability and validity of various fatigue survey instruments. The review included ten tools to measure fatigue in the context of well-being assessment: the Brief Fatigue Inventory (BFI), the Swedish Occupational Fatigue Inventory (SOFI), the Fatigue-Related Symptoms Questionnaire (F-RSQ), the single-item Crew Status Survey (CSS), the Occupational Fatigue Exhaustion Recovery (OFER) scale, the Chronic Fatigue Scale of the Standard Shift work Index (SSI-CFS), the Fatigue Scale (FAS), the Multidimensional Fatigue Inventory (MFI), the Patient Reported Outcomes Measurement Information System (PROMIS) fatigue survey, and the Chalder Fatigue Questionnaire (CFQ) (Patterson *et al.*, 2018). When assessing fatigue in a well-being review, it's essential to choose reliable tools and pair fatigue assessment with gauging mental and physical health, job satisfaction, and general happiness. Regularly monitoring fatigue in workers helps identify necessary actions to tackle fatigue and

improve well-being overall. Combining fatigue assessment with well-being evaluation gives a complete understanding of how individuals are doing and help create work environments that promote well-being.

2.2.2 Workplace Policies and Culture

The workplace is a complex setting where individuals spend significant time each day, aside from their home or other external environments. Since the early 20th century, it has been acknowledged that the workplace holds great potential for educating and supporting employees in managing their health. Initially, the emphasis was primarily on individual health promotion efforts rather than fostering a culture of health within the organization. The Ottawa Charter, 1986, mainly a response to promote and empower health worldwide, incorporates five key action areas in health promotion. One of the key action areas; to create a supportive environment for health highlighted the significance of supporting and creating an improved, healthy workplace environment. Since then, there have been increased efforts to reform health initiatives and establish a culture of health within organizations. Workplace policies and culture refer to organizational policies, programs, and practices that have the potential to influence worker well-being.

Workplace policies refer to formal rules, regulations, and procedures that guide the behaviour and actions of employees in an organization. These rules may address different workplace areas, such as attendance, leave, performance management, health and safety, and ethical behaviour. The management team often develops workplace policies to ensure employees understand their responsibilities and obligations (DREW *et al.*, 2006).

Workplace culture encompasses collective values, beliefs, attitudes, and behaviours. It is influenced by its people, processes, and practices and greatly affects employee motivation, engagement, and performance. A positive workplace culture fosters an environment where employees feel appreciated, respected, and supported, allowing them to collaborate effectively toward shared objectives (DREW *et al.*, 2006).

Numerous studies have emphasized the significance of workplace policies and culture in creating a supportive work environment that significantly influences employee motivation, engagement, performance, organizational productivity, and overall success. The organization may establish many workplace policies and cultures depending on occupation types. In the healthcare sector, a few examples of workplace policies are attendance and punctuality policies, code of conduct and ethics policies, anti-discrimination and harassment policies, health and safety policies, leave policies, performance management policies, training development policies, employee benefits policies, and recruitment selection policies. Health and safety policies are placed in utmost concern as healthcare workers are constantly faced with safety and health issues at the workplace.

Some factors influence workplace cultures, such as leadership style and behaviour, communication practices within each level of the organization, organizational values and mission, employee behaviour and attitudes, the organizational structure and hierarchy, performance and recognition practices, and teamwork practices within the organization (Marenus *et al.*, 2022).

The "culture of health" concept lacks a universally accepted definition. However, it generally refers to a workplace environment where people receive regular feedback and are supported by the organization in maintaining healthy lifestyles.