

Factors Related to a Good Quality of Work Life for Employees in the Poultry Processing Industry in Northeastern Thailand

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ABSTRACT

OBJECTIVE This study aims to analyze factors related to a good quality of work life (QoWL) for employees in the poultry processing industry in northeastern Thailand.

METHODS This study was a cross-sectional analytical study. The sample size was 229 poultry processing workers with good and 458 with not-good QoWL. The Work-related Quality of Life Scale-2 Online Website (THQWL) questionnaire was used. A test of the reliability of the questionnaire found a Cronbach's alpha of 0.899. The principal analyses used the Chi-squared test, the Fisher exact test, and binary logistic regression. Confidence intervals were set at 95% (95% CI), and a p -value of less than 0.05 ($p < 0.05$) was considered statistically significant.

RESULTS Factors significantly related to employees with a good QoWL were working in departments other than slaughtering departments (AOR = 15.58, 95% CI: 7.62, 31.83, $p < 0.001$), having less than a bachelor's degree education level (AOR = 6.65, 95% CI: 3.05, 14.49, $p < 0.001$), being a unit leader or in an upper level position (AOR = 7.26, 95% CI: 3.30, 15.98, $p < 0.001$) and working 40 or more hours per week (AOR = 1.92, 95% CI: 1.17, 3.16, $p = 0.010$).

CONCLUSIONS Not working in the slaughtering department showed the strongest association with good QoWL. Other factors significantly linked to good QoWL included an education level lower than a bachelor's degree, holding positions as unit leaders or in upper management, and working 40 hours or more per week. The study's findings can be applied to enhance and promote the QoWL of workers in the poultry processing and related industries as well as to help improve and reinforce the knowledge, skills, and other attributes important to the efficient performance of employees in the poultry processing industry.

KEYWORDS quality of work life, poultry processing industry, work-related quality of life scale, slaughtering

INTRODUCTION

Thailand aims to become a key player in the global food industry, particularly in poultry, currently ranking 12th in global food exports (1). The poultry sector is expected to grow by 2.5-3.5% annually from 2023 to 2025, driven by the full

reopening of the country after COVID-19 boosting tourism and supporting economic recovery. Increased demand for chicken products in restaurants and food processing industries is also anticipated (2).

In the industrial field globally, more than 300 million individuals face mental health problems, substance abuse issues and other disorders affecting their work capacity (3). Work-related stress is associated with various health problems, including depression, heart disease and musculoskeletal disorders (4). The poultry processing industry encompasses specialized facilities designed for poultry slaughtering and dressing, including butchering and processing meat and other poultry products for human consumption. Workers in this industry face a variety of occupational health hazards, including physical risks such as noise and exposure to cold and heat. They also encounter ergonomic challenges including repetitive tasks, forceful exertion and awkward work postures. They are also exposed to chemical hazards from dust, disinfectants, and cleaning agents used in processing, as well as biological threats such as bacteria, viruses, and fungi. Additionally, they face psychosocial hazards, e.g., stress, long work hours, and shift work (5). According to international organizations including the United Nations International Labor Organization (ILO) and Human Rights Watch, poultry processing employees have one of the most dangerous jobs, facing risks greater than those in many other manufacturing processes and sectors (6). Globally, food production industries are adopting standards like ISO 22000 for food safety and ISO 45001 which include recommendations related to mental health (7). Beyond directly impacting worker health, exposure to working conditions in these industries may also affect the quality of employees' working life, absenteeism, work productivity and product quality (8, 9).

Quality of Working Life (QoWL) is a vital aspect which can help ensure employees have the capacity and willingness to succeed in their roles. This contrasts with management practices that often rely on monetary compensation, leading to the potential reduction of organizational management power, particularly in a knowledge-based economy (10). High-quality work life is crucial in the workplace and forms an essential part of an overall strategic plan for achieving long-term, highly productive and reliable company objectives. Organizations prioritizing the maintenance of a high quality work environment are likely to outperform their competitors, resulting in superior organiza-

tional performance and lower turnover (11). Previous research on QoWL has shown the significant impact it has on workers and their families (12). Inappropriate work environments can negatively impact motivation, morale, production and performance, and can also increase attrition and burnout (13, 14). There is a substantial correlation between QoWL factors and workforce benefits, including enhanced morale, reduced attrition, increased employee performance and productivity as well as reduced incidents of sickness, absenteeism, stress and burnout. Many organizations are implementing programs such as organizational structure and physical environment improvements, providing group support, supervision and job redesign to reduce job stress and improve QoWL. While previous studies have focused on physical and ergonomic hazards (5, 15), there is also a wealth of research on the association between QoWL and work-related issues (16-18).

This study's purpose was to analyze factors related to the quality of work life in the poultry processing industry in northeastern Thailand. The study assessed employees' views on organizational policies and management, identified areas for improvement, and developed recommendations to enhance the industry's working conditions.

METHODS

Study design, population and sample

This cross-sectional analytical study included 6,077 participants who were employees in the poultry processing industry in northeastern Thailand. The inclusion criteria were Thai nationality, age over 18 years, and a minimum work tenure of 3 months. The exclusion criteria were individuals who had participated in the preliminary item try-out or who had psychiatric diseases.

The sample size calculation used IBM Statistical Package for Social Sciences (SPSS) software, version 28 for Windows (IBM Corp., Armonk, NY; KKU network license), comparing the proportions of two independent groups with a significance level of 0.05 and a power of 80%. A sample ratio of 1:2 was used. Proportions from a study by Soonthornvinit et al. (19) were referenced for sample size calculation. The calculated required sample size was 229 with good and 458 with not-good QoWL. To account for a potential 10% dropout rate, 756 questionnaires were prepared

for distribution in December 2022. The initial step involved contacting human resources and safety officers to extend invitations to workers to participate in the study. Following this, the officers were provided a link to facilitate the distribution of questionnaires to the employees. The researcher used a stratified random sampling method by departments to select the samples.

Research tools

The questionnaire consisted of two parts: 1) the work-related quality of life scale-2 online website (THQWL) and 2) personal and occupational information, a total of 15 items. The self-administered Work-related Quality of Life Scale-2 Online Website (THQWL) questionnaire was used in this study. The researcher had received permission to use the online survey software on the website. Among multiple questionnaires related to QoWL, researchers chose THQWL due to its comprehensive coverage of 7 dimensions, along with its good validity and reliability. The content validity index for THQWL was determined to be 0.97 (20). The researcher tested the questionnaires with 30 samples (Try out) to determine the questionnaires' reliability by calculating the Cronbach's alpha coefficient. Testing the reliability revealed a Cronbach's alpha of 0.899. THQWL consisted of seven subscales, namely employee engagement (EET), control at work (CAW), home-work interface (HWI), general well-being (GWB), job and career satisfaction (JCS), working conditions (WCS) and stress at work (SAW), a total of 32 items. Each question was answered using a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree), including 5 negatively worded questions (reverse scored). The QoWL total scores were categorized into three levels: low (31 to 71 points), moderate (72 to 113 points) and high (114 to 155 points) (19). A higher total score indicated a good QoWL, while moderate and low levels indicated not good QoWL.

Statistical analysis

The principal analyses used descriptive statistics, presented as frequencies and percentages. Inferential statistics were then applied to analyze the factors influencing good QoWL using binary logistic regression. The Pearson Chi-squared test was used to compare characteristics between

the two groups, with statistical significance set at a 95% CI ($p < 0.05$). The Fisher exact test was used when a cell had an expected count less than 5 and exceeded 20% of the total cell count. This analysis was comprised of two steps. First, univariate analysis examined the relationship of each variable, yielding crude odds ratios. In the second step, multivariate analysis was conducted to control for confounding factors, resulting in adjusted odds ratios. This study included all relevant independent variables, as there may be clinically important variables identified from the literature review. Variables with $p < 0.25$ were selected following the criteria established by Hosmer and Lemeshow (21). Multicollinearity was assessed using the variance inflation factor (VIF), with values greater than 10 and tolerance less than 0.1 indicating multicollinearity. All analyses were performed using the IBM Statistical Package for Social Sciences (SPSS) software, version 28 for Windows (IBM Corp., Armonk, NY; KKU network license).

Ethics

The Khon Kaen University Ethics Committee approved this study for Human Research based on the Declaration of Helsinki and the ICH Good Clinical Practice Guidelines (HE 651388). Participants who participated in the study and their personal identification information remained undisclosed. The data provided did not influence the participants' professional obligations.

RESULTS

Characteristics of the participants

The final sample comprised 687 employees with either good or not-good QoWL. The demographic characteristics that were similar between the groups included gender, monthly income, finances, extra income, and health hazards. The majority of the 229 employees with good QoWL were age ≥ 40 years (42.5%), female (34.5%), single or separated (30.5%), were from Nakhon Ratchasima (hometown) (36.5%), had less than a bachelor's degree (36.5%), were in unit leader or upper-level positions (44.9%), worked in a department other than the slaughtering department (44.8%), had worked 5 or more years in this industry (38.8%), and worked 40 or more hours per week (37.0%) (Table 1).

Table 1. Demographic characteristics of participants between the good and not-good QoWL groups (n=687)

Factors	Good (n=229) n (%)	Not good (n=458) n (%)	p-value
Age			< 0.001
≥ 40 yrs	91 (42.5)	123 (57.5)	
< 40 yrs	138 (29.2)	335 (70.8)	
Gender			0.306
female	171 (34.5)	325 (65.5)	
Male	58 (30.4)	133 (69.6)	
Marital status			0.032
Married	93 (38.6)	148 (61.4)	
Single/separated	136 (30.5)	310 (69.5)	
Hometown			0.005
Nakhon Ratchasima	180 (36.5)	313 (63.5)	
Other	49 (25.3)	145 (74.7)	
Education level			< 0.001
Lower than bachelor's degree	209 (36.5)	363 (63.5)	
Bachelor's degree or higher	20 (17.4)	95 (82.6)	
Monthly income (Baht)			0.356
≥ 20,000	23 (28.7)	57 (71.3)	
Up to 20,000	206 (33.9)	401 (66.1)	
Finances			0.231
No savings	207 (32.7)	426 (67.3)	
Savings	22 (40.7)	32 (59.3)	
Extra income			0.367
Yes	26 (38.2)	42 (61.8)	
No	203 (32.8)	416 (67.2)	
Position			0.023
Unit leader and upper-level	35 (44.9)	43 (55.1)	
Operations staff	194 (31.9)	415 (68.1)	
Department			< 0.001
Not slaughtering	219 (44.8)	270 (55.2)	
Slaughtering	10 (5.1)	188 (94.9)	
Years of work			0.017
≥ 5 yrs	101 (38.8)	159 (61.2)	
Up to 5 yrs	128 (30.0)	299 (70.0)	
Working hours			< 0.001
≥ 40 hrs	200 (37.0)	341 (63.0)	
< 40 hrs	29 (19.9)	117 (80.1)	
Health hazard			0.604
No	2 (50.0)	2 (50.0)	
Yes	227 (33.2)	456 (66.8)	

Binary logistic regression analyses of personal and work factors, and QoWL

The results of the univariate analyses revealed that the factors significantly associated with good QoWL were: age > 40 years (crude odds ratios (COR) 1.79, 95% CI: 1.28, 2.51, $p = < 0.001$); being married (COR 1.43, 95% CI: 1.03, 1.98, $p = 0.032$); Nakhon Ratchasima hometown (COR 1.70, 95% CI: 1.17, 2.46, $p = 0.005$); less than a bachelor's degree education level (COR 2.73, 95% CI: 1.64, 4.56, $p < 0.001$); being a unit or upper-level leader (COR

1.74, 95% CI: 1.08, 2.81, $p = 0.023$); not working in a slaughtering department (COR 15.24, 95% CI: 7.87, 29.52, $p < 0.001$); at least 5 years working in this industry (COR 1.48, 95% CI: 1.07, 2.05, $p = 0.017$); and working ≥ 40 hours per week (COR 2.36, 95% CI: 1.52, 3.68, $p < 0.001$).

The multivariable analysis revealed that not working in the slaughtering department (adjusted odds ratios (AOR) = 15.58, 95% CI: 7.62, 31.83, $p < 0.001$) had the strongest association with good QoWL. Other factors significantly related to good

QoWL included less than a bachelor's degree education level (AOR = 6.65, 95% CI: 3.05, 14.49, $p < 0.001$), being a unit leader or in an upper-level position (AOR = 7.26, 95% CI: 3.30, 15.98, $p < 0.001$), and working ≥ 40 hours per week (AOR = 1.92, 95% CI: 1.17, 3.16, $p = 0.010$) (Table 2).

Comparison of the level of WRQLS-2 (QoWL) in each of seven dimensions and overall (OVL) (n = 687)

Most employees in both groups had good scores in job and career satisfaction (good QoWL: 87.8%,

not good QoWL: 32.8%) and good employee engagement (good QoWL: 89.1%, not good QoWL: 24.7%). The lowest scores were for stress at work (good QoWL: 26.6%, not good QoWL: 8.3%) and control at work (good QoWL: 56.8%, not good QoWL: 17.2%). (Figure 1)

DISCUSSION

This analytical study focused on identifying factors associated with a good QoWL for employees in the poultry processing industry in Northeastern Thailand. Determination of the sample size used

Table 2. Binary logistic regression analyses of personal and work factors & QoWL (n=687)

Factor	Good QoWL n (%)	Crude OR (95% CI)	p-value	Adjusted OR (95% CI)	p-value
Age					
≥ 40 yrs	91 (42.5)	1.79 (1.28, 2.51)	< 0.001	1.40 (0.91, 2.15)	0.123
< 40 yrs	138 (29.2)	1		1	
Gender					
female	171 (34.5)	1.21 (0.84, 1.72)	0.306		
Male	58 (30.4)	1			
Marital status					
Married	93 (38.6)	1.43 (1.03, 1.98)	0.032	1.12 (0.75, 1.66)	0.582
Single/separated	136 (30.5)	1		1	
Hometown					
Nakhon Ratchasima	180 (36.5)	1.70 (1.17, 2.46)	0.005	1.28 (0.83, 1.97)	0.261
Other	49 (25.3)	1		1	
Education level					
Lower than bachelor's degree	209 (36.5)	2.73 (1.64, 4.56)	< 0.001	6.65 (3.05, 14.49)	< 0.001
Bachelor's degree or higher	20 (17.4)	1		1	
Monthly income (Baht)					
$\geq 20,000$	23 (28.7)	0.79 (0.47, 1.31)	0.356		
Up to 20,000	206 (33.9)	1			
Finances					
No savings	207 (32.7)	0.71 (0.40, 1.25)	0.231		
Savings	22 (40.7)	1			
Extra income					
Yes	26 (38.2)	1.27 (0.76, 2.13)	0.367		
No	203 (32.8)	1			
Position					
Unit leader and upper-level	35 (44.9)	1.74 (1.08, 2.81)	0.023	7.26 (3.30, 15.98)	< 0.001
Operations staff	194 (31.9)	1		1	
Department					
Not slaughtering	219 (44.8)	15.24 (7.87, 29.52)	< 0.001	15.58 (7.62, 31.83)	< 0.001
Slaughtering	10 (5.1)	1		1	
Years of work					
≥ 5 yrs	101 (38.8)	1.48 (1.07, 2.05)	0.017	1.11 (0.74, 1.68)	0.608
Up to 5 yrs	128 (30.0)	1		1	
Working hours					
≥ 40 hrs	200 (37.0)	2.36 (1.52, 3.68)	< 0.001	1.92 (1.17, 3.16)	0.010
< 40 hrs	29 (19.0)	1		1	
Health hazard					
No	2 (50.0)	0.50 (0.07, 3.56)	0.604		
Yes	227 (33.2)	1			

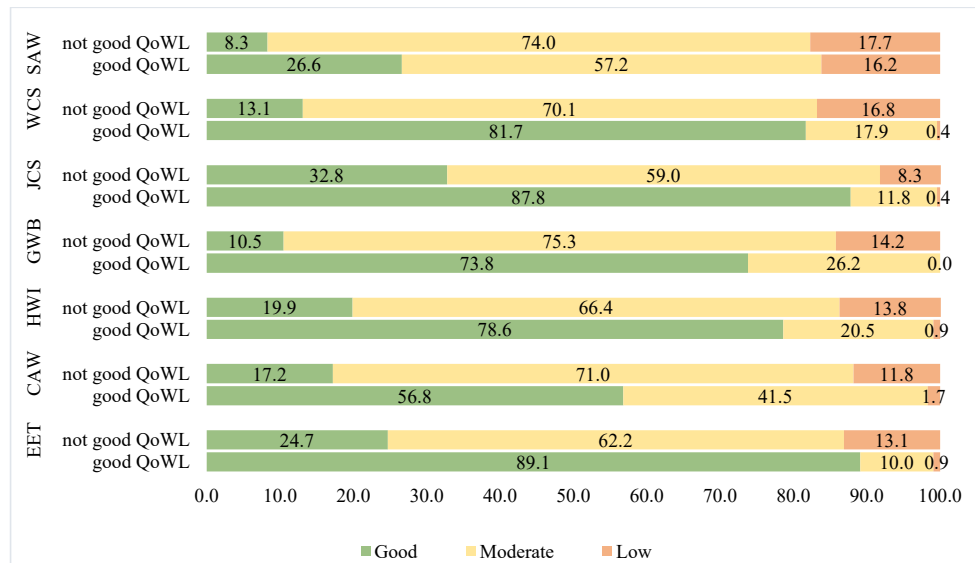


Figure 1. Comparison of the level of QoWL separated by seven dimensions (n=687)

EET, employee engagement; CAW, control at work; HWI, home-work interface; GWB, general well-being; JCS, job and career satisfaction; WCS, working conditions; SAW, stress at work

a formula for comparing two independent proportions and employed a probability sampling method. The sample was considered representative and contributed to the identification of factors related to QoWL. Potentially confounding factors such as gender, monthly income, financial status, and additional income were identified and addressed using multiple logistic regression. The THQWL questionnaire chosen for data collection consisted of sections on personal and occupational information along with the THQWL scale itself. Its reliability and validity were found to be satisfactory.

To ascertain the relative importance of these factors, we used multiple logistic regression. AOR reveal that not working in a slaughtering department exhibited the strongest association with good QoWL. Employees not in a slaughtering department reported higher QoWL ratings compared to those in a slaughtering department. This difference may stem from workers involved in slaughtering employing various coping strategies, both adaptive and maladaptive, to help mitigate negative aspects of the workplace environment and associated stressors. A study by Slade et al. sheds light on the role of slaughterhouse workers, highlighting the stress of authorized killing of living beings and its poorly understood impact on workers' well-being. That research reported a higher prevalence of mental health issues, particularly depression and anxiety, among slaughterhouse workers, along with supportive attitudes

towards violence (22). In response to these findings, slaughterhouse management should adopt a holistic approach to meeting the needs of employees throughout all stages of their work, including extending well-being interventions to the broader communities associated with the slaughterhouse (23).

Employees working ≥ 40 hours per week had higher QoWL ratings compared to those working fewer than 40 hours per week. Despite the global manufacturing sector's typical weekly working hours ranging between 35 and 45, certain developing countries, including Thailand, exceed this norm, averaging over 59 hours per week (24). Even though labor laws in Thailand stipulate that workers must not exceed 48 hours for general work and no more than 42 hours for jobs posing physical health risks or welfare concerns (25). In spite of the legal limitations, Thai employees often work beyond these thresholds. In line with previous studies, the findings of the present study indicate that increased working hours and overtime do not necessarily lead to decreased satisfaction. On the contrary, longer working hours and overtime have positive effects on both life and job satisfaction, while a desire to reduce working hours tends to have a negative impact on satisfaction. Employees' lack of desire to reduce their working hours is primarily influenced by overtime pay. The rate of compensating for overtime significantly affects job satisfaction. Satisfaction

increases and hour mismatches decrease when employees are compensated for overtime. However, overtime compensation and expected overtime hours differ across various jobs (26).

Working ≥ 40 hours per week or being employed in non-slaughtering departments were identified as contributors to a positive QoWL, specifically due to the working conditions (WCS). The assessment focused on the extent to which employees were satisfied with the fundamental resources, working conditions, and security necessary for effective job performance. It is evident that physical working conditions, which influence employees' perceptions of health and safety, play a significant role in employee QoWL.

The correlation between individual components and QoWL among employees indicated that unit leaders and upper-level positions had higher QoWL ratings compared to operative staff positions. Operative staff workers tended to place a higher value on extrinsic motivators such as rewards, while leader workers were more focused on intrinsic motivators such as job content for achieving satisfaction (12). The results of the present study are consistent with previous research. For example, Kuster et al. highlighted that operative staff workers may face hazardous conditions and psychosocial pressures in the workplace, with over half reporting symptoms of high anxiety. This underscores the necessity to enhance attention on improving and promoting self-management (14). Anbari et al. found a significant relationship between job satisfaction and the quality of the staffs' working life. Challenges inherent in tasks, lack of opportunities to showcase talents, and limited participation in organizational decision-making were identified as factors negatively impacting job satisfaction. Previous studies have suggested that if the quality of working life is improved, staff can experience a sense of justice, security and success (27). In contrast, it has been observed that leader workers tend to focus more on enterprise-related aspects, whereas operative staff workers prioritize benefits. Attitudes towards what they consider decent work vary between these groups, with emerging evidence suggesting the increased importance of soft factors across both operative staff worker and leader levels (13). Tangchuan et al. reported that working life in an American-owned electronic factory ex-

hibited distinctions between operators and supervisors, engineers and middle management. Some personnel working in potentially harmful conditions received additional compensation, emphasizing the importance of safety and good working conditions. The study also emphasized that qualified supervisors should possess qualities such as loyalty, hard work and efficient problem-solving (28). With the specific details depending on the context of the factory and the job descriptions.

In this study, individuals with less than a bachelor's degree exhibited higher QoWL ratings compared to those with a bachelor's degree or higher. Educational level is part of a complex set of factors, including attained education, social class, income and occupational position, the separate effects of which are not easily distinguishable. In general, professionals and managers tend to exhibit greater character strengths compared to other types of positions, particularly in terms of cognitive abilities. This is to be expected, given the higher cognitive demands and educational requirements associated with these roles. Therefore, the finding that cognitive strengths are more pronounced in managers and professionals is unsurprising and aligns with expectations (29). Previous studies strongly support the idea that meeting workers' expectations correlates positively with future work performance. For instance, having unmet expectations leads to decreased organizational identification and job involvement, higher turnover rates, reduced job satisfaction, increased distress, diminished commitment and weakened interpersonal trust. In terms of workplace integration, unmet expectations are more predictive of poor work adjustment than personal traits like self-efficacy and negative affectivity. While there may be some debate, overall, research indicates that unmet expectations forecast significantly lower work outcomes (30). On the other hand, highly educated individuals generally report better subjective health, greater work and functional abilities, and have a longer life expectancy. Among these factors, education level holds primary importance, remaining relatively constant throughout adult life, being easily measurable and strongly linked to health. Education is particularly significant as it imparts knowledge and skills while enhancing cognitive abilities (31). Additionally, a noteworthy correlation has been observed

between educational qualifications, the growth and development of employees, and self-motivation related to working conditions (32). Conversely, Krommuang and Lertthaitrakul's study of office employees in Bangkok revealed a different assessment of quality of work life based on educational levels. That research indicated that individuals with a master's degree experienced a higher QoWL compared to those with a bachelor's degree. This difference was attributed to higher education providing opportunities for advanced positions and higher returns, with private organizations prioritizing work performance and abilities over educational qualifications in promotions and rewards (33).

Unit leaders and individuals in upper-level positions with less than bachelor's degree were found to have a better QoWL due to their greater level of control at work (CAW). CAW, as a dimension of QoWL, involves several factors: the ability to voice opinions and influence changes in the workplace, involvement in decisions that affect individuals in their specific area of work, participation in decisions that directly impact members of the public, and having sufficient opportunities to question leaders regarding changes at work (34).

In the present study, both groups of employees exhibited high scores in job and career satisfaction (JCS) and employee engagement (EET), as depicted in Figure 1. In a previous study by Abadi et al., the researchers found that QoWL significantly influenced job satisfaction and employee performance, that employee engagement had a significant positive effect on job satisfaction and employee performance, and that job satisfaction significantly influenced employee performance. Moreover, QoWL and employee engagement were identified as having a significant effect on employee performance through job satisfaction (35). Industrial psychologists have noted that the degree of latitude employees have at work, particularly their control over job-related decisions, has a profound impact on their health, morale and ability to handle the workload. The lowest levels of job satisfaction were observed under conditions of high stress at work (SAW) and low control at work (CAW). Robert Karasek's research indicates that employees with high job demands but low control reported more post-work exhaustion, difficulty waking up in the morning, depression, nervous-

ness, anxiety and disturbed sleep compared to their counterparts with more control. Increasing employee control or decision-making latitude has been suggested as a way to reduce job strain without necessarily reducing the workload (36). Hofstede previously suggested that the factors influencing QoWL may vary among employees at different organizational levels within a culture. For example, focusing on job content might be more relevant for professionals and managers, while emphasizing the social context could be more important for clerks and technicians (37).

Additionally, across different slaughterhouses, policies, procedures, and roles pertaining to QoWL should include conducting weekly safety training sessions or meetings to help empower workers in actively monitoring and implementing processes, thus fostering an employee-driven safety culture, ensuring employees take proper breaks throughout their shifts to avoid certain injuries resulting from fatigue, mandating the use of personal protective equipment (PPE) as needed, implementing workstation rotation to reduce the wear and tear on bodies caused by repetitive tasks, and promptly seeking medical attention in the event of cuts, scrapes, or bleeding.

A major strength of this study is that it was the first analytical study to shed light on factors related to QoWL in the poultry processing industry. Notwithstanding, limitations of this research include the possibility of imperfect recall due to the data collection method, as individuals may not accurately remember some details after two weeks. Additionally, the study's cross-sectional nature precludes the determination of direct causality. Nevertheless, initial associations can be clarified to generate hypotheses for analytical studies aimed at further investigating causes and outcomes. Additionally, it is crucial to assess the validity and reliability of tools before their utilization, given that factors influencing QoWL may vary among employees at different organizational levels within a culture.

CONCLUSIONS

The study examined factors influencing the quality of work life (QoWL) among poultry processing industry employees in Northeastern Thailand. Employees not working in the slaughtering department showed the strongest associa-

tion with good QoWL. Other factors significantly linked to good QoWL included having an education level lower than a bachelor's degree, holding a position as unit leader or in upper management, and working 40 hours or more per week. Improving QoWL requires slaughterhouse management to adopt a comprehensive approach to addressing employee needs across all work stages. In addition, implementing policies, procedures, and roles related to QoWL should be expanded to other slaughterhouses.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

REFERENCES

1. Ipsos Business Consulting. Thailand's poultry industry. Bangkok: Ipsos; 2023.
2. Kornboonritros S. Industry outlook 2023-2025: chilled, frozen and processed chicken industry [Internet]. 2023 [cited 2024 Feb 12]. Available from: <https://www.krungsri.com/en/research/industry/industry-outlook/food-beverage/frozen-processed-chicken/io/io-chilled-frozen-processed-chicken>
3. World Health Organization. Talk about depression, strengthen depression-related services [Internet]. 2017 [cited 2024 Feb 12]. Available from: <https://www.who.int/southeastasia/news/detail/06-04-2017-talk-about-depression-strengthen-depression-related-services-who>
4. Melchior M, Caspi A, Milne BJ, Danese A, Poulton R, Moffitt T. Work stress precipitates depression and anxiety in young, working women and men. *Psychol Med*. 2007;37:1119-29.
5. Harmse JL, Engelbrecht JC, Bekker JL. The impact of physical and ergonomic hazards on poultry abattoir processing workers: a review. *Int J Environ Res Public Health*. 2016;13:197. PubMed PMID: 26861374
6. International Human Rights Standards and U.S. Law. Worker health and safety in the meat and poultry industry [Internet]. 2005 [cited 2020 Jan 10]. Available from: <https://www.hrw.org/reports/2005/usa0105/4.htm>
7. Health, Safety & Environment. ISO 45001 health and safety management standard [Internet]. 2022 [cited 2024 April 12]. Available from: <https://www.hse.gov.uk/managing/management-system/iso45001.htm>
8. Armstrong TJ, Foulke JA, Joseph BS, Goldstein SA. Investigation of cumulative trauma disorders in a poultry processing plant. *Am Ind Hyg Assoc J*. 1982;43:103-16.
9. World Health Organization. Comprehensive Mental Health Action Plan 2013-2030 [Internet]. 2021 [cited 2024 April 12]. Available from: <https://www.who.int/publications/i/item/9789240031029>
10. Sojka L. Specification of the quality of work life characteristics in the Slovak economic environment. *Sociologia*. 2014;46:283-99.
11. Sinha D, Sinha S, Sarangi PK. A study of influence of demographic variables on quality of work life (QWL). *J Inf Optim Sci*. 2022;43:1179-90.
12. Rombaut E, Guerry MA. Determinants of voluntary turnover: a data-driven analysis for blue and white collar workers. *Work*. 2021;69:1083-101.
13. Chen C, Perry P, Yang Y, Yang C. Decent work in the Chinese apparel industry: comparative analysis of blue-collar and white-collar garment workers. *Sustainability*. 2017;9:1344.
14. Kuster AT, Kuster AC, Klaiklang R. Self-representations of quality of life and anxiety of blue-collar workers, Khon Kaen, Thailand. *J Health Res*. 2015;29:449-56.
15. Auttanate N, Chotiphan C, Maruo SJ, Nayha S, Jussila K, Rissanen S, et al. Cold-related symptoms and performance degradation among Thai poultry industry workers with reference to vulnerable groups: a cross-sectional study. *BMC Public Health*. 2020;20:1357. PubMed PMID: 32887559
16. Kookittimaitri P. Factors affecting quality of work life and performance efficiency: a case study of a food factory in Nakornratchasima province [Independent Study]. Bangkok: Graduate College of Management, Sripatum University; 2015. [in Thai]
17. Choosuwan J. Factors influencing the quality of working life and happiness at work of daily employees in a frozen seafood industry in Songkhla province [Thesis]. Songkhla: Graduate School, Prince of Songkla University; 2016. [in Thai]
18. Kitirath P, Karnjanapokin K. Quality of work life management among food factory employees in Bang Bua Thong district. *J Multidiscip Humanit Soc Sci*. 2020;3:29-38. [in Thai]
19. Soonthornvinit W, Chaiear N, Boonjaraspinyo S, Tiamkao S. Working hours related to good quality of work life (QoWL) among doctors working in public hospitals in northeastern Thailand. *J Med Assoc Thai*. 2019;102(Supplement_1):S47-S54.
20. Chaiear N, Saikaew K, Soonthornvinit W, Sirisawas P. User manual of the THAI version of a work-related quality of life scale-version 2 and work-related quality of life scale-2 online website. Khon Kaen: Khon Kaen University; 2016.

21. Hosmer D, Lemeshow S. Multiple logistic regression. In: Applied logistic regression. 2nd ed. New York: Wiley; 2000. p. 31-46.
22. Slade J, Alleyne E. The psychological impact of slaughterhouse employment: a systematic literature review. *Trauma Violence Abuse*. 2023;24:429-40.
23. Victor K, Barnard A. Slaughtering for a living: a hermeneutic phenomenological perspective on the well-being of slaughterhouse employees. *Int J Qual Stud Health Well-being*. 2016;11:30266. PubMed PMID: 27104340
24. International Labour Organization. Almost half of Thai workers are putting in “excessive” hours, New ILO study finds [Internet]. 2007 [cited 2024 Feb 12]. Available from: https://www.ilo.org/asia/media-centre/news/WCMS_BK_PR_198_EN/lang--en/index.htm
25. Office of Permanent Secretary, Ministry of Labor. Employee-Employer rights [Internet]. n.d. [cited 2024 Feb 12]. Available from: <https://lb.mol.go.th/en/employee-rights> [in Thai]
26. Holly S, Mohnen A. Impact of working hours on work-life balance. Berlin: German Institute for Economic Research; 2012.
27. Anbari Z, Abbasinia M, Khadem M, Rahmani A, Asghari M, Nezhad IA, et al. Effects of the quality of working life on job satisfaction in an auto parts manufacturing factory. *Int J Emerg Ment Health*. 2015;17:151-5.
28. Tangchuang P, Rupavijetra P. Quality of working life: a case of workers in an electronic factory [Internet]. 2017 [cited 2024 Feb 12]. Available from: <http://bsris.swu.ac.th/iprc/4th/20.pdf>
29. Gander F, Hofmann J, Ruch W. Character strengths: person-environment fit and relationships with job and life satisfaction. *Front Psychol*. 2020;11:1582. PubMed PMID: 32793038
30. Taris T, Feij J, Capel S. Great expectations—and what comes of it: The effects of unmet expectations on work motivation and outcomes among newcomers. *Int J Select Assess*. 2006;14:256-68.
31. Phanprasit W, Konthonbut P, Laohaudomchok W, Tangtong C, Ikäheimo TM, Jaakkola J, et al. Workplace cold and perceived work ability: paradoxically greater disadvantage for more vs. less-educated poultry industry workers in Thailand. *Front Public Health*. 2021;9:762533. PubMed PMID: 34926385
32. Waghmare S, Dhole V. Quality of work life and influencing factors. *Int J Adv Res*. 2017;5:1328-32.
33. Krommuang A, Lertthaitrakul W. Employees' quality of work life in Bangkok, Thailand. *Sripatum Chonburi J*. 2020;16:1-14.
34. Van Laar D, Edwards JA, Easton S. The Work-Related Quality of Life scale for healthcare workers. *J Adv Nurs*. 2007;60:325-33.
35. Abadi RR, Nursyamsi I, Syamsuddin AR. Effect of quality of work-life and employee engagement towards job satisfaction and employee performances at PT. *Global Sci J*. 2020;8:2527-39.
36. American Psychological Association. Occupational stress and employee control [Internet]. 2003 [cited 2024 Feb 12]. Available from: <https://www.apa.org/topics/healthy-workplaces/employee-control-stress>
37. Hofstede G. The cultural relativity of the quality of life concept. *Acad Manage Rev*. 1984;9:389-98.