COVID19 AND IRISH WORKPLACES - PERSPECTIVES AND EXPERIENCES OF OCCUPATIONAL SAFETY AND HEALTH / HUMAN RESOURCE PERSONNEL

COVID19 outbreaks in workplace settings: understanding and preventing superspreading events - Work Package 2 Report

A Science Foundation Ireland COVID19 Rapid Research Scheme Funded Project

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Executive Summary

The COVID-19 pandemic has had deleterious effects on the global population, including the employees who have had to frequently adapt their working style for the purpose of mitigating COVID-19 workplace transmission. It is important for the employers, OSH management and policymakers to understand how COVID-19 adaptation may have impacted on workplaces and workers' health and wellbeing, along with experiences associated with mitigation measures such as newly introduced control measures, COVID-19 related communication strategies and behavioural apathy. This work package (WP2) as part of a larger SFI research grant that focuses on the impacts on organisations and their employees in Ireland from an OSH perspective using focus group interviews with OSH (Occupational Safety and Health) and/or HR (Human Resource) professionals who work closely with OSH counterparts as their experiences of working during the pandemic are considered invaluable for reflection on how Irish organisations managed during the pandemic as well as future planning.

Based on the thematic analysis, the findings were reported from four perspectives: organisational preparedness and support; organisational impact from COVID-19; impact on workers from COVID-19; and the future of OSH in a post COVID-19 world. Since the data collected were richer than anticipated, an emergent theme 'Worker Mental Health and How to Support' has also been reported as an independent chapter. Additionally, a survey instrument was developed based on the findings of the focus groups, which can be used by OSH professionals to evaluate COVID-19 adaptation impact on workers in their respective organisation has been designed and validated and a user guide prepared.

Overall, WP2 was conducted as optimally as possible given the limitations COVID19 placed on research and the goals for the work package have been achieved. Furthermore, WP2 also provided added value to the macro project, owing to the impressive amount of data collected which could be used for other aspects of the project.

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Glossary

Acronym	Full Term
ACDOS	Automatic Control & Dynamic Optimisation Society
CIF	Construction Industry Federation
EAP	Employee Assistance Programme
EMT	Emergency Medical Technician
FG	Focus Group
HR	Human Resources
HSA	Health And Safety Authority
HSE	Health And Safety Executive
IBEC	Irish Business and Employers Confederation
ICU	Intensive Care Unit
ILO	International Labour Organisation
IR	Industrial Relations
IT	Information Technology
LTI	Long-Term Illness
LTIE	Load, Individual, Task/Travel, Environment
NATO	North Atlantic Treaty Organisation
OSH	Occupational Safety and Health
PCR	Polymerase Chain Reaction
PPE	Personal Protective Equipment
SOP	Standard Operating Procedure
TWH	Total Worker Health
VDU	Visual Display Unit
VPN	Virtual Private Network
WFH	Work(ing) from Home
WHO	World Health Organisation
WP	Work Package
WRC	Workplace Relations Commission

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Chapter 1 Introduction

1.1 Background

The first case of COVID-19, a disease caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) was reported on 8 December 2019 in Wuhan, China. The disease spread outside Mainland China to become a global public health emergency (Ru, Yang and Zou, 2021). The World Health Organisation (WHO) designated COVID-19 a global pandemic on 11 March 2020 (WHO, 2020b). Since then, cases have been reported in virtually all countries across the world, including in employees in a multitude of workplace settings. As a result of the COVID-19 global public health emergency, occupational safety and health (OSH) and its focus on worker health and wellbeing has been brought more to the fore than at any other time since the major emergency incidents of the late 1970s and 1980s (Seveso, Bhopal, Chernobyl, Piper Alpha etc) which shaped the formative years of workplace health and safety management.

When the global pandemic arrived in Ireland at the end of February 2020, many OSH professionals were unaware of the virus or how it would impact operations in their organisation, nor how it would impact society so significantly through lockdowns, new hygiene measures and social distancing restrictions. Many organisations had to rapidly change how they operate, re-evaluate their health and safety risk assessments, procedures and management processes in order to continue as best they could with their day-to-day activities - and it largely fell to OSH personnel with support of their management and human resources teams to implement those changes.

1.2 Rationale

During the COVID-19 pandemic, employers needed to ensure the safety of their employees while also maintaining business continuity, especially in the essential service sectors which are consistently exposed to the public (healthcare / emergency services). To minimise the risks at the workplace, OSH and/or HR professionals were required to be innovative and creative while continuously redesigning policies and procedures to align with the latest information emerging (e.g. restrictions / guidelines changed with great frequency - in the early stages of the pandemic almost on a daily basis depending which work sector you were involved in). Thus, OSH and HR professionals became the most experienced staff in the organisation who possessed key information regarding protecting employees from occupational risks during the COVID-19 pandemic, especially when reflecting on the early stages of the global emergency.

The aim of the research was to ascertain how OSH and HR professionals managed to adapt their workplaces with the advent of COVID19 over the first 12-months of the pandemic with a particular emphasis on the first and second national lockdowns. Through a series of focus groups, WP2 aimed to acquire through active discussion and engagement the knowledge and experiences of OSH and / or HR professionals regarding what they had to do to adapt their workplaces, how did they manage to consider the safety, health and wellbeing of their colleagues, how they were part of changing the way organisations worked to keep operating and what they saw as being the major impacts (positive and negative) on their organisation's workers. Their knowledge and experiences have significant implications for OSH practices in more occupations all over the world moving forward, as well as in the future when similar epidemics occur. Their experiences need to be shared and considered more broadly from both an OSH perspective and in reflection on the larger public health response to the pandemic here in Ireland.

Based on the focus group findings and the wider research that has been continuously forthcoming over the last two years, a specific survey instrument was developed as another output of this work package. This survey instrument can be used by an OSH practitioner to determine the impacts of the pandemic on their workers from an OSH perspective but also can be adapted for future pandemics which are likely to be forthcoming over the next few decades as environmental degradation, climate change, increased urbanisation and societal interconnectivity continue to expose global populations to as yet unknown viri and bacteria.

1.3 Structure of Report

There are nine chapters in this report. The current chapter provides a brief introduction to WP2. Chapter 2 reviews the research literature on public health emergencies and discusses the relevant themes including workplace emergency management, managing worker expectations during an emergency, potential impacts to workers from workplace disruption, and potential long-term implications to workplaces arising from emergency adaptation. Chapter 3 provides our research methodology, exemplifying details on research framework, ethical considerations, research protocols, pilot test, participants' recruitment, data collection and data analysis.

The main focus group findings are presented from Chapter 4 to Chapter 7 under the four predetermined themes respectively. Chapter 8 presents the emergent theme regarding worker mental health during COVID-19 adaptation. Chapter 9 considers the results and their influence on the subsequent survey development and validation for evaluating worker COVID-19 adaptation impacts

based on focus group findings. The survey has had a pilot test with 6 participating organisations in Ireland (total n=589 workers). Chapter 9 is supported by appendices that provide a user guide and the final survey for usage by OSH or HR personnel.

Chapter 2 Literature Review

2.1 Introduction

Since COVID-19 is an unprecedented public health emergency, there was a very limited number of COVID-19 workplace adaptation studies that we could draw upon when commencing this work package. We therefore expanded the scope of the literature review to include previous studies on infectious diseases / epidemics to gain insight on global findings related to our study.

2.2 Review Methodology

The literature review process commenced in February 2020. Boolean Operators such as AND, OR parentheses and quotation marks were combined for searching within the individual themes. For example, (prepare* OR adapt*) AND (work* OR occupation* OR organisation OR organisation) AND (covid* OR SARS* OR infectious disease*) was used to search for studies regarding the topic of organisation preparedness and adaptation. Databases searched include PubMed (978 studies), Cochrane Library (74 studies), Epistemonikus (727 studies), google scholar (60 studies) and Embase (263 studies). After removing duplicates by using Zotero, an initial 2076 studies were left for initial screening at the end of February 2020, based on exclusion criteria: 1) not COVID related; 2) not workplace related; 3) not in English language. Finally, 483 studies included were downloaded for further analysis. YC briefly summarised the main findings of the studies reviewed to a shared Google spreadsheet for the research team to use across the wider project. However, with the number of COVID-19 related research increased since March 2020, more studies were inevitably added to this Chapter when writing up this report with help from CI and VD.

2.3 Organisation Preparedness and Adaptation

2.3.1 Preparedness: Definition and Aim

Organisational preparedness during public health crises requires the existence of guidelines and contingency plans for ensuring occupational safety and health (OSH) (Zhang et al., 2021). . Prior to the COVID-19 pandemic, OSH administrations called for employers to identify infectious disease risk levels in workplace settings and select appropriate control measures (Zisook et al., 2020). In light of COVID-19, administrations have worked to provide rolling strategies and recommendations for employers consisting of engineering controls, administrative processes, and employee use of Personal Protective Equipment (PPE) (Zisook et al., 2020). Focusing on preparedness, these policies have sought to reduce

employee morbidity and mortality related to COVID-19, prevent disease dissemination to employees, families, and the general community, and to preserve health care resources and essential equipment (Mossa-Basha et al., 2020).

COVID-19 and Organisation Preparedness

Many countries and industries have demonstrated organisational preparedness in the wake of COVID-19. In the transport sector, China and South Korea demonstrated the highest share of guidelines and contingency plans for all transport modes and facilities, surpassing both Europe, the USA, and Canada in their ability to maintain national transport during the crisis (Zhang et al., 2021). In Australia, local horticulture groups contacted farming businesses to ensure preparedness and awareness of the systems required to manage COVID-19 thereby enabling business continuity (Franklin and O'Sullivan, 2020). Prior to COVID-19, the Scottish Tourism Organisation undertook an extensive scenario planning exercise to prepare for disease outbreaks (Page et al., 2006); and as part of the World Health Organisation's preparedness and response initiative, a risk assessment tool was created for health care facilities to determine the risk of SARS-CoV-2 infection in exposed health care workers (HCWs).

Nevertheless, despite these positive examples, COVID-19 has revealed the extent to which some industries were unprepared for a global pandemic scenario. Organisation unpreparedness can be brought on by factors like limited resources, lack of political will, and deficiency in communal, institutional, and individual support or awareness (Tekeli-Yesil and Kiran, 2020). In the United States' hospital industry, for example, reliance on voluntary compliance and lack of mandates in favour of shifting guidelines from multiple agencies left HCWs uncertain, severely unprepared and vulnerable to COVID-19 infection (Cohen and Rodgers, 2020). Examples of organisation unpreparedness for COVID-19 are countless. A survey of fifty UK pharmaceutical companies in April 2020 showed that 80% had no preparedness plan to deal with a pandemic situation. Research reveals organisation unpreparedness to provide alternative, virtual-based services (Sy et al., 2020), to mitigate the psychological impact of a disaster on employees (Krystal et al., 2021), to stockpile and distribute the necessary quantity and quality of PPE to frontline employees (Hecker, 2020), to educate employees on pandemic planning prior to COVID-19 (Smith et al., 2007) and to implement timely work-from-home policies (BCI, 2020). These shortfalls likely had dire consequences. Inadequate preparedness for COVID-19 response has been associated with employee stress and burnout (Afulani et al., 2021). Unprepared companies had to expedite the introduction of telework, increasing the likelihood of negative health effects (Nagata et al., 2021), and in the US, shortages of PPE in national stockpiles led to the use of expired equipment (Cohen and Rodgers, 2020). On a global scale, supply chains have

been disrupted, affecting local communities that rely heavily on demands for products and labour. Businesses, particularly small and medium-sized enterprises, have been forced to close in affected sectors such as tourism, restaurants, and hospitality leaving millions of workers without incomes and livelihood (ILO, 2021).

2.3.2 Recommendations for Organisation Preparedness

Research provides recommendations for improved organisation preparedness for global health crises. These include:

- Resources, intensified surveillance, and capacity building should be prioritized in countries and industries with limited capacity to detect imported cases (Gilbert et al., 2020);
- Guidelines and contingency plans should be made mandatory and paired with advance employee training (Zhang et al., 2021);
- Effective risk communication should be made to various stakeholders, repeatedly (Zhang et al., 2021);
- Staff should be involved in outbreak preparation planning, and sufficient staff and materials made available to handle potential outbreaks (Rieckert et al., 2021);
- Attention should be paid to potential ethical dilemmas such as not being able to provide good care or services (Rieckert et al., 2021);
- World-wide, interdisciplinary and cross-sectoral collaborations and information sharing should be prioritized (Zhang et al., 2021);
- Companies should be integrated into governmental health contingency plans, prepare business continuity planning in the case of facility-based outbreaks, and prepare for potential psychosocial and psychological effects on employees (Fadel et al., 2020); and
- Structured ways of doing remote work should be emphasized (Hoel et al., 2021).

2.3.3 COVID-19 and Organisation Adaptation

Regardless of levels of preparedness, organisations have had to adapt to COVID-19. Adaptation refers to the cognitive, affective, motivational, and behavioural modifications made in response to a new or changing environment or event (Baard, 2014). COVID-19 has necessitated the development of novel occupational routines and measures to keep employees safe (transition adaptation) and manage long-term outcomes (reacquisition adaptation) (Lang and Bliese, 2009). Adaptation affects multiple organisational levels, involving the structural and strategic aspects of a business, shared understanding of the situation by employees, and individual openness to change (Uitdewilligen, 2021).

Research highlights both facilitators and challenges of organisational adaptation to COVID-19. Innovation is key to facilitating organisational adaptation through uncertain times. Successful organisation adaptive practices in response to COVID-19 have included offering epidemic prevention materials, flexible work hours, telework, and paid sick leave (Lin, 2021). Organisations have implemented internal contact tracing systems, temperature screening, rapid testing, and adjusted building layouts (Maintaining productivity, IOSH). A case study conducted in a 70,000-employee company by the Institution of Occupational Safety and Health (IOSH) highlighted adaptive responses such as removing unnecessary layers of governance, finding appropriate channels to get messages from leadership to staff, and tailoring responses to groups of colleagues as critical to the health and safety of employees (IOSH, 2021). Companies have introduced wellbeing initiatives and flexible working arrangements to support childcare needs. Key to successful adaptation has been ongoing communication and managed expectations as well as training and supporting managers in having conversations around the pandemic and its effects on a business (IOSH, 2021). Some adaptation initiatives have been so successful that companies intend to keep them after the pandemic. For example, hybrid models of remote work are likely to persist in companies with implemented work-from-home policies (McKinsey, 2021).

Adapting to COVID-19 on an organisational level has not been without challenges, many linked the novelty of COVID-19 and lack of organisation preparedness. Employees may perceive COVID-19 as disruptive, leaving them unable to fulfil their jobs as before (Lin, 2021). The nature of some businesses does not allow for remote work, forcing enterprises to close and/or business to decline (Cox et al., 2021). System-wide challenges for adapting to COVID-19 have included coordinating new and shifting staff roles, developing new technology, directing financial investment, rapidly developing workforce capacities, and securing access to COVID-related protective equipment (Turner et al., 2021). Additional adaptive barriers include inadequacy of emergency preparedness and response planning, bureaucratic obstacles in implementing protocols, reactive rather than proactive solutions, and disjointed responses across industries and/or regions (Torri et al., 2020).

2.4 Workplace Emergency Management

Workplace emergencies are unforeseen situations that threaten employees, customers, or the public; disrupt or shut down operations; or cause physical or environmental damage (OSHA, 2004). Though many businesses had guidelines and contingency plans in place for workplace emergencies prior to the COVID-19 pandemic, the crisis struck global workplaces in unforeseen and, in many instances, crippling ways. To help employers manage the spread of infection and its consequences, the

International Labour Organisation (ILO) published a checklist for COVID-19 management at work in April 2020 (ILO, 2020). This section details the extent to which organisations have successfully carried out the technical COVID-19 management areas recommended by the ILO.

2.4.1 Policy, planning and organizing

Many organisations rapidly developed preparedness and response plans for COVID-19 prevention at the workplace, considering different work areas and tasks, and potential sources of exposure. Health systems in the USA adopted a disaster response framework based on federal guidance. Successful components of their response included quickly increasing capacity, strategic decision making with available data, creating an agile pool of labour, and maintaining an efficient system supply chain (Hannan et al., 2021). In the Netherlands, healthcare personnel were redistributed to provide additional support for intensive care nurses (Hoogendoorn et al., 2021). Colombian hospitals, universities and professional associations came together to coordinate clinical training in response to the pandemic (Turner et al., 2021). China's occupational preparedness and response plans benefited from adaptable governance to changing situations, a culture of moral compliance with rules, trusted collaborations between government and people, and advanced technological infrastructure (Wang et al., 2020). High-risk environments like hospitals were able to establish human resource reservation for emergency response and allocate human resources for standardised staff training (Jiang et al., 2020). Conversely, research notes the lack of published protocols on redistributing organisational resources during COVID-19, and a gap in information on expanding and preparing the global workforce in pandemic preparedness plans (Buselli et al., 2021; Köppen et al., 2021). Of sixteen surveyed German states, only one had adopted an official policy on health workforce task-shifting as of May 2021 (Koppen). In Spain, researchers note that a lack of pandemic foresight and preparation resulted in feelings of violated rights and public freedoms (Ortiz, 2021). Further consequences of insufficient workplace preparedness and response include lack of PPE and supplies, concerns over lack of training, and staff resistance to wearing masks (Collins et al., 2021). Recommendations for improved pandemic preparedness and response include private-public collaborations in the drafting of emergency preparedness policies; dedicated emergency management units in organisations of sufficient size; collaborative pursuits of novel design and manufacturing solutions for PPE; and authorisation to use effective infection control measures adapted to specific workplace situations (Abbas et al., 2021; Cumbler et al., 2021; Dengler et al., 2021; Izumi et al., 2021). Because perception of safety and the threat and risk of contagion is one of the biggest perceived stressors to workers, thorough and timely

prevention and response plans are integral to the psychological as well as physical health of workers (Kubilienė et al., 2021).

Studies demonstrate the importance of consulting local public health authorities and other partners for guidance and information materials on workplace COVID-19 prevention and mitigation (Galbusera et al., 2021) and establishing workplace systems for providing up-to-date reliable information to workers. Migrant workers in Singapore, for example, were supported by a partnership with the National Centre for Infectious Diseases who created videos and patient information leaflets in native languages to explain hospitalization and isolation processes, and by access to a multilingual COVID-19 information webpage (Fan, 2021). Australian researchers have worked on strengthening communication between local communities and health care environments to improve rural workforce disaster preparedness planning (Hammersley et al., 2021). As the capacity to stay on top of and evaluate multiple external sources' guidance remains an issue for many organizations (Collins et al., 2021), such efforts can help workers make sense of rapidly changing occupational health information and encourage compliance with protocols.

The ILO recommends integrating safety and health into contingency and business continuity plans and considering altered labour related requirements such as operating with a reduced workforce (ILO, 2020). Some organizations have successfully managed this. US hospitals limited surgical staff to decrease healthcare workers exposed to COVID-19, creating a reserve workforce (Ehrlich et al., 2020). Paris's Institut Pasteur laboratory rapidly set up and rolled out a business continuity plan involving a joint on-site/off-site workforce, factoring in team-spirit and employee-feedback components (Najjar et al., 2021). But maintaining business continuity has not been without setbacks. Over 4O% of surveyed American Higher Education Institutions lacked an emergency business continuity plan prior to the pandemic and less than 60% of existing plans incorporated simulation exercises (Izumi). Hospitals in Wuhan struggled to arrange medical staff to diagnose and treat patients with COVID-19 at early stages of the pandemic (Liu et al., 2020). On a global scale, the pandemic has strained supply chains and transportation of goods and personnel (Kim et al., 2021).

One solution to minimize business disruption while keeping workers safe from COVID-19 has been the promotion of teleworking. Innovations have gone as far as web-based Tele-Befriending virtual clinics with trained volunteers and volunteer psychiatrists to help combat pandemic-related stress on workers(Fan, 2021). Nevertheless, the shift to teleworking has challenged workers and their employers (Collins et al., 2021). Organizations have stated productivity losses and workplace culture concerns with work-from-home setup (Marzban et al., 2021). In the Philippines, many educators had

to learn a new language and practice with the switch to digital courses (Aragasi and Pangandaman, 2021). Internet connectivity was also an issue. With an increased risk of cyberattacks, there is a need for policies and plans that incorporate security operations (Lloyd et al., 2021). One suggested solution involves the creation of regional cyber first responder groups to help organizations during future crises like COVID-19; another, that organizations introduce tailored cyber security awareness training based around the threats of remote working (Lloyd et al., 2021). Where teleworking is not feasible, establishing shifts can help to avoid large concentrations of workers in facilities. China was particularly proactive in establishing detailed healthcare personnel arrangements, establishing separate training groups, critical patient groups, quality control groups, epidemic preventive measures groups, and logistic support group (Li et al., 2021). Novice and proficient staff worked together to ensure adequate rest for first-line nursing staff and that experienced staff served as role models and mentors (Liu et al., 2020).

In line with national standards, organizations should expand access to paid sick leave, sickness benefits, and parental/care leave. This is particularly important for migrant workers who may lack access to social support services and for whom countries of origin often failed to advocate during COVID-19 (Rao et al., 2021). Many migrant workers have been sent back to Bangladesh during the pandemic, intensifying national socio-economic crises such as joblessness, consumption of reserve funds, and shrinking remittance inflow. In the USA, claims-making by worker organizations emerged as migrant workers' main source of pandemic support (Rao et al., 2021). These issues call for long-term preparedness and response plans for all workers including, some researchers suggest, the creation of need-based, skilled workforce databases and government-NGO collaborations to ensure accessible and equitable social support (Fan, 2021; Karim et al., 2020).

As COVID-19 prevention strategies are established, so must monitoring and evaluation mechanisms be put in place. American Urban Indian Organizations successfully identified safety teams to monitor staff for proper donning and doffing procedures and to conduct mock drills preparing staff for procedural changes (Collins et al., 2021). In Ukraine, companies regularly distribute a 'Health Questionnaire' and 'Checklist for self-assessment to staff to monitor company employee health (Dyachuk et al., 2021). A survey of diverse, multinational companies found that 76% relied on internal monitoring mechanisms to guide COVID-19 emergency management (Galbusera et al., 2021). Researchers underline the importance of regular testing of emergency strategies to ensure efficient cooperation between organizations (Klein et al., 2021), and the potential for user-centred participatory approaches to improve emergency management training and accelerate expertise

development. Finally, integrating an error-tolerance mechanism in an evolving accountability system can encourage responsible risk-taking by managers, organizations, and governmental officials. Such a system can encourage proactive actions and prevent tardiness under threat of an incoming infectious disease (Wang et al., 2021).

2.4.2 Risk assessment, management and communication

The ILO recommends assessing the risk of potential for workplace interactions and contamination of the work environment with SARS-CoV-2 and implementing measures accordingly. Examples of this have been identified in the literature. In Singapore, on-site medical teams conducted small group needs assessment of migrant workers (Fan, 2021); in Germany, special cross-organizational task forces were implemented to enable quick identification and assessment of the pandemic situation (Klein et al., 2021). A next important step is worker and management training on adaptation of risk prevention and mitigation measures. In Indian hospitals, only 37.9% of healthcare workers reported adequate education and training on COVID-19 (Sharma and Sharma, 2020). A study conducted in the USA in spring 2020 with emergency managers, transportation planners, and others involved in pandemic disaster response showed that 70% needed additional COVID-19 training (Kim et al., 2021). Donning and doffing of PPE remains a major issue during COVID-19, as is worker knowledge of health protocols and government protections (Kusumastuti et al., 2020; Sharma and Sharma, 2020), indicating additional areas in need of upscaled education and training. Due to their increased mobility, delivery workers, truck drivers and other transportation workers require special training to minimize direct contact with customers and ensure personal hygiene practices (ILO, 2020).

Management should maintain ongoing communication with workers and workers' representatives. This involves the inclusion of a robust communication plan within any organizational risk management strategy that meets the needs of local workers (Hammersley et al., 2021). Studies have highlighted the potential protective role of organizational communication that could buffer the effect of technostress and enhance self-efficacy in relation to working from home (Zito et al., 2021). In Europe, most companies have internal COVID-19 communication plans (e.g., health guidelines and posters for personnel), and maintain regular communication with health authorities (Galbusera et al., 2021). Nevertheless, communication challenges have been identified. In the UK, tensions arose during the communication and implementation of national COVID-19 testing developments due to differing perceptions on infectiousness between scientific advisors and healthcare workers (Martindale et al., 2021). Lack of clear information about COVID-19 risk may lead to individuals "catastrophizing", which exacerbates anxiety. Researchers therefore recommend regular, systematic, clear and

understandable, timely, open and sincere, uncontroversial, and consistent communication from administration leads to facilitate employee adaptation and reduce stress (Kubilienė et al., 2021). Supervisors should convey the rationale for the need to implement prevention and control measures. Open communication in shared goals and trust are critical in enhancing employee psychological safety. Autonomy, trust, and empathy also resonate well with employees, contributing to a positive perception of procedural and interactional fairness (Lee, 2021).

Regardless of organizational communication strategies, employees may face pandemic-related psychosocial risks. Urban Indian Healthcare Workers in the USA have struggled with increasingly blurred lines between home and work interactions (Collins et al., 2021). Healthcare workers in Iran faced a matrix of psychosocial risks relating to the contamination of environment and individuals, burnout, defects in screening processes, social dissatisfaction, and loss of medical staff (Khankeh et al., 2021). Chinese HCWs have also experienced complex and diverse feelings of fear, panic, anger, and helplessness induced by non-cooperation of patients, high work pressure, insufficient clinical experience, and self-accusation caused by non-efficient life-saving efforts (Zhang et al., 2020). Management should assist workers to manage these complications and new forms of work arrangements by promoting the maintenance of a healthy lifestyle and providing psychosocial and emotional support resources (Pixley et al., 2021).

2.4.3 Prevention and mitigation measures

From February to April 2021, our SFI research team conducted a rapid review and meta-analysis of available evidence on effective COVID-19 prevention and control measures used in workplace settings. Findings from this review have been published elsewhere (Ingram et al., 2021). To summarise, the review identified 61 articles that implemented and assessed COVID-19 IPC measures in the workplace. The studies showed that universal asymptomatic RT-PCR testing yielded low employee positivity rates, indicating few cases identified at potentially high cost in moments of reduced community transmission. Asymptomatic testing more effectively captured cases when implemented following facility outbreaks or environmental monitoring; however, studies generally concluded that all testing should be combined with high-quality workplace infection control practices. Staff compartmentalisation within zones and/or cohorts (worker bubbles), for example, was identified as an effective way to prevent workplace transmission. Universal masking, though a critical component of most initiatives to protect workers, proved inadequate in reducing workplace transmission when implemented alone. Masking was more effective when combined with physical barriers. While studies mentioned the added value of environmental adjustments and worker education for maximizing

masking efficiency, there was a gap in quantitative evidence supporting this. Results from contact tracing interventions varied widely, indicating the potential moderating role of community transmission rates and/or other contextual factors in contact tracing effectiveness. Nevertheless, ongoing syndromic surveillance and outbreak investigations tended towards lower post-intervention COVID-19 positivity estimates than once-off contact tracing and testing initiatives. Mathematical modelling demonstrated the role that contact tracing coverage and timeliness, and added physical distancing measures, could play in maximizing the effectiveness of test-and-trace initiatives.

Meta-analyses using random-effects models supported these findings, highlighting lower COVID-19 positivity estimates in workplace settings that implemented combined measures compared with settings that applied single measures. Though different regional and workplace contexts prevent the identification of a cure-all combination of measures, PPE, timely and thorough outbreak investigations, syndromic surveillance and testing, and staff compartmentalisation within zones emerge as important considerations.

The ILO also recommends specific arrangements for suspected and confirmed COVID-19 cases, including encouraging workers with suspected symptoms not to come to the workplace; advising workers to contact their healthcare provider or the local public health department when they have serious symptoms; and arranging isolation of any person who develops COVID-19 symptoms at the work site and subsequent disinfection of the work site and health surveillance of close contacts. It is important to consider smaller businesses who may lack the resources to comfortably and effectively separate symptomatic workers from those without symptoms. Healthcare facilities in rural America, for example, resorted to setting up tents outside due to lack of available space (Collins et al., 2021).

2.5 Managing Worker Expectations during an emergency

This section seeks to understand what employees' risk perceptions were to outbreak infections that affected their workplace by drawing on examples of COVID-19 and previous emergencies.

2.5.1 Risk Perception and Risk Awareness of Health Emergencies/Crisis

Risk perception can be defined as one's awareness and discernment of the possibility of negative events such as illnesses, infections, and death (Paek and Hove, 2017). Risk perception and awareness are of great significance because they can determine how individuals respond to crises (Paek and Hove, 2017). Specifically, workers' risk perceptions can be formed based on beliefs, past experiences, and overall understanding of the risk itself. For example, a study investigating the attitudes of

healthcare workers regarding the swine flu risk mitigation measures found that there was high acceptance of measures even though workers found them to be disruptive and a nuisance. It is put forward that a possible explanation for this acceptance could be due to corporate ethos or previous experience of the SARS pandemic in 2003 (Tan, Chlebicka and Tan, 2010).

Additionally, a survey was conducted among healthcare workers in Italy to assess their risk perception and worries regarding the COVID-19 virus. 62.18% (N=1292) of participants indicated that they were "quite worried" about the spreading of the virus. Meanwhile, 31.18% (N=648) voiced that they were "very worried" about the health effects that can arise from contracting COVID-19 (Puci et al., 2020). Medical staff were most worried (33.42%) while healthcare support staff (10.64%), and administrative staff (10.53%) were least worried about the health outcomes associated with the virus. Furthermore, a study investigating teachers' risk perception of COVID-19 in their workplace found that 35% of teachers considered their chance of experiencing a severe dose of COVID-19 to be quite high and 47% of teachers felt that parents were quite negligent and acted out of self-interest (Weinert et al., 2021).

Similarly, healthcare workers feared contracting the earlier Swine Flu from a decade ago. Face-to-face interviews with healthcare workers from a regional hospital in Hong Kong were conducted. One worker voiced their concern about the death rate surrounding the Swine Flu (Lam and Hung, 2013):

"I am extremely worried about contracting the disease because the death rate of HSI is high, much higher than the common seasonal flu." (p.243)

However, perceived risk and anticipations differed between workers as indicated. For instance, one employee voiced that her experience with the SARS pandemic influenced her understanding of the severity of the Swine Flu pandemic (Lam and Hung, 2013):

''I have no special feelings towards HSI, because I have experienced the SARS outbreak. The severity of SARS is far much higher than HSI. As I have come through the challenge of SARS, the threat of HSI to me is relatively mild.'" (p.243)

While personal views about risk perception of a disease can influence an individual's reaction, it is important to mention that misunderstanding or limited access to knowledge about the disease can impact one's level of perceived risk. For instance, a study examining the knowledge and perceptions of COVID-19 among healthcare professionals, medical students, and dental students discovered that only 52% of participants were aware of the number of days between when you contracted a disease and when symptoms may appear (Abdulwahab et al., 2021). Nevertheless, only 30.7% of participants

in the study were knowledgeable about the various ways in which COVID-19 can be transmitted. Hence, highlighting that sufficient knowledge about COVID-19 is of paramount importance to combat improper practices towards reducing the spread of the virus (Abdulwahab et al., 2021).

2.5.2 Occupational Management Strategies to Help Workers Cope with Emergencies / Crisis'

Although literature concerning the management of workers expectations during emergencies is scarce, literature is available surrounding occupational health and safety strategies to enhance a working environment. Using the example of the current COVID-19 pandemic (Chang et al., 2021) present two models, prevention-based public health model with the total worker health (TWH) that can be adopted to help employees cope with the risk associated with emergencies.

2.5.2.1 Public Health Model

The Public Health Model presents three forms of interventions: Primary, secondary, and tertiary. The purpose of primary interventions is to reduce exposure risk by means of disinfection or changing the behaviours that may increase the possibility of becoming ill or injured. Secondary interventions, however, seek to minimise the effects of a disease or injury that already occurred, which are usually put in place as early as possible to reduce the severity of the outcomes, such as screening. Lastly, tertiary interventions seek to support individuals who have been severely impacted by an illness or injury that is ongoing and strives to help these individuals manage their health-related problems or injuries (Chang et al., 2021).

2.5.2.2 Total Worker Health

Total Worker Health seeks to enhance the safety, physical, and mental well-being of employees which in turn boosts efficiency among workers (Chang et al., 2021). The efficient approach to adopt in workplaces is not only to protect employees from being harmed, but also aims to encourage employees' physical and mental well-being (Schwatka et al., 2021). TWH takes into consideration that working conditions and the overall nature of the working environment play a role in workers' health and well-being. This approach promotes a healthy work-life balance and understands the significance of protecting workers in order to alleviate stress, injuries, and illnesses, which also takes into account workers, the workplace, and employment (Chang et al., 2021). Despite the fact that TWH is instrumental to workers, it further helps organisations by improving creativity and efficiency as well

as reducing expenses associated with injuries and illnesses that may occur in the workplace (Chang et al., 2021).

In conclusion, workers' risk perception at the workplace can be guided by past experiences as well as sufficient knowledge regarding the emergency. Therefore, a lack of information or miscommunication of knowledge risks the emergency being dismissed or its severity undermined. Despite literature being minimal regarding how management can shape workers' behaviours of coping and managing emergencies and crisis, current literature nonetheless accentuates the importance of adopting good OSH practices to reduce negative effects on physical and mental health among workers.

2.6 Potential impacts to workers from workplace disruption

The onset of the COVID-19 across the world has impacted various areas of society. Workplaces were at the forefront of the pandemic which inevitably shifted the organisational structures in working environments which in turn impacted employees. The global pandemic induced a categorisation of workplaces; essential and non-essential bringing to light the workplaces that are integral to society (van Zoonen & ter Hoeven, 2021). Furthermore, throughout 2020, various adjustments occurred in workplaces worldwide including the introduction of COVID-19 protective measures, the transition from office working to remote working and the temporary closing of workplaces that were deemed unessential. Previous literature has also looked at the impact of natural disasters on workplaces and workers and declared that such events can propose both physical and psychological implications for employees (Samantha, 2018).

Given the constant changes that occurred within workplaces throughout the current pandemic this poses a need to understand the impact workplace disruption has on employees. This section provides a summary of literature that discusses workplace disturbances and its potential impact on workers, including employee mental health, job satisfaction, financial health and career-related fears, drawing on examples of global infectious diseases such as the SARS 2003 epidemic, the H1N1 (Swine Flu) pandemic, and COVID-19 in addition to natural disasters that have impacted workplaces and employees.

2.6.1 Workplace Disturbance and Employee Mental Health

Major disturbances in workplaces are not only overwhelming for organisations but can be difficult to keep under control which as a result can be psychologically distressing for employees (van Zoonen & ter Hoeven, 2021). Arguably, the adjustment from the usual mode of working to a completely new mode of working is challenging which requires employees to adapt to a new normal. As exemplified throughout the COVID-19 pandemic, major changes occurred in our working lives including a compulsory WFH policy, no face-to-face interaction with colleagues and an increased workload for essential workers (Tušl et al., 2021). As a consequence, the separation from colleagues can produce feelings of loneliness (van Zoonen & ter Hoeven, 2021). The transition from office working to remote working requires employees to create a new workspace and to adapt to different modes of communication. Meanwhile, a lack of support caused by WFH could be a challenge for workers which may produce negative effects on their wellbeing (Tušl et al., 2021). Additionally, other global health problems such as Ebola, SERS, and MERS have been reported to have had a mental impact on healthcare workers in recent years (Bettinsoli et al., 2020).

Interestingly, Tusl et al (2020) reported that WFH could also have positive influences when evaluating the impact of COVID-19 on work, private life and well-being among German and Swiss employees. This may potentially be because of an increase in flexibility, autonomy and leisure time since the commute is no longer compulsory. However, older employees (54-65 years old) typically did not see WFH as a benefit in their work life, possibly due to the struggle to adapt to the new situation. Furthermore, a qualitative study carried out in the UK investigated employees' perceptions of workplace support during natural disasters by interviewing employees in healthcare, the commercial sector, and emergency services. Though some employees reported an increase in confidence as they adapted well to the situation, the impact of a disaster or disturbance in the workplace was more likely to generate negative feelings rather than positive feelings. This included feelings of fear, shock, concern, as well as feelings of guilt (Brooks et al., 2019). However, employees voiced that the extent to which they could become emotionally impacted by the disaster was dependent on the intensity of the disaster and the type of disaster. Human-initiated disturbances often have a bigger emotional impact than natural disturbances as reported (Brooks et al., 2019).

An example of the impact of workplace disturbances can be further demonstrated by research surrounding the mental health impact of the H1N1 epidemic on healthcare workers from three hospitals in Kobe City in Japan in 2009. The study found that fatigue was more prevailed among nurses than doctors as a result of dramatic increase of workload; anxiety about the infection was more

common in workers in their 20's than older employees; and employees over the age of 40 had stronger feelings of being protected from infection than employees in their 20's (Matsuishi et al., 2012). Similarly, another research study examined the mental health impact of the SARS 2003 outbreak on healthcare workers, which found that the increase in vigilance among hospital staff was stress inducing, which can be alleviated by the implementation of regiment PPE requirements and control measures at work (Chan & Huak, 2004).

Another research study examined the relationship between organisational change and employee mental health. Specifically, the researchers investigated the exposure to multiple changes in the workplace and its impact on employees from both personal and occupational level (Fløvik et al., 2019). By surveying a large sample of Norwegian employees, the findings reported a statistically insignificant association between employee mental health and organisational changes such as temporary closure. Nevertheless, other factors were associated with poor mental health among employees including job insecurity, workload, and job dissatisfaction (Fløvik et al., 2019)

2.6.2 Workplace Disturbances and Employee Job Satisfaction

A study focused on the impact of the natural disaster regarding absenteeism, job satisfaction and job performance among employees who survived from the Wenchuan earthquake. It found that among the 206 employees who participated in the study, employee absenteeism and job satisfaction decreased but work performance was not impacted (Qin & Jiang, 2011). On the contrary, the COVID-19 pandemic brought about huge changes to the workplace including the implementation of many protective measures which can be even more challenging for employees working on the frontline during the pandemic.

For example, a study on burnout and job satisfaction among physicians found that factors of PPE insufficiency and increased workload contributed to a decrease in job satisfaction during the COVID-19 crisis. One employee voiced that the availability of PPE played a role in job satisfaction (Alrawashdeh et al., 2021): "I felt a swing between satisfaction and dissatisfaction during my duty, depending on the availability of personal protective equipment at the workplace". Additionally, the link between level of job satisfaction and salary was observed, as the implementation of workplace lockdowns and preventive measures affected individuals with unstable incomes. To illustrate, the study indicated that physicians in their early career who earned less had lower levels of job satisfaction (Alrawashdeh et al., 2021).

Furthermore, job satisfaction among healthcare workers in Kenya and Ghana was assessed during the ongoing COVID-19 pandemic, which found that a high level of stress was associated with lower levels of job satisfaction (Afulani et al., 2021). As reported, WFH may also have a negative impact on overall work-life balance and thus decrease job satisfaction (Irawanto et al., 2021).

2.6.3 Workplace Disturbance on Financial Health and Job Security

As aforementioned, the onset of a workplace disturbance has the power to change employees' daily work routine. Apart from adaptation impact on employee's mental health and job satisfaction, workplace disturbance may also produce career-related fears among workers. It is further expected that income loss and job insecurity may be a longstanding stressor as a result of the covid-19 pandemic (Hamouche, 2020). For example, many workplaces across the world were forced to temporarily shut down, wage subsidies and welfare payments were introduced throughout the course of the current pandemic. Additionally, COVID-19 affected employment status not only on those who work full time, but also on individuals who were self-employed or employed on a part-time or temporary basis (Chirumbolo et al., 2021).

A longitudinal study was conducted by online survey consisting of 6,040 participants in Canada, regarding the social, financial, and psychological stress that occurred as a result of COVID-19. It was reported that COVID-19 was a high threat to individual's financial situation (28.1%) and 41.5% of individuals reported COVID-19 was a threat to their jobs/businesses (Robillard et al., 2020). It was further reported that during the occurrence of an outbreak 7.9% suffered a pay cut while 11.1% lost their jobs.

Similarly, another study was carried out which examined the loss of financial well-being during the COVID-19 pandemic among 1,222 Brazilian employees from both public and private sectors. Financial loss was assessed by asking employees the level of change in their outcome. The results depicted that 71.4% of employees (with job security) from private sectors earned a monthly income of below 1,110 dollars. 52.41% of public servants had an income of between 1,110 and 2,750 dollars a month. Interestingly, 79.19% of public servants with job security did not experience any financial loss (Vieira et al., 2021).

Furthermore, not only does a workplace disturbance like COVID-19 impact on employees' financial health but it can also impact their perception of their careers post pandemic. A recent study was conducted among Flemish employees involving employees under the age of 65 via an online survey.

The results demonstrated that 21.1% of participants feared losing their job during the pandemic and 26.2% concerned about missing a promotion due to the COVID-19 (Lippens et al., 2021). Such concern was higher amongst employees who were migrants or those who were temporarily unemployed due to the pandemic. To illustrate further, 49.9% of employees disclosed their concerns about the COVID-19 pandemic having an impact on their income (Lippens et al., 2021).

Following the reporting of the research of workplace disturbances like the ongoing COVID-19 pandemic on financial health and career-related fears, it is evident that workplace disturbances can generate feelings of worry for employees surrounding their income, job security, and career-related goals. Given the impact of workplace disruption on employees it is important that workplaces can provide the necessary resources and support to help employees adapt to the changes they experience and to help alleviate feelings of stress, fear, and anxiety.

2.7 Potential long-term implications to workplaces arising from emergency adaptation

The onset of the COVID-19 massively impacted workplaces all over the world and will undoubtedly change workplaces post-COVID-19. The long-term implications to workplaces arising from adaptation and adherence to protective measures in emergency situations is still to be understood. However, ongoing literature puts forward some potential long-term implications to workplaces that were affected by the COVID-19 pandemic.

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2.7.1 Remote Working – A New Normal Post COVID-19

The onset of the COVID-19 pandemic generated changes to how we work and live and will ultimately bring about ‘a new normal’ going forward (Kolakowski et al., 2021). While some jobs and sectors will shut down due to covid-19, others will flourish, and new workplaces will develop going into the future (Hite and McDonald, 2020). Such that it is believed that remote working will become a permanent

part of our working lives (Cserháti, 2020). The emergence of the pandemic resulted in workplaces having to quickly adapt to the covid-19 guidelines that were imposed by government bodies all over the world. Including, social distancing, mask wearing, and temporary closure of workplaces. Teleworking became the new normal and the pandemic is said to be revolutionary for online meetings (Kolakowski et al., 2021). Additionally, given that many employees had the opportunity to work from home, it is likely that workers will want to consider working from home in the future (Green et al., 2020). For example, a survey conducted among 2,700 workers across nine countries found that over a third of workers would leave their job if forced to return to their workplace (Courtney, 2021). There is a positive attitude surrounding a hybrid working approach in workplaces, as it provides the worker with more autonomy and choice as well as providing balance in shaping work around everyday life (Ro, 2020).

Furthermore, literature voices some benefits surrounding the onset of home working caused by the pandemic which can be continued going into the future. According to (Kolakowski et al., 2021), the use of zoom for online meetings or conferences has been positively accepted. Insofar that, using zoom in the future can save time and energy and reduce the need for travel and in such a circumstance, it is expected that employers' attitudes will continue to change, and employees will insist on flexible working arrangements. A research study investigated how Flemish employees perceive remote working. 52% of participants held a positive attitude towards working from home and 50% were in favour of having more online meetings in the future while 62.7% of Flemish employees in this study were open to working from home post COVID-19 (Baert et al., 2020). Similarly, Boston Consulting Group (BCG) undertook a survey to assess workplaces in the future and discovered that roughly 40% of employees would opt for remote working post covid-19 while 37% of companies expect 25% of employees to select a hybrid approach in the future (BCG, 2020). Furthermore, a survey was carried out among healthcare providers from 56 countries and found that half of the participants would prefer a blended working approach in the future and one potential reason for this is the accessibility of virtual platforms (Hameed et al., 2021). Another study carried out by the National University of Ireland in Galway found that among those working remotely during the pandemic, 95% of those participants were interested in continuing remote work after the pandemic (Kenny, 2021). Consequently, the adaptation of the COVID-19 emergency has led workplaces and workers to see the benefits of remote working.

2.7.2 An increase in Mental Health and Safety Awareness in the Workplace

Given the major impact COVID-19 has had on workplaces all over the world, it is no surprise that attitudes towards mental health and safety in the workplace may shift after the pandemic. However, literature surrounding mental health and safety awareness as a long-term implication is minimal. It is predicted that this ongoing acknowledgment of mental health at work will continue even after the pandemic (Huff, 2021). According to the Institution of Occupational Safety and Health explains that some potential reasons for this shift in attitude may include the familiarisation of protecting oneself throughout COVID-19, influences from the media, concerns of getting infected in the workplace, and an increase in knowledge of hazards (IOSH, 2004).

Mental health problems that occurred in the workplace because of the COVID-19 pandemic include anxiety, depression, PTSD, and sleep disorders and were common among frontline workers throughout the pandemic. Causes of mental health problems in workplaces consisted of job insecurity, social isolation, and concerns surrounding overall job and career (Giorgi et al., 2020). Essentially, employees deemed as essential during the pandemic were at risk of experiencing anxiety and an increase in stress while non-essential employees or those working from home could potentially experience feelings of social isolation (Davidsen and Petersen, 2021). It is suggested that workplaces can help reduce mental health problems among employees by way of improving basic foundations, risk mitigation measures, PPE stock, and providing workers with mental health related programmes (Giorgi et al., 2020). Accordingly, it is said that companies are now taking more positive steps towards the mental health of their employees which consists of additional paid leave, mental health training programmes and workdays with a mental health focus (Greenwood and Anas, 2021). Furthermore, 54% of participants believed that mental health became a priority at work which is an increase of 41% in 2019, and 47% of employees had the necessary resources to support them if they experienced mental health problems or presented with symptoms (Greenwood and Anas, 2021).

Undoubtedly, the COVID-19 pandemic has had a major impact on societies worldwide, and workplaces were at the forefront of this impact. While literature is minimal regarding the potential long-term implications to workplaces arising from emergency adaptation, possible inferences can be made towards what we can expect to see in workplaces post-workplace disruptions. As exemplified in this literature review, it is likely that the current pandemic will shift the way in which we work. Remote working will remain a permanent part of work or at least to some degree. Furthermore, the use of online meeting platforms will remain as many workplaces will view these platforms as a way of cutting

back on travel costs and increasing flexibility and convenience for employees. Additionally, it is plausible that we will see changes to how mental health is approached in workplaces.

Chapter 3 Methodology

3.1 Introduction

This work package (WP2) utilised focus groups with OSH / HR personnel to explore on a deeper level their experiences during the pandemic through a discussion process that has the capacity to provide more information than a survey. In doing so the findings of the focus groups can be used to develop a more refined survey instrument for future usage.

The focus group is a particular type of group interview where the moderator (or researcher / evaluator) asks a set of targeted questions designed to elicit collective views about a specific topic (Fontana & Frey, 2005; Merton & Kendall, 1946). The character of participants' interactions as well as the type of data collected distinguish the focus group from other methods—specifically, participants interact with ''each other as well as the moderator'' (Wilkinson, 1998, p. 182). Focus groups may be characterised as a particular kind of group interview or as a collective conversation, reflecting substantial variation in the degree to which groups are managed by the researcher or are allowed to be more free flowing (Kamberelis & Dimitriadis, 2011; Krueger & Casey, 2009).

Traditionally, this would engage a group of six to eight participants purposefully selected based on a significant homogeneous characteristic in a face-to face discussion of a certain set of topics. However, limited by the COVID-19 circumstance, the focus groups were designed to be conducted via online Zoom™ meeting. To ensure the communication efficiency of online focus groups, the number of participants was limited from four to six participants per focus group (Krueger, 2009).

3.2 Research Framework and Ethical Considerations

Ethical approval was granted by UCD Human Research Ethics Committee (LS-E-20-182-Buggy) and the ethical aspects were considered throughout the research.

In advance of the focus groups, the participants were provided with an information sheet and consent form to ensure they fully understand their participation would be voluntary and no sensitive questions would be asked during the focus group interview. Should any organisational sensitive data emerge during the workshops, in the transcripts it would be deleted and not included in analysis.

The focus groups were recorded audio visually by using the function provided by ZOOM™. Upon completion of the recordings, they were downloaded from the ZOOM™ account to a secure password

protected Google Drive (linked to UCD accounts with no external access outside UCD) and copied to an external password protected encrypted hard drive as a backup. During the data analysis, participants were assigned pseudonyms to be de-identified in the transcription process. Only the core research team members have access to the transcript files in the password protected Google Drive.

3.3 Focus Group Recruitment

The 67 OSH or HR professionals recruited were assigned across 15 scheduled focus groups in April and May 2021, however some OSH or HR professionals registered could not fit any of the 15 scheduled time slots into their diaries, so ultimately 60 participants participated. The further one-on-one interviews were also scheduled with the participants who were willing to provide more in-depth information on the topic.

Table 3.1 Participating Organisation Anonymised Information

Participant pseudonyms	Organisation Sector	Industry	Organisation Size
Biopharmachem 1	Manufacturing	Pharmaceutical / Bioscience	Large
Biopharmachem 2	Manufacturing	Pharmaceutical / Bioscience	Large
Biopharmachem 3	Manufacturing	Pharmaceutical / Bioscience	Large
Biopharmachem 4	Manufacturing	Chemicals / Pharmaceutical	Large
Construction 1	Construction	Building / Telecommunications	Large
Construction 2	Construction	Engineering Consultancy	Large
Construction 3	Construction	Engineering Consultancy	Medium
Construction 4	Construction	Construction	Large
Construction 5	Construction	Construction	Small
Construction 6	Construction	Construction	Large
Construction 7	Construction	Construction	Large
Construction 8	Construction	Construction	Large
Construction 9	Construction	Construction	Medium
Construction 10	Construction	Construction	Large
Construction 11	Construction	Construction	Medium
Consultant 1	Administrative Support	OSH Management Consultancy	Small

Participant pseudonyms	Organisation Sector	Industry	Organisation Size
Consultant 2	Administrative Support	OSH Management Consultancy	Small
Consultant 3	Administrative Support	OSH Management Consultancy	Small
Consultant 4	Administrative Support	OSH Management Consultancy	Small
Consultant 5	Administrative Support	OSH Management Consultancy	Small
Consultant 6	Administrative Support	OSH Management Consultancy	Medium
Financial 1	Financial	Banking	Large
Financial 2	Financial	Insurance	Medium
Financial 3	Financial	Health Insurance Provider	Medium
Healthcare 1	Public Sector	Major Hospital	Large
Healthcare 2	Public Sector	Educational / Care	Medium
Healthcare 3	Public Sector	Healthcare Provision	Large
Healthcare 5	Public Sector	Major Hospital	Large
Healthcare 7	Accommodation / Hospitality	Private Nursing Home Management	Large
Healthcare 8	Accommodation / Hospitality	Private Nursing Home Management	Large
Hospitality 1	Accommodation / Hospitality	Hotel	Medium
Infrastructure 1	Electricity / Gas	Telecommunications Support	Large
Infrastructure 2	Electricity / Gas	Electricity	Large
Infrastructure 3	Electricity / Gas	Energy Infrastructure	Large
Infrastructure 4	Public Sector	Infrastructure Division	Large
Infrastructure 5	Public Sector	Public Passenger Management	Large
Infrastructure 6	Public Sector	Production Planning Division	Large
Infrastructure 7	Transportation / Logistics	Airport Management	Medium
Infrastructure 8	Electricity / Gas	Electricity	Large
Infrastructure 9	Electricity / Gas	Oil Refinery	Medium
Infrastructure 10	Public Sector	Transport Advisory Agency	Medium
Local Authority 1	Public Sector	Local Authority	Large
Local Authority 2	Public Sector	Local Authority	Large
Local Authority 3	Public Sector	Local Authority	Large

Participant pseudonyms	Organisation Sector	Industry	Organisation Size
Local Authority 4	Public Sector	Emergency Service Support	Medium
Local Authority 5	Public Sector	Local Authority	Large
Logistics 1	Transportation / Logistics	Logistics Division for pharmaceutical distribution	Large
Logistics 2	Transportation / Logistics	Waste Management	Large
Manufacturing 1	Manufacturing	Multi-sector business	Large
Manufacturing 2	Manufacturing	Food manufacturing	Large
Manufacturing 3	Manufacturing	Engineering / construction manufacturing	Small
Manufacturing 4	Mining / Quarrying	Mining	Medium
Manufacturing 5	Manufacturing	Printing	Small
Manufacturing 6	Manufacturing	IT Equipment	Large
National Agency 1	Public Sector	Health Services	Large
National Agency 2	Public Sector	Government Cross Departmental Office	Medium
National Agency 3	Public Sector	Food Manufacturing Regulation	Large
National Agency 4	Public Sector	Agriculture	Large
National Agency 5	Public Sector	Broadcasting / Media	Large
National Agency 6	Public Sector	Emergency Service Support	Large

Focus group recruitment was undertaken in February and March 2021 with the assistance of OSH professional networks facilitated by IBEC, the CIF, Health and Safety Review Journal and the alumni network of the UCD Centre for Safety and Health at Work as well as an Irish OSH professional group via LinkedIn.

The focus groups were discussion-based small groups conducted online. The moderator CB asked all the questions and two assistant moderators YC and MR took notes during the discussion. At the beginning of each focus group, CB asked the participants for their oral or type-in consent to participate in the video-recorded discussion. By using the recording function, the videos with the auto-transcribed subtitles were usually available within hours. As the auto-transcribed subtitles were not always

correct, they were used as the preliminary drafts to facilitate the data transcription by the research team.

3.4 Focus Group Format

Participants working in the same sectors were designed to be categorised into the same group so that peers can exchange their experiences and stimulate each other during the conversation. For example, FG2 participants were all from the Biopharmachem sector and FG3 participants were all working in the sector of Transportation/Logistics. Due to the variable organisational characteristics of the participants recruited, some focus groups were designed as Small/Medium or Large Mixed based on the participants' company size. Each focus group lasted 120 minutes with a 5-minute break in the middle of the discussion.

3.5 Themes

The focus group interview questions were designed according to four predefined themes based on the literature and initial discussions with the projects research steering committee and key stakeholders: preparedness and support; actions and impact on the organisation; the impact on workers; and the positives and negatives of the last year and what would keep you moving forward. Each theme includes three parts of questions: poll questions, prompt questions and potential follow up questions. The protocol has been reviewed by the experts in the research team with multiple backgrounds (e.g. OSH, medicine, psychology and public health). There are also some emergent themes such as themes in relation to worker mental health, which are presented in Chapter 8 in this report.

3.6 Focus Group Quantitative Questions

To achieve the research purpose, the protocol was composed of two parts: questions (qualitative) and survey poll (quantitative). In a mixed methods study, a preliminary quantitative survey can be adopted as one of the stimulus materials for focus group facilitation. In our case, the survey questions were embedded into the online format meeting by using a polling function. Aligned with the predetermined themes, there were four sets of five close-ended survey questions to be responded before the discussion of the topic. The responses to the survey were anonymous, the results of which were saved and subsequently integrated to a Google Excel sheet for an overall calculation and comparison.

3.7 Focus Group Piloting

A 2-hour full session pilot test was conducted by the research team prior to data collection to ensure the online instrument functioned as planned. The pilot revealed some minor adjustments were needed regarding focus group pacing and ensuring all participants were able to take part equally.

3.8 Thematic Analysis

The transcripts of the audio recording were generated by ZOOM™, which were verbatim corrected by the researchers following a playback of the original audio files downloaded. Each of the focus group transcripts contained approximately 20,000 words. All individuals and organisations were de-identified in our report to align with our ethical approval and GDPR guidelines. The participants have been assigned with pseudonyms composed by their working sectors with numbers (e.g., National Agency 1 and Manufacturing 2).

Following a conventional analysis approach (Hsieh & Shannon, 2005), open coding of data was then conducted under each of the themes by highlighting the exact words used by the participants to capture key thoughts or concepts. Reflexive notes were also made as the inductive coding progressed, and the codes were subsequently categorized into meaning groups based on the links between them. For example, based on the characteristics of emotions emerged during different phases of COVID-19 pandemic, the mental health related issues identified were sorted into three groups: pre-adaptation, during adaptation and post-adaptation. The codes/themes were consistently refined through critical dialogues between the researchers, and the analysis was subsequently adjusted deductively after the agreement reached on each update. Through such an iterative process, the final themes/subthemes were thus conceptualized as presented in the result section (Clarke & Braun, 2017).

Rigor and trustworthiness have been considered throughout the study (Denzin & Lincoln, 2005). First, credibility was ensured by data collection triangulation (focus group interviews and quantitative poll questions) and researcher triangulation when analyzing the data. For example, the coding of all qualitative data was completed by five independent coders after an intercoder reliability (ICR) assessment (O'Connor & Joffe, 2020). Specifically, the initial coding round was deductively completed by the primary coder YC, who color coded transcripts in Microsoft Word based on the four topics pre-identified in the protocol. During this process, YC took reflective notes, proposed sub-themes within each category, and chose a transcript (FG10) for ICR assessment. While coding the FG10 transcript, YC developed a primary coding frame by inductively creating an extensive set of descriptive codes under

each sub-theme using Nvivo. To assess the level of agreement, coders coded the same part of the transcript independently using the primary coding frame. ICR was calculated based on Cohen's kappa coefficient using the "coding comparison" function in NVivo. After discussing divergence and refining the themes/codes, remaining transcripts were assigned to coders for thematic analysis. Relevant findings from other research are also discussed as a triangulation. Second, thick descriptions of the theme identified were provided which enable the readers to evaluate the possibility of transferability of the study findings. Finally, the dependability was achieved as the research procedures were transparent and clearly documented. Therefore, the confirmability was deemed established as the interpretations were cross-checked by the researchers who have multidisciplinary backgrounds in the team.

Following the completion of the thematic analysis the design and testing of a quantitative survey instrument for employees was initiated. This process is further described in Chapter 9.

Chapter 4 (Theme 1) Workplace Preparedness and Support

4.1 Introduction

The first official COVID-19 case was reported by Wuhan Municipal Health Commission on December 31, 2019, in the Hubei Province, China (WHO, 2020a), though there had been news filtering globally in public health circles since November 2019 of a novel pathogen emerging in Wuhan. Thereafter, many healthcare systems worldwide rapidly triggered an emergency status to cope with the anticipated increased influx of COVID-19 patients (Griffin *et al.*, 2020). In comparison, non-healthcare workplaces may not have made full use of the time gap before the virus hit domestically. It is understood that many organisations did not start preparation until March 2020, when the World Health Organisation (WHO) officially announced COVID-19 as a global pandemic (WHO, 2020b). Substantial research has focused on how healthcare sectors (e.g., nursing home) (Kaito, Matsumura and Yamamoto, 2021; Miller *et al.*, 2021) or hospital departments (Liu MBBS *et al.*, 2020; Möckel *et al.*, 2020) prepared for the pandemic in the early stages and the lessons learnt.

In non-healthcare occupational settings, existing research has examined many effective control measures in these workplaces, including engineering controls, administrative controls, and the use of personal protective equipment (PPE) (Rafeemanesh, Ahmadi and Memarzadeh, 2020). Engineering controls aim to separate the employees from a hazard and associated risk(s), such as the separation of symptomatic employees from others to halt the spread of the disease, or separation of the staff from customers using plastic and glass barriers (Vali *et al.*, 2020; Health Service Executive, 2021). Administrative controls in the prevention and control of infectious diseases are also deemed important. For example, the organisation can limit the number of employees in the workplace by implementing teleworking strategies, or reducing working hours, or even temporarily shutting down the workplace (Khosravizadeh *et al.*, 2021). The use of PPE is typically the last approach for risk prevention in workplaces but considering the high contagiousness and severity of COVID-19, face masks have been made mandatory as an effective control measure (Liao *et al.*, 2021). Nevertheless, little research investigates how employers or management perceived the threat of COVID-19 in its early stages as it began to spread globally, their motivation to prioritise safety-related measures in their workplaces to prevent the disease, or their decision-making process on early COVID-19 preparation.

During the early outbreaks of COVID-19 in China, workplaces in other countries had approximately two months to prepare an emergency response plan to the pandemic (Ru, Yang and Zou, 2021). If workplaces prioritised safety measures and initiated COVID-19 preparedness in a timely fashion, infection risk could be optimally reduced, as well as the associated impacts that may potentially be negative on workplaces. Considering that the contexts may differ in each country or territory, this study therefore aims to explore how workplaces in the Republic of Ireland prepared for the pandemic when receiving information from other countries about COVID-19, through focus group interviews with OSH and/or HR professionals from various occupational settings.

4.2 Poll Results

Figures 4.1 to 4.5 provide the results of the quantitative questions asked as part of this theme's discussion in the focus groups.

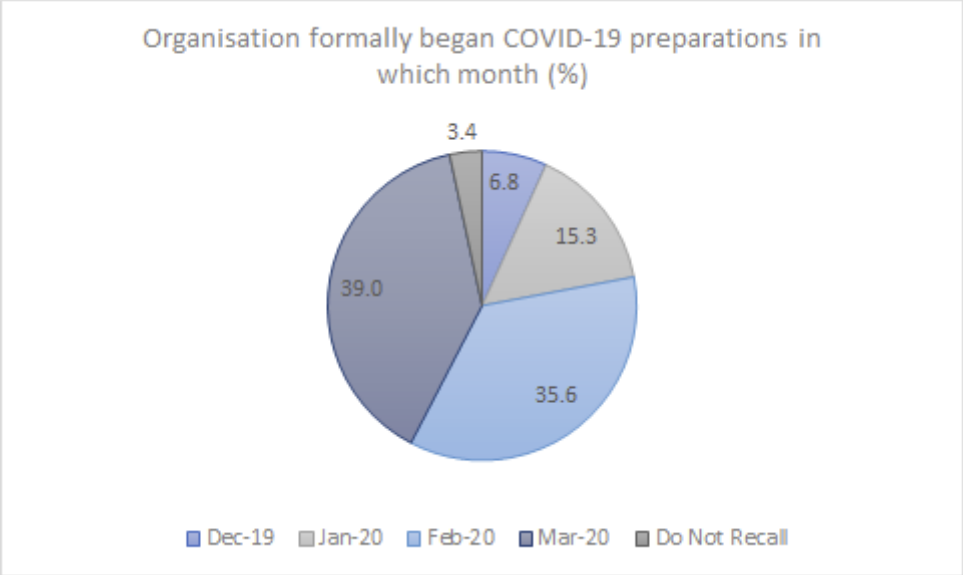

Figure 4.1 When did your organisation formally begin COVID-19 preparations (n=60).

Just over half of the participants indicated they began preparations in January and February but close to 40% indicated that their organisation did not commence preparations for COVID-19 until March of 2020 - the month when the pandemic was officially declared.

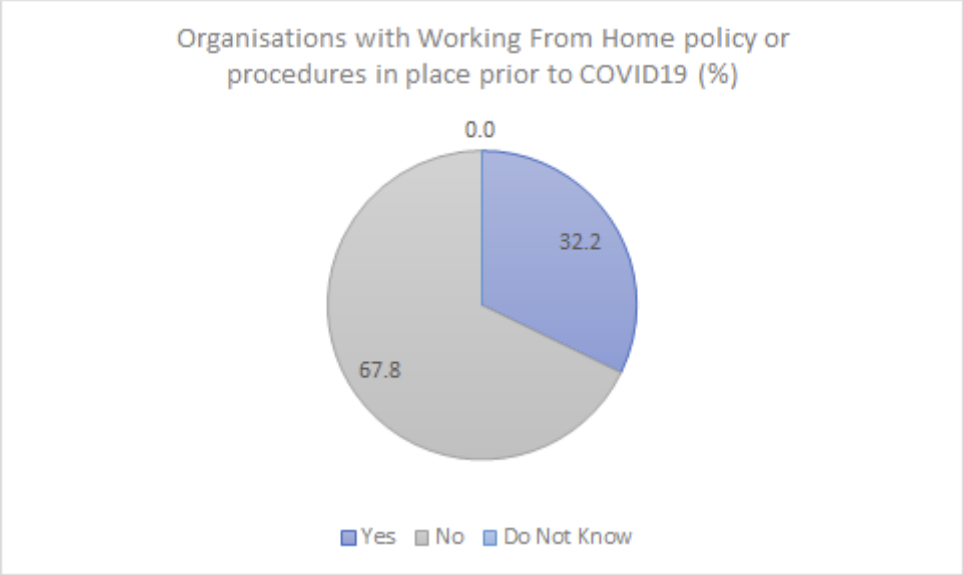

Figure 4.2 Did your organisation have Working From Home policy or procedures in place prior to COVID19 (n=60).

Additionally, when focus group participants were asked "Did your organisation have a Working from Home policy or procedures in place prior to COVID-19?" approximately a third affirmed that they had such a policy in place.

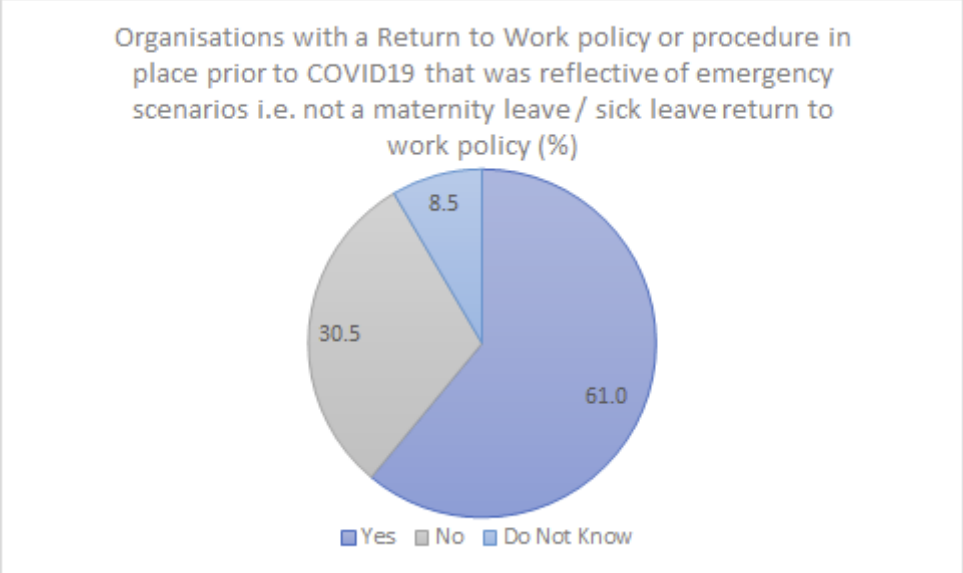

Figure 4.3 Does your organisation have a Return to Work policy or procedure in place prior to COVID19 that was reflective of emergency scenarios i.e. not a maternity leave / sick leave return to work policy (n=60).

Nearly two-thirds of participants disclosed that their organisation did have a return to work policy or procedure in place prior to COVID-19 for an emergency scenario.

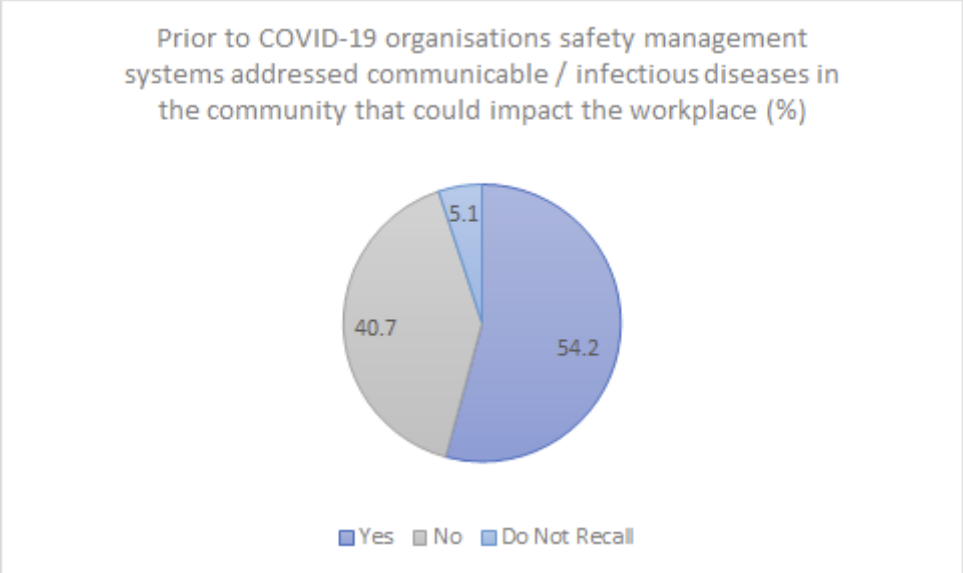

Figure 4.4 Prior to COVID-19 our safety management system addressed communicable / infectious diseases in the community that could impact your workplace (n=60).

Over half of participants expressed that yes their safety management system did address communicable/infectious disease in the community that could impact their workplace.

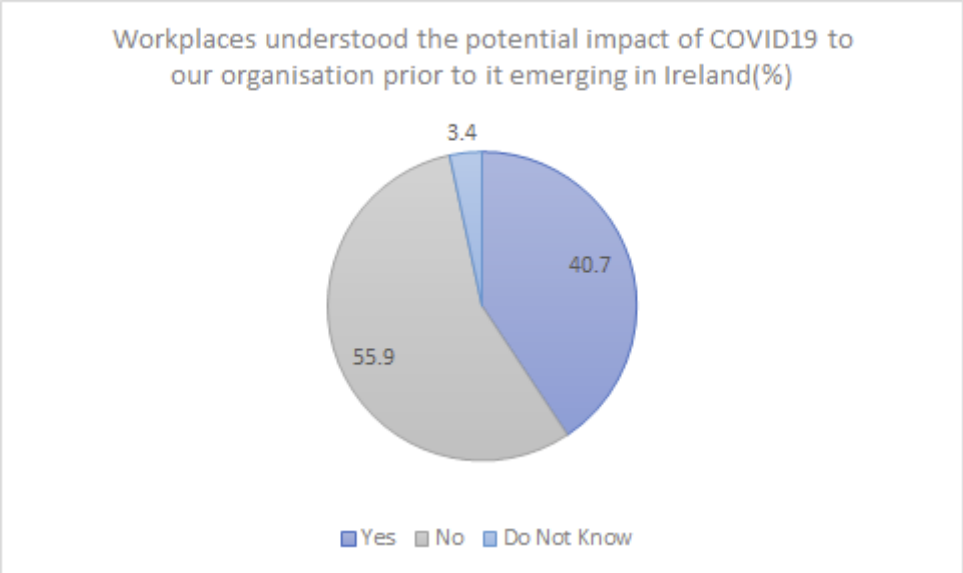

Figure 4.5 My workplace understood the potential impact of COVID19 to our organisation prior to it emerging in Ireland (circa mid-February 2020) (n=60).

Finally, less than half of participants indicated that their workplace understood the possible impact COVID-19 could have on the workplace before the onset of the pandemic in Ireland.

4.3 Perception of COVID seriousness

Risk perception is a central characteristic of many health-behaviour theories. According to the Protection Motivation Theory, protection motivation is a consequence of risk or threat assessment and coping appraisal. Threat assessment consists of estimating the hazard of contracting a disease (perceived vulnerability or susceptibility) and estimating the seriousness of a disorder or sickness (perceived severity) (Rogers et al. 1983).

In this study, the theme 'perception of COVID seriousness' is presented from two perspectives: 1) management perception of COVID seriousness, and 2) general preparedness for public health emergencies. The perceptions of pandemic-associated risk are key factors among management and employees contributing to increased participation in preventive measures.

4.3.1 Management Perception of COVID seriousness

Risk perception is a central characteristic of many health-behaviour theories. According to the Protection Motivation Theory, protection motivation is a consequence of risk or threat assessment and coping appraisal. Threat assessment consists of estimating the hazard of contracting a disease (perceived vulnerability or susceptibility) and estimating the seriousness of a disorder or sickness (perceived severity) (Rogers et al. 1983).

Based on our findings, there are a variety of attitudes regarding the seriousness COVID-19 presented among OSH management teams. Most OSH professionals were aware of the seriousness of the virus and the prevention measures were thus prepared in an early stage.

National Agency 1: "In fairness, yes, so I would have looked at this in January when the first cases started to show in France, and whatever. And it was a lot of speculation as to how it's going to go on and how quickly it's going to travel. So, in the background, I started making my plans as to what I was going to do and how I was going to do it, so I actually manage both the facilities and the health and safety here." (FG10)

Some OSH professionals considered the probability that the epidemic may 'hit' their organisation, prior to the COVID-19 spread to Ireland.

Construction 5: "we had discussed in late December, I suppose, but more out of interest what was happening in China, more than wondering whether it was going to hit Ireland and it wasn't until probably later January that we realised that this was coming our way, and I do remember it being raised with me." (FG11)

Construction 3: "when it started hitting in say Asia, Singapore, Japan and China, so in December 2019 we kind of knew it was starting to happen so they did the company started to make arrangements in terms of being very cautious about telling people not to come to work unless they have to but really we had the HSE guidance in March with us that came it through." (FG13)

Organisations with an international branch usually had an early preparation as the management can easily gain information from abroad.

National Agency 3: "We were lucky in a sense, we have a plant in China, so we were getting some very early indications and what was really happening, coming across the group and that probably gave us a really good head start, I would say." (FG16)

On the contrary, some OSH professionals did not consider that their organisation realised the implications COVID-19 could impose, and thus did not prepare for the pandemic in time.

Consultant 5: "Well, that's fine. Well, when COVID hit, I was full time employed by an organisation and I would say, if they, say no, they had no idea of the implications that were coming down the line." (FG8)

Local Authority 4: "from March till about early November when it really it came knocking on everybody's door our guys were taking it with a little bit of a pinch of salt." (FG9)

Moreover, many OSH professionals indicated that the information flow from the public health authorities had an impact on how their organisations perceived the potential impact of COVID-19.

Construction 5: "I was very much kinda saying, this is an HSE problem, it's a public health problem it's not something that we as an organisation really want to take on but ultimately that hugely changed when the reality of what was coming down the track really hit us." (FG11)

Manufacturing 3: "very much blindsided. It would haven't been until probably a week before [St] Patrick's [Day] we kind of, we actually became aware of the seriousness of it. Our… I supposed to start discussing it and that it was, was not until the actual official announcement that we were sort of, sort of took a deep breath and said "here we go."" (FG2)

A lack of critical information needed to manage workplace expectations was reported as the key issue by many OSH professionals as the pandemic began to emerge in Ireland. Many OSH professionals felt

that they were aware of the risk and had done their best to educate their organisations but still felt their preparation was insufficient.

Construction 11: "To be honest, I wouldn't say we were prepared, no I mean like I don't think anyone was and I don't think any of us realised how big it would be. Like **said the duration of it as well, and so, to be honest, at the start, we were all just going off information we'd hear from the HSE or from the news and obviously there would always be rumours as well." (FG12)

Consultant 4: "not quite yeah, so I think we were better prepared in some ways, but personal behaviour then was the killer. I think Ireland was great at the start, it was not the case here, because the mixed messaging was coming from a huge number of networks US and people were confused even further."(FG15)

Although many OSH professionals were aware of the situation, they were not able to fully prepare everything in the beginning as they needed critical information and guidance from public health authorities. Also, it was difficult for OSH professionals to feel fully prepared as the situation kept changing.

Construction 3: "Not initially. It was you know I mean the same as everyone else, I mean I don't know how you prepare or train for something like that to be honest with you. It was just get on with it really wasn't it just trying to figure out things day by day." (FG13)

Infrastructure 2: "So you can plan I supposed, like Mike Tyson said everybody has a plan until they get punched in the head, you know and it's a bit like that you put your best plans in place and then you're in reactive mode, depending on how things pan out". (FG4)

National Agency 2: "In terms of preparedness, I suppose at times I felt we were kind of like the swan. We had the plan, but the legs were working very hard underneath the water." (FG5)

Access to reliable information was considered crucial for enabling management to evaluate the implications of COVID-19 in its early stages, especially in standalone organisations when faced with an 'infodemic' (Yoon *et al.*, 2021). Moving forward senior management in standalone organisations should respect suggestions from OSH professionals who have professional sensitivity/expertise to emergencies based on their experience in the field. For OSH professionals, timely communication with counterparts from other countries or regions is as necessary as any other field within public health, in order to stay as updated as possible on global trends of an emergent public health issue which has occupational health aspects to it. The opportunities for international information exchange or peer-learning between OSH professionals should be provided through localised / national health authorities or relevant OSH networks with similar functions in consultation with international agencies (Scallan *et al.*, 2017). Communications should not be limited to academia, but also experiences on empirical practices, the participation of which can be considered to integrate with professional development of OSH education programmes in the future (Felknor *et al.*, 2021).

4.3.2 General preparedness for public health emergencies

This theme describes the organisation's preparedness for public health emergencies in general, including WFH policy availability, emergency scenario and infectious disease experience.

4.3.2.1 WFH availability

Prior to COVID-19, some organisations already had a WFH policy which allows a certain number of employees to work in a hybrid way. This flexible working style inevitably facilitated the organisation with COVID-19 control measure implementation and employee adaptation.

National Agency 1: "um. I suppose. We would have had about 20% of our employees previously working from home primarily inspectors, so we had a fairly good system in place for setting them up for setting home working. So, rolling it out to the rest of the employees on paper, it was straightforward enough. Logistically it was a bit of a challenge because we have to get so much done in such a short timeframe, but we already had I suppose a process in place for doing this, so it took some of the sting out of tail." (FG10)

However, WFH was not an option for some organisations due to the nature of their specific industry nature, such as construction, manufacturing, healthcare and logistics.

Construction 3: "And that we were able to put all of the protocols in place so it wasn't a huge surprise globally for the company but it was a shock for us to be honest with you because we wouldn't have a lot of people working from home, we do have a telecommute policy, but it's mainly for the people in Europe." (FG13)

Also, some OSH professionals indicated that their organisational culture was not conducive to working from home due to the specifics of their industry.

Manufacturing 2: "We understood like that, it was serious, but what the company didn't have a culture of working from home and things like that, and they wanted to wait, as long as possible and see how things pan out before they actually made structural changes to how we went about our business." (FG2)

Some participants also reported that the internet connection could be a major issue for WFH, especially the employees who live in rural areas in Ireland.

Manufacturing 2: "And some of us are in rural areas, so the broadband down here, where I am in County Carlow is fairly sh in the area where I am, so that was a problem as well." (FG2)**

National Agency 5: "from a technology point of view, they were not prepared to have so much of the workforce move to working from home immediately." (FG6)

For some occupations, even though there were no infrastructural issues for employees to WFH, the management were concerned with how their employees would be monitored effectively at home, especially their younger employees.

Financial 2: "just, how do we, how do we manage the business and the staff on the business in that they're working from home, and how do we monitor that because it's quite a young staff and you know wanting to ensure that people's customers weren't waiting for long periods to get through to them, so that aspect of it." (FG3)

The investment for WHF facilities from an ergonomic perspective was also a consideration for some organisations, the financial support of which was considered as an expense required for business continuity.

Manufacturing 2: "The big, I suppose the biggest interruption was people working from home. As it's not as simple as, [you] grab your laptop and go home. We don't know whether [you] had a desk, chair, keyboard and separate mouse and ergonomic issues. That was the biggest problem at the start, and it required significant investment and it was loads of problems around like that." (FG2)

4.3.2.2 Emergency scenario

As reported, some OSH professionals had reviewed their safety management system emergency scenario planning on a regular basis prior to COVID-19 crisis. However, few people in their organisations had foreseen the value of such emergency scenario planning, as such crises seemed almost intangible by management and employees alike.

Biopharmachem 3: "I work in the Bio sector and we're a relatively new start-up company, but we would have had a pandemic plan in place and in place actually since last September… And we also have links into ** and other ideas to show business trip risks and I reviewed those every Thursday night and I picked up the single move hand fairly early so we did an emergency management session in very early January, and I could see a couple of people who were wondering why he is doing this." (FG14)

For some specific infrastructure industries, the capacity to quickly respond and adapt to public health emergencies was essential and required by their ongoing activities. These organisations thus benefited from periodic dry runs of public health emergency scenarios for the preparation for the COVID-19 pandemic in real life.

Infrastructure 8 : "just coincidentally, we had an org reshuffle basically just last year, or just prior to it and we have this part of our license, we have to do a pandemic response plan and it was thought at the time, with the new senior managers at the new and old one's there that'd be good in November we knew nothing about this, but in November to run a pandemic scenario…but they were only scenarios, they weren't real life, but at least, but we had by doing that in November we had identified all the key people that would have to be put into the positions, then when we actually when we actually needed to kick it off." (FG14)

Infrastructure 2: "Our company had done a pandemic exercise, would you believe, about two years ago. Just by, well there's no circumstance or happenstance, but we had gone through lively scenarios with the executive director team and stuff like that. As an organisation, we were reasonably, well you know as prepared as one can have to say, with the way things are panned out. A lot of what transpired in the drill or the simulation actually did transpire in practice, both there was a lot of stuff that didn't come up in the trial that came up in practice, so you know, interesting." (FG4)

4.3.2.3 Infectious disease experience

As indicated by some participants, their organisation had experienced the spread of infectious disease such as bird flu and swine flu, so they had similar emergency scenarios to draw upon to cope with COVD-19.

Biopharmachem 3: "When I first started putting it together right, I think people thought it was a different planet, so I have memories of marrows and that previously and Indian bird flu, and so it wasn't an immediate job that I wanted to get in case when I started up, but it was on the lists because I'm responsible for business continuity as well." (FG14)

Infrastructure 8 : "Look, it was a bit, it was a bit okay look at in the beginning look it, a part of the course that I had done in Sligo we actually [have] a module on it was epidemiology and stuff so we had learned about the Spanish flu, and the pandemic response, so I suppose I'd already an understanding of, a small understanding of what was coming and we already had like in our pandemic response we already had all that kind of terminology of social distance and like that." (FG14)

However, some professionals indicated that even though they had previous infectious disease experience, the global pandemic scale of COVID-19 was nothing similar to the previous ones they had envisaged. Therefore, there were still many unknown factors when preparing for this pandemic.

Construction 6: "No, I look at anything there, would I have been competent to deal with the Covid pandemic absolutely not, I wouldn't classify myself as being competent, the nearest we dealt with well I dealt with previously would have been the swine flu, was probably the nearest thing to that total opposite spectrums between the Covid and the swine flu, but I suppose, from an early stage we looked at what was the risk to the business." (FG11)

Hospitality 1: "It was kind of deer in the headlights I'd gone through and I'm working hospitality in a hotel, HR manager. And I dealt with the swine flu beforehand in previous hotels, you know, we had some familiarity with that, but it was nothing compared to what this was." (FG16)

4.4 Discussion

For emergency scenarios like COVID19 advanced preparation is key to ensure organisations can respond appropriately to protect workers while also aiming to ensure business continuity. The results from our study indicate that while many OSH professionals were aware that there was a new infectious disease emerging internationally there wasn't enough attention paid to it by organisations nationally until it began to emerge in Europe in February 2020. Only organisations that were part of a multinational partnership were paying enough attention and beginning preparations in advance of February 2020. Many Irish OSH professionals that took part in this research indicated they felt prepared and had incorporated emergency scenarios relating to infectious diseases into their safety management system documentation but even then, many felt they were not prepared for the enormity of COVID19 when it emerged in Ireland and the implications it had on their organisations as the first lockdown began.

Given that previous epidemics (e.g., swine flu) have had more domestic level impacts than occupational impacts, OSH management may have neglected the potential lessons learnt previously from other similar large scale public health incidents. Experience from prior infectious disease outbreaks indicates that all organisations should incorporate workplace emergency response plans into their safety management systems for such events, and review and update these plans by OSH personnel with regular frequency to ensure the organisation's ability to quickly adapt (Weston, Hauck and Amlôt, 2018). Workplaces that consistently plan and adjust for these potential scenarios can rapidly respond to unpredicted emergencies, as demonstrated in the healthcare sector (Griffin *et al.*, 2020; Liu MBBS *et al.*, 2020). For organisations with limited experience in infectious disease or similar emergency management, a simulated context can be recommended for refining emergency response plans and equipping employees with confidence prior to real world crises (Dieckmann *et al.*, 2020).

Furthermore, as past experience has shown, we can never plan for and cover for all aspects of such unanticipated situations, so the ability to learn and adapt as an emergency unfolds is important for the psychological preparedness of all involved in the workplace. Such adaptability can mitigate mental health related issues for employees experiencing a long-lasting crisis that extends beyond their occupational focus. Public health authorities, nationally or internationally, also have the responsibility to provide evidence-based guidance as early as possible so that all health professionals and support personnel can avail themselves of up-to-date authoritative instruction and advice. Because communication of uncertain scientific suggestions during emergency events presents an array of challenges (Doyle *et al.*, 2011), authorities should consider how they educate and empower the public to cultivate their ability to retrieve reliable information and interpret scientific evidence. This will allow decision-makers within various organisations to incorporate national or international guidelines while customizing preparedness to their respective occupational setting.

Chapter 5 (Theme 2) Organisational Impact from COVID-19

5.1 Introduction

This section reports the findings regarding COVID-19 impacts at an organisational level, such as the disruption of business continuity and new arrangements required at workplaces to keep processes running safely.

5.2 Poll Results

Five questions were asked via the polling function under this theme to begin the process of discussing participant observations and awareness of what their organisations experienced as the pandemic unfolded. Focus group participants were asked to rate their level of agreement with five statements for this theme.

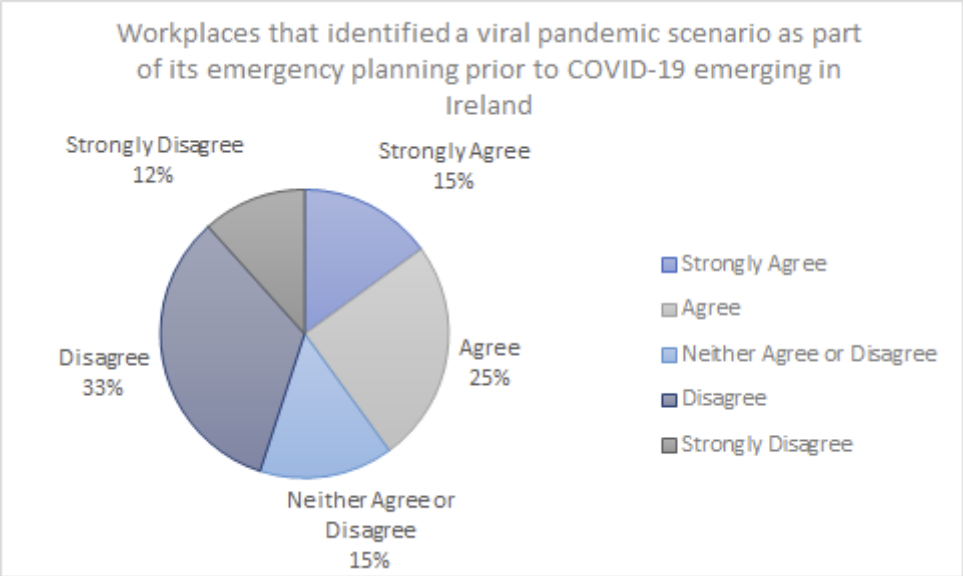

Figure 5.1 My workplace had identified a viral pandemic scenario as part of its emergency planning prior to COVID-19 emerging in Ireland (n=60).

Encouragingly over forty percent of participants indicated that a viral pandemic scenario had been part of their emergency planning prior to COVID19s emergence in Ireland. This is likely due to Bird Flu scenario planning being incorporated into safety management systems over the last decade.

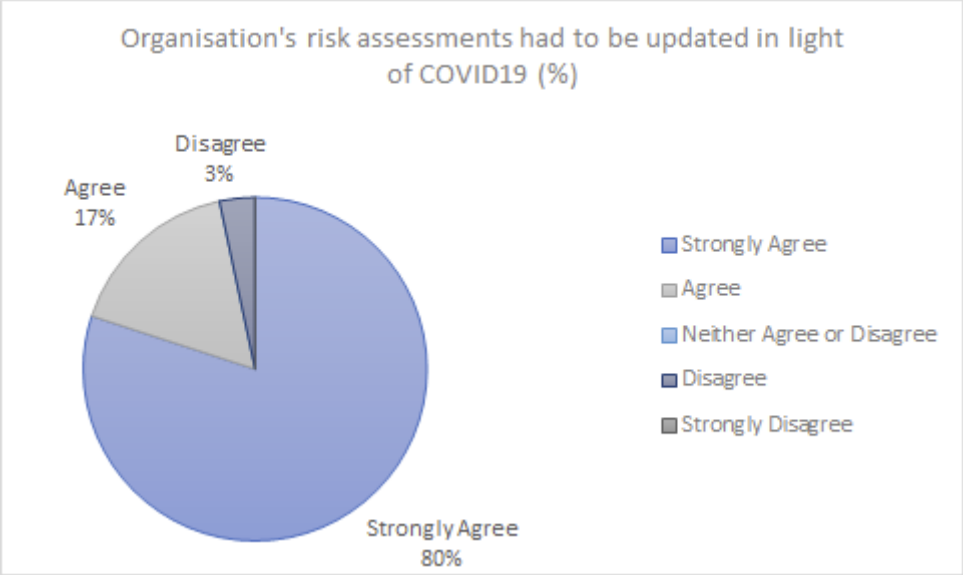

Figure 5.2 My organisation's risk assessments had to be updated in light of COVID19 (n=60).

As well as that, participants of the focus groups were asked their level of agreement with the following statement; *"My organisation's risk assessments had to be updated in light of COVID-19".* Nearly all participants indicated that this was required unsurprisingly.

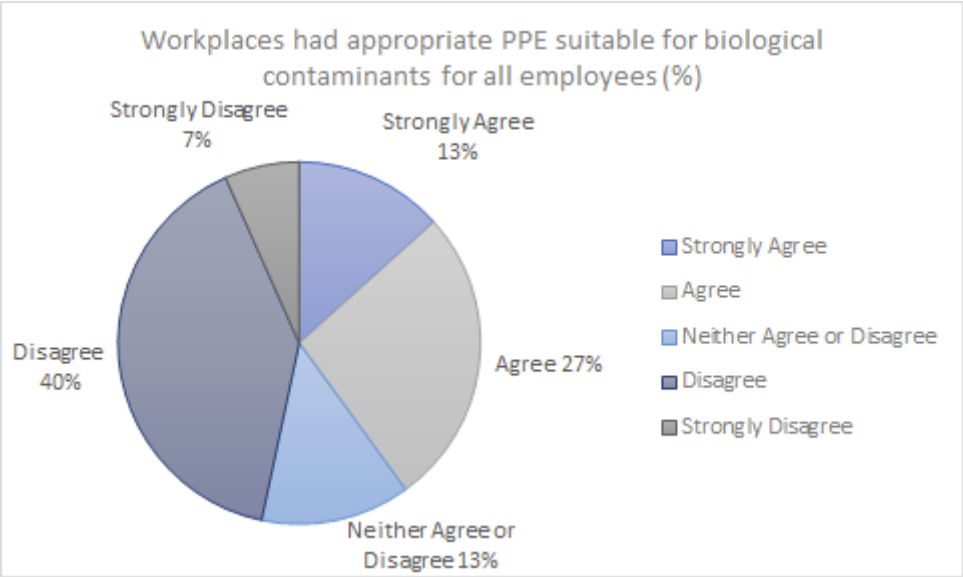

Figure 5.3 My workplace had appropriate PPE suitable for biological contaminants for all employees (n=60).

Following on from that, participants rated their level of agreement with the statement *"My workplace had appropriate PPE suitable for biological contaminants for all employees''.* Less than forty percent

of participants indicated agreement with this statement with the majority indicating that their workplaces did not have enough appropriate PPE.

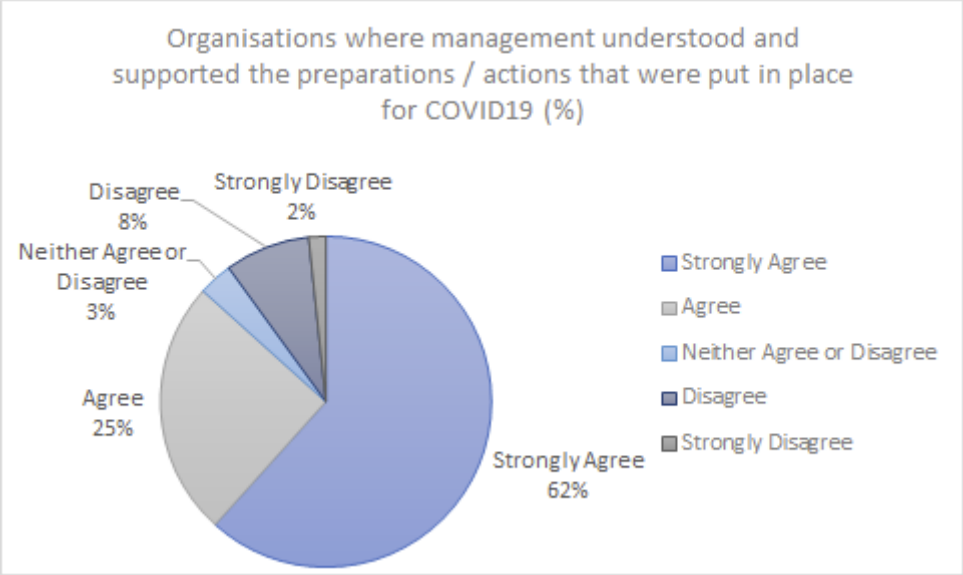

Figure 5.4 Management understood and supported the preparations / actions that were put in place for COVID19 (n=-60).

When participants were asked whether they felt that *"Management understood and supported the preparations/actions that were put in place for COVID-19".* close to two thirds of participants stated that they were in strong agreement with the statement. This can be considered very encouraging that management saw the benefits of what OSH personnel were attempting to manage to ensure the safety of personnel and business continuity as much as possible.

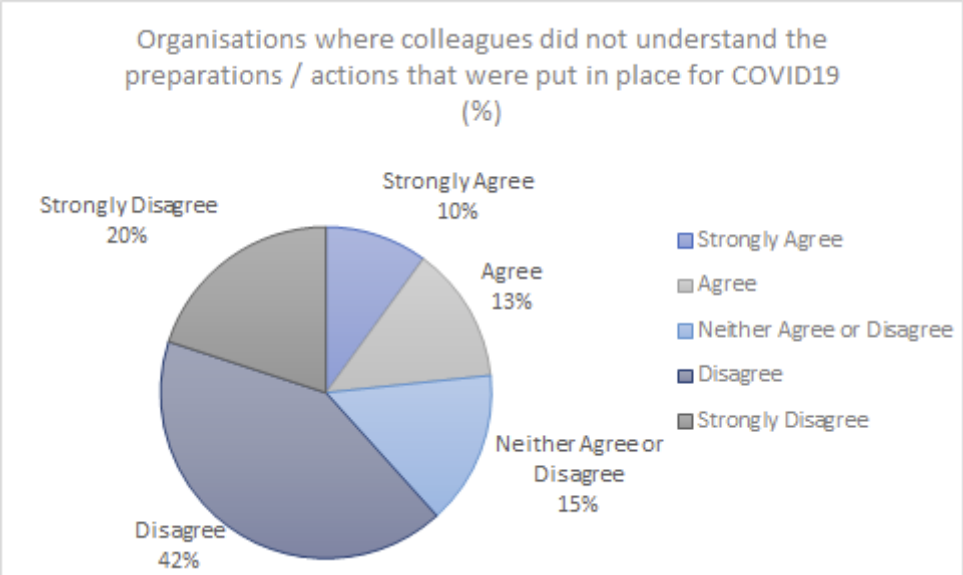

Figure 5.5 My colleagues did not understand the preparations / actions that were put in place for COVID19 (n=60).

Importantly from a safety communication perspective, participants were asked to rate the level of agreement with the following statement: *"My colleagues did not understand the preparations/actions that were put in place for COVID-19".* A breakdown of the results showed that less than a quarter of participants were in agreement with this. In regard to the level of disagreement, close to two thirds of participants expressed disagreement that their colleagues did not understand the preparations that were put in place for COVID-19. This is also encouraging as it indicated that for most organisations participating in this study the safety message was being delivered clearly for all employees to understand.

5.3 Key Themes

5.3.1 COVID impacts on organisation

For most organisations, the direct impact from COVID-19 was business operation continuance. Some organisations had to stop functioning at their facilities and shut down their businesses partially or sometimes fully for a period.

Construction 7: "We did initially see that this was spreading probably late January coming towards us, and it was probably February then it really impacted us, hit us, we had a significant impact in Ireland. We had about 60% of our work shut down then when the construction industry." (FG14)

To continue their business, some organisations had to change their way of trading to avoid the chance of bad debt accruement due to the economic uncertainty. For example, the new way of charging for products in Infrastructure 3's organisation also caused new issues for customers, which impacted on the company income in another way.

Infrastructure 3: "The way we sell our product is on loan. So, because of the uncertainty around the whole pandemic and what the implications would be for the general economy, it was decided to not offer the products, the way we had been offering them but to require much bigger down payment which most of our customers would not be able to pay so it had a huge impact on our sales and also on the income of our some of our sales team contractors and managers alike." (FG14)

Taking the hospitality industry as an example, the cost to maintain the business was even higher than before the pandemic with reduced numbers of staff, but there were no customers and thus no income during the period.

Hospitality 1: "In preparation for whenever this was going to stop, but because we never knew when it was going to lift, and because we were fully closed, we'd be opening in a completely new scenario which we just have to do as much planning in the background, as we thought. Because we are focused, because there was no day-to-day customer." (FG16)

As Hospitality 1 introduced, their management decided not to become a quarantine hotel, because there would be a higher franchise fee once they opened, and the revenue made would not be able to cover the maintenance fee.

Hospitality 1: "And the reality that is the minute we opened the door we engage the *** franchise fee straight away, so our costs go away, so we engage on our maintenance contract phase, so that all goes up as well, and you you're at a stage where you're losing an awful lot more rates and Dublin was gone way down so we knew we were going to be slow to open." (FG16)

As an essential service, even though Biopharmachem 1's company could function as usual during the lockdown period, their products were still not able to be sent to the target customers because of the disruption in the supply chain.

Biopharmachem 1: "And so we we looked at things like that, and then that was really then where the business continuity piece came in as well because of medicines, so we manufacture one product in particular and actually it had to be shipped to China." (FG3)

In addition, business operations can also be influenced by insufficient staff numbers to a large extent, especially for those production-led industries.

Construction 1: "The office side of our business was the one that probably got the most heavily affected, and I would say, from pretty much the start of April onwards there was less than 10% of our people in the offices." (FG13)

Biopharmachem 2: "And so, for us, it was real business continuity to make sure we can carry on manufacturing without stopping production. So I think the biggest thing for us was obviously to make sure we got enough staff in to carry on functioning properly." (FG3)

5.3.2 Reactions to COVID (Mgt level)

5.3.2.1 WFH

As one of the most frequently used control measures, WFH policy was updated in almost all of the organisations in this study to minimise the risk of COVID-19.

Infrastructure 2: "But the virtual first policy was probably the big one in terms of the senior team saying 'Okay, this is getting too dangerous, nobody's coming into work anymore, unless they absolutely have to.'" (FG4)

Biopharmachem 2: "We get as many people gone as we could get gone so that was our biggest divide of how many people can you get home and gone, and then worry about once we got them gone then, we're worried about them at home and getting them set up properly." (FG3)

Manufacturing 6: "We had to make sure we had good working from home systems from an, it from an ergo accessories, from a work session, we had chairs going home to folks with adjustable desks, etc, to make sure folks working from home were safe and had all the infrastructure they need it." (FG6)

As Biopharmachem 2 indicated, it was not only to ask people to be back home, but also, the OSH professionals had to be concerned about employees' safety at home, as home became another office site. As there was no such large scale working from home populations prior to the pandemic, many organisations needed to provide the employees with essential equipment as well as to consider the potential risks arising from WFH.

Financial 1: "So it was back to square one, if you like, so my focus changed back to them all again, looking after those working from home, getting kits for people still which I'm still doing on a daily basis now." (FG16)

Manufacturing 4: "Again, as Manufacturing 1 said, there are some of our, some of our issues, you know, what we brought on for people from a mental health side of things, as in their personal safety, and the people that they were living at home and coming into work here, going back home, and maybe, maybe bringing the dreaded virus with them from, you know, from whatever source." (FG2)

Manufacturing 4 mentioned mental health aspects of working from home which will be further discussed in the following sections.

5.3.2.2 Return to work

The COVID-19 virus can be spread by person-to-person contact via aerosolised respiratory droplets and touch, even from people exhibiting no symptoms (He et al., 2020) with airborne transmission in

confined spaces a particular cause of concern for many OSH professionals (Jayaweera et al., 2020). As Infrastructure 5 introduced, employees needed to go through a strict screening test if there was any suspicion of being positive.

Infrastructure 5: "What we're doing is we went above and beyond, and kind of didn't, we kind of went with our own guidelines in the sense. If you went, close contact with the close contacts [who said:] 'we're meant to be okay', we just said 'no, don't come in' that says until the negative test comes back and then, then they can come in, because we just couldn't take a chance, because if, if you start having a domino effect, we just wouldn't be able to run the service and that's the way you have to deal with it, you know." (FG6)

The most effective way to prevent any contagious employee from entering/re-entering the workplace is large-scale screening, which however is not usually available for general occupational settings (Rueda-Garrido et al., 2020). Therefore, OSH professionals shared their experience on optimally controlling the risk when returning to work after lockdown. Some organisations designed a survey for screening with the knowledge that as the national situation changed the surveys were required to be updated.

Construction 7: "Even the questionnaire, the entry, the questionnaire that you got for people that changed, that had a couple of different revisions as changes went on, so the plans were updated frequently, as I mentioned before the SOP from the CIF was in, it's seventh edition." (FG14)

Infrastructure 10: "For initially what we did was that there was a return-to work-office plan, so this was all about how you re-come back into the office and you were given a little pack with with a mask and hand sanitiser and what route of that were expected of you, and how you negotiate the building. Then you have to complete sort of a pre-return-to-work office induction scenario online. Then you have to do your, so when you're doing that pre-plans, that was part of our, when you completed your declaration for coming back into say you hadn't contacted but then, if if in line, you had become contact with somebody here in the office, this was for when you had your pre plan presence in the office that we could notify that and be aware of who you were in contact with for the time that you were here. (FG6)

The strategy of social distancing has also been frequently mentioned, such as limiting the number of people in the office.

National Agency 1: "They wanted all of their staff back on site irrespective and they wanted them back in as quickly as possible, so it was a lot of challenges there in pushing back against that and setting limits of I think we went with 30% of every team that would be allowed back in and if they wanted all of their colleagues it had to be done on a rotational basis, so we were putting all of those systems in place and identifying what desks could and couldn't be used to facilitate social distancing and so there was a huge amount of work from my team involved in that yeah." (FG10)

Local Authority 4: "With you know the posters it's I mean it's like a, a disco with that many lights and yellow signs all over the place, so we really went visual, we do operate a training centre as well, it has been closed for portions of it but other local authorities would utilise that so again, we went very heavy on it just to give that visual and to keep that communication going and give that strong effect and to keep the awareness high." (FG9)

Nevertheless, the control measures for returning to work required more manpower which could be challenging for some organisations.

Construction 11: "Actually, sorry, one thing I would say is actually is returning to site, that would probably be a time where we could have used more people resources because basically we had to get all of our jobs set up and ready to go back onto sites *back in May and that was a lot of jobs to get back set up and a lot of things to be revised and procedures to be implemented so yeah that would have could have done with a few more people." (FG12)*

Still, WFH has been encouraged to minimise the risk if there was no necessary reason for employees to be back to their workplace.

Manufacturing 6: "In order for us to bring somebody on site, we have to go to the highest level of management to say X needs to come on sites that have been on site ever you know if they're a new hire or they haven't been on site since March 2020 and the critical business reason they need to be on site as X, Y or Z that, so there's a review process in order to bring people on site to make sure that we're maintaining a safe environment for the current folks on site." (FG6)

Biopharmachem 1 also shared their experience on the management of employees returning back to their offices by assigning the specific areas to the managers respectively.

Biopharmachem 1: "You could potentially be forgetting about people from home, and that was the way and, at the beginning, because you were such a focus on the operation, the products going out to different countries and sometimes that could have been missed, so what we did, to try and rectify that was, here's the plan: each of the managers are responsible for their own areas, they need to manage that, in accordance with as we move through the levels so that was everything." (FG3)

For international organisations whose business is dependent on international travel, the travelling related policies also needed to be updated to ensure both business continuity and staff safety.

Construction 7 : "During all this we had people coming in and out of the country and we had all the testing protocols which changed significantly all the time and you're having to adapt to that, so it was quite a significant amount of change throughout this and updating plans, yeah." (FG14)

Biopharmachem 3: "I'd say in such a way is practically every day but fundamental shifts and policy and changes were probably weekly and government changes were bad enough you know like travel advice was changing sometimes four to five times a week from international organisation dependent on international travel, trying to navigate around that like we make medicines for rare genetic diseases and some of them are manufactured globally." (FG14)

Another challenge is that public health travel guidance / restrictions was updated in a very frequent manner, which required the OSH professionals to keep a close eye to the changes made.

Infrastructure 8: "The travel. Now we constantly have to bring in people from abroad, for the work and very specialist machines and we're still having problems with that in relation to mandatory hotel we don't have a specific derogation from bringing somebody in in the event of, and look there's but yeah and the content, the travel into Ireland, also the HSE advice and they did an updated page overnight, you have to be checking it every day, the next day it didn't clearly state it said that the page was updated didn't clearly state what on the page was updated." (FG14)

5.3.2.3 Frequent policy updates

As discussed, occupational policies needed to be reviewed and updated over time as local epidemic status changed. For organisations like public authorities, they had to change a lot of their standard protocols since COVID-19 emerged.

National Agency 1: "We also have to look then at our specific procedures, our inspection procedures, as you can imagine, in public authority like ourselves, everything is documented down to the finest detail, you know nothing is done with their ever being an SOP in place, so we had to go back and literally rip that apart and start from scratch as to how we do on unannounced and announced inspections and the protocols, we were going to have to follow and while we could implement our own protocols, I think one of our biggest challenges was the protocols, within the hospitals or the nursing homes or the designated centres." (FG10)

As the pandemic unfolded and new information and guidance began to emerge frequently, the rapidly changing information environment required organisations to adapt / adjust their policies accordingly.

Biopharmachem 4: "I would say we've had maybe four instances where documentation has had to change across the board, and maybe not all elements of it but enough that you had to go back over them all so." (FG7)

Healthcare 8: "It was as I said earlier on, we match every day, and then I went to twice a week or, but it was mainly the quite drove the change was either high level of cases or and the actual region itself, like whether it was positive cases or high numbers but, but yeah in general that was changed an awful lot yeah." (FG6)

Construction 8: "I think we tried too hard to keep up with the ever changing information and in the early stages, may have ended up causing more confusion than anything else because you know, as soon as new information was up we were trying to communicate it out as quickly as possible and, like maybe within two

days it was actually out of date again so maybe just taking it in bigger chunks if you know what I mean." (FG12)

Manufacturing 2: "We'd a COVID-19 business response plan when that came in, I think we're on version 17 of that now so we had to make 17 changes. The whole, the whole the whole time as soon as new public advice comes out, that's risk assessments updated, that's you know, your policies, how you deal with things. Yeah, so it was continually update. I mean it's, it's every it's every single every single week you're looking see what's new. There haven't been many changes in the last while, but it was certainly was a, it wasn't just making a few changes and leave it at that." (FG2)

Construction 9: "We developed the procedure, and we implement[ed] procedure and if it's developed today, it will be implemented tomorrow everywhere we needed to be implemented." (FG14)

A frequently mentioned example iwa about mandatory use of face masks, as the public health authorities initially in the first phase of the pandemic had inconsistent information or delayed announcements regarding the effectiveness of face masks in preventing COVID-19 transmission over time.

Infrastructure 2: "And simple example would be the company issued some just barrier what called mask… face covering, sorry, is the word rather than protective equipment in the early days, just as a goodwill gesture to every member, but as as the pandemic on, it was you know, hey look, these are these are not PPE, these are not suitable for two technicians working out a panel or something like that in close proximity to each other, so went to FFP2 level masks. So that level of documentation which gave you advice on what type of tools for what tasks would have been updated. As the advice changed throughout the pandemic." (FG4)

Healthcare 1: "We were very clear that it was our place to follow national guidance, so if nationally, they were slow to advise on say something like mandatory mask wearing we were equally slow off the mark to do that because we were very clear from the get-go that we were going to follow the guidance as closely as we possibly could." (FG5)

As Construction 3 emphasised, the most important aspect for OSH professionals to manage was expectations from their staff and communications played a significant role in managing those expectations. The need to notify the employees that the guidance could be quickly changed as progressed, and to communicate with employees to ensure that the renewed policies have been fully understood was crucial to determining if new safety measures would work.

Construction 3: "You know, again, as the other guys are saying, hour by hour things were changing and I still find that the speed with which guidance changes information, and so I mean you know if I'm sending out, you know information or always with a disclaimer this is like a snapshot right now, you know you need to be kind of always aware that it could change." (FG13)

National Agency 2: "I just said with the action plan and the response plan, even though we had the working documents, I think we were up to version 21 before it was signed off by the board of management. And even though we had sort of, we had a plan in place, but it was constantly changing, because there were subtleties and in terms of online, our training went online in terms of the induction training and the health and a lot of the health and safety training." (FG5)

General OSH guidelines (many of which were unchanged by COVID-19)also needed to be considered when COVID-19 related policies were launched i.e. so that while the focus was on COVID-19 one was not to forget all of the rest of the safety management processes in place.

Construction 4: "You know onsite boarding started in the morning, when people clocked in the whole clock and system had to change, you know from evacuation to first aid, so everything had to be looked at." (FG11)

Biopharmachem 1: "From all the information we gave them at the beginning to what you give them now, it's totally different it changed massively, and so it was really about looking at it as another hazard on the site and applying your basic principles around safety and trying to mitigate it as much as I possibly can." (FG3)

Sometimes, updates needed also to be made based on employees' feedback such as the preferred type of PPE.

Construction 1: "So again, we had a system in place, so I think what we did is we clarified information in our first revision. I think we reviewed twice more and the last time we touched, it was September, and I think even then the only the only reason we did, that is because we introduced snoods to our outdoor operations, as opposed to the face mask because we saw that there was an awful lot of contact with masks up and down, and the guys suggested to us that you know the snoods will be more comfortable for them, so we agreed to have that in place." (FG13)

Many organisations indicated they had very frequent changes at the beginning of the pandemic, and some OSH professionals reported they had to deal with excessive levels of preparation and paperwork.

Financial 3: "So I suppose initially we had to change it quite a bit, so there was a lot of edits definitely as new information was coming out and new guidance, even like I suppose at the very, very beginning. Even just simply as I suppose, masks they were, we were trying not to make them absolutely mandatory when they weren't mandatory in public anyway, I suppose, but and then, when that guidance changed, then we did make them mandatory then at that point." (FG13)

Consultant 1: "And, by and large, no, they were not ready, it was a body blow to them, but businesses is business they had to get it to show on the road, so there was a lot as everybody would know write about I suppose, the first protocol, I think, was in around the middle of May, and then, once that happened, there was an avalanche of, can I have my paperwork yesterday approach, so the paperwork, as you would know better response plans to suspected case, plans and how to respond as well as the lead worker and the induction training, so on the the dual tracks of training and documents were running and then, I suppose." (FG8)

As reported, when organisations realised that COVID-19 became a long-term pandemic, they again redesigned their policies to adapt to this longer term perspective on their changing work environment.

Manufacturing 2: "Once, once we realise this was after about, I think it was early May we realised, there were, this is not going away anytime soon we realised, we were going to be a year or two in trouble and we went, we spent a quarter of a million on a redesign playing in the canteen and all that kind of stuff on our and making arrangements on our biggest site, so there was a lot of physical stuff had to be done there, so they're continually changing, but we were you know fine, this is not going away, this is okay we're gonna have to do things here." (FG2)

National Agency 5: "And, but last year and, as we went through second wave and third wave and as governments changed their levels and also when they introduced a staff plan for living with COVID with the levels in there and that changed our kind of response plan." (FG6)

5.4 Discussion

As illustrated, some organisations initiated in-time preparation for COVID-19 due to misperception of the risk (e.g., underestimation of the speed of COVID-19 infection (Alwan, 2020) or underestimation of the severity of contracting COVID-19 (Kung *et al.*, 2021); some organisations prioritised workplace safety measures but could have prepared more efficiently if they had realised the potential impacts at an earlier point; with many organisations not confident about their preparations made despite accurate perception of the risks. Available WFH policies and contingency plans to cope with infectious disease were useful in facilitating public health emergency preparedness, while workplace simulations complemented a general lack of practical infectious disease experience. Even so, organisations could only initiate COVID-19 preparations if senior management realised the severity of the pandemic and authorised the adaptation processes, or if OSH personnel were fully empowered to take related actions (a free reign to implement new processes / procedures as needed to ensure staff safety and business continuity).

With COVID-19 control measures implemented nationwide, most organisations had to adapt their working arrangements to follow new policies and many employees were sent home to work. As a result, employees faced various challenges ranging from the physical environment at home to strained relationships (with family or co-residents) or uncomfortable feelings caused by isolation from their working environment and their colleagues. Some employees felt adrift without management support while others felt they achieved greater autonomy and independence as workers and thrived in their working from home environment. Our study suggested that organisations in the event of future pandemics, should allow employees to return to the workplace if they lacked sufficient space to work from home and that based on the processes and procedures developed and designed from this pandemic the management of employees if they preferred to not work from home can be facilitated

in a better fashion than the initial phases of the COVID-19 pandemic. Facilitating the return of employees to the workplace will inevitably alleviate other issues caused by WFH adaptations. However, the hybrid working will require organisations to consistently reinforce COVID-19 (and future pandemics) and general safety related control measures to ensure employee safety at work while at home. Furthermore, organisational Employee Assistance Programmes (EAPs) should focus more on mental health issues arising from hybrid working and be made as accessible as possible to all employees in need of additional support. This will be discussed further in forthcoming chapters.

Chapter 6 (Theme 3) Impact on Workers from COVID-19

6.1 Introduction

This section reports the findings regarding COVID-19 impacts among workers, including the direct impacts from the virus risk, and also the indirect impacts that may be caused by COVID-19 control measures implemented in their organisations.

6.2 Poll Results

Poll results for questions relating to the impact of COVID-19 on workers are displayed in Figures 6.1 to 6.5.

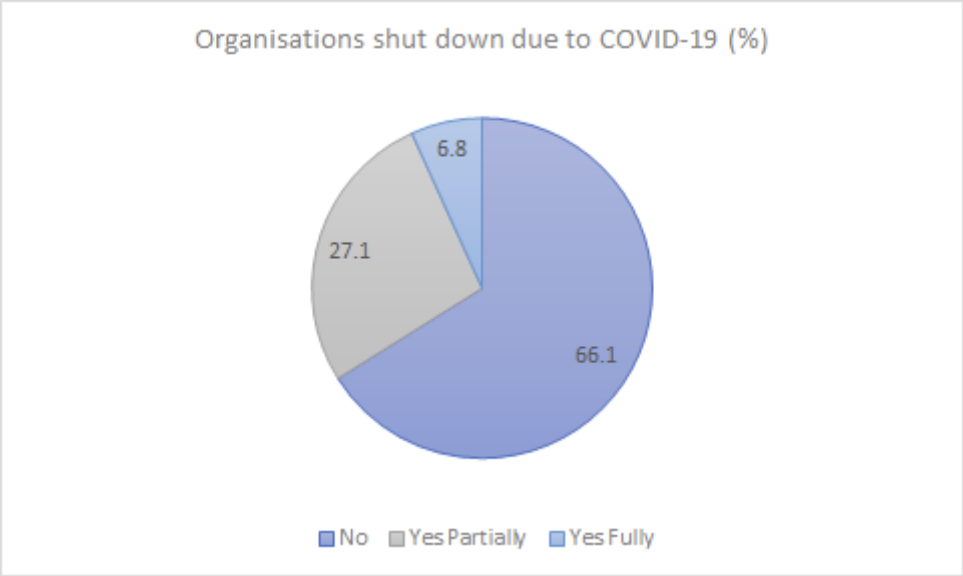

Figure 6.1 Was your organisation shut down due to COVID-19? (n=60)

Two-thirds of participating organisations were not shut down due to the pandemic, with just over a quarter partially shut down during the pandemic.

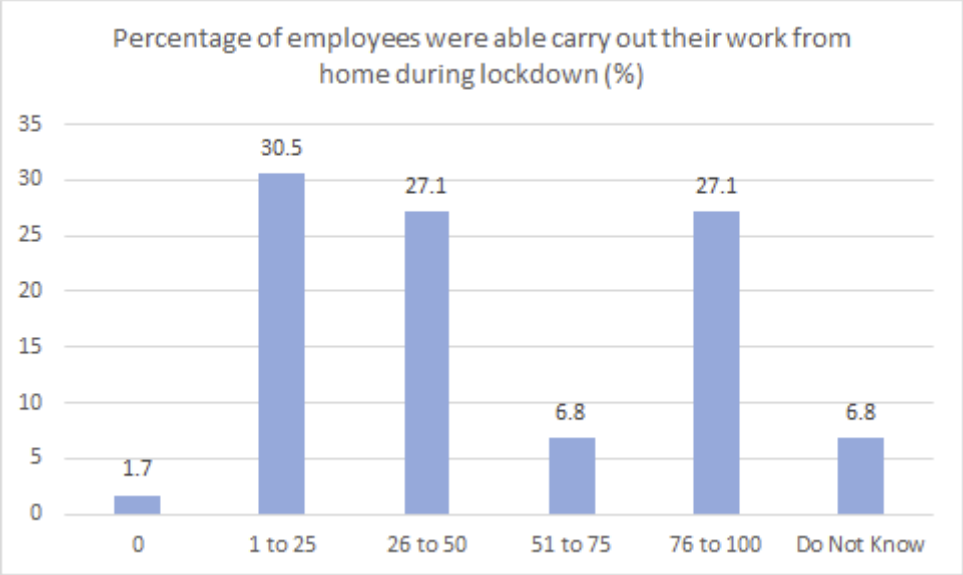

Figure 6.2 During the pandemic what percentage of employees were able carry out their work from home during lockdown? (percentage of employees) (n=60)

Just over a quarter of participating organisations indicated that their employees could work from home fully, whereas nearly two-thirds of organisations indicated that some portion of their employees could work from home.

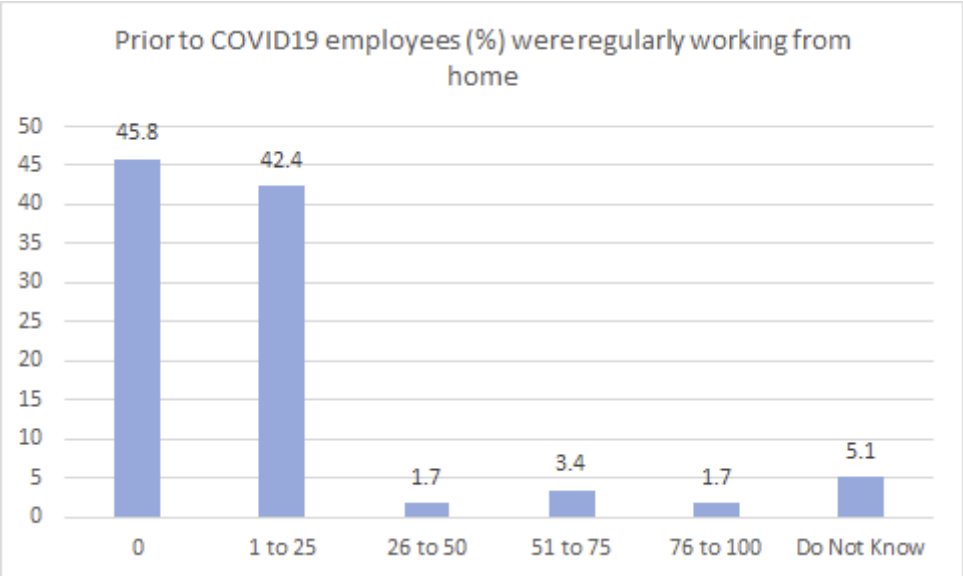

Figure 6.3 Prior to COVID19 what percentage of employees were regularly working from home? (percentage of employees) (n=60)

Before the onset of the pandemic, nearly half of all participating organisations indicated that they had no working from home in place with nearly another half indicating that less than 25% of their employees could work from home. This indicates a significant shift in how organisations managed their business through working from home as an adaptation mechanism which now would need to be considered further in how organisations manage their operations moving forward post-pandemic.

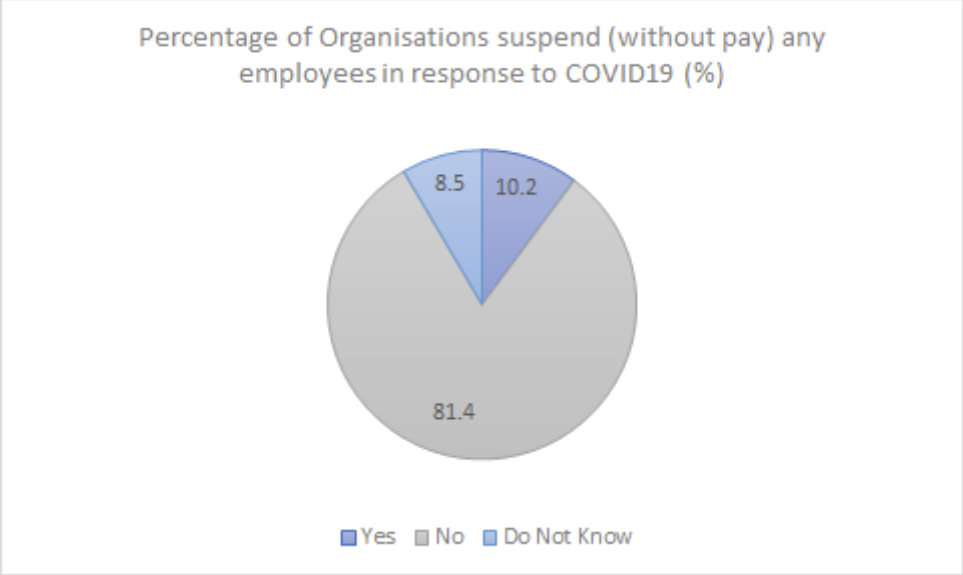

Figure 6.4 Did your organisation suspend (without pay) any employees in response to COVID19? (n=60)

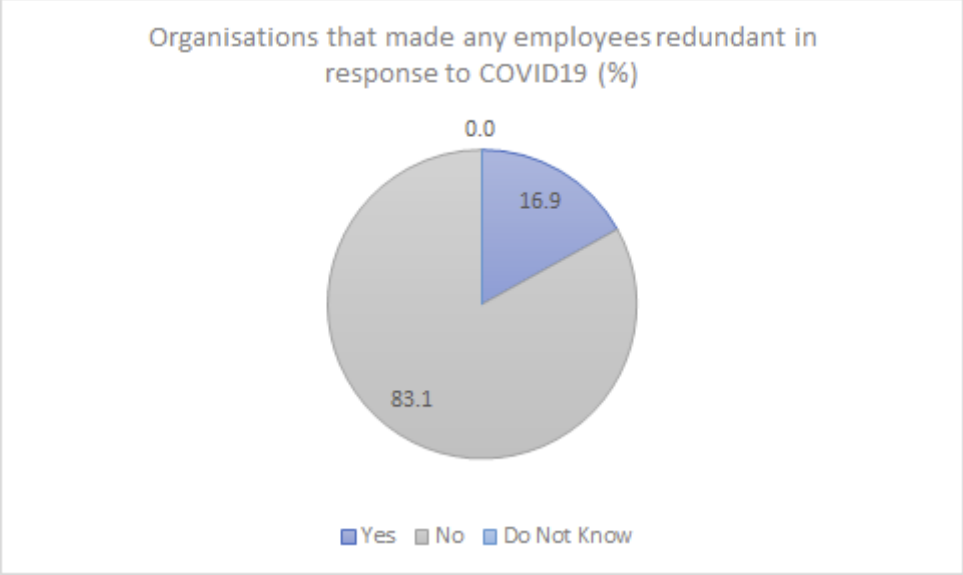

Figure 6.5 Did your organisation make any employees redundant in response to COVID19? (n=60)

Encouragingly, only 10% of participating organisations reported that they had to suspend employees without pay during the pandemic. With less than a quarter of participating organisations indicating that they had to make employees redundant due to the pandemic.

6.3 Key themes

6.3.1 COVID-19 risk for workers

Loss of staff, as a particular asset to organisations, was often the biggest threat to business continuity from COVID-19. For certain industries that require significant manpower on site, essential workers may also have had significantly greater exposure to the COVID-19 virus than in other industries e.g. public facing / interacting organisations, education and healthcare settings.

Infrastructure 2: "We are national infrastructure company, and we do have a lot of contact with the general public and we wouldn't want to be bringing Covid into somebody's home." (FG4)

Construction 1: "There are certain portion of our guys that were classed as essential had to go to work there was, a lot of these people were civil gangs and underground excavation gangs and so on, and overhead cabling guys and so my team would have had to go out and physically audit them, you can't audit somebody activities from home, so that that was one element of this." (FG13)

For many organisations trying to determine if their workers were considered as essential workers was a problem that many needed more guidance on.

National Agency 5: "Yeah, I suppose the immediate impact for the workplace was well one, first and foremost confusion. we have to decide what was considered essential and non-essential, and make that distinction. "(FG6)

For organisations that had aspects of international business and partnership, management was also concerned about their business partners regarding travel to Ireland from potentially high-risk regions.

Biopharmachem 1: "And, as a result of that we had to guess, especially as contractors from Italy was probably the one that really affected us. From an aspect of, we had an Italian contractor coming into the country, and we had to determine where they came from, the number of cases in the region that they were in and if they came from an area." (FG3)

As staff absences became more common as COVID-19 transmission became more common, the ameliorative impact on staffing shortages particular in the healthcare sector was felt with greater frequency the further into the pandemic society progressed.

Healthcare 2: "Yeah, that's it the whole monitoring the staff from an HR viewpoint as well, it was who was who was out sick who's cocooning all this and then there's the whole issue of sick pay like I suppose between the HSE we're paid… absenteeism had a big impact, staff going out being close contacts, so that's been a big impact on the organisation and also our 24-hour service, so we need staffing 24/7 so that would would have been one of our biggest impacts." (FG7)

Healthcare 8: "Staffing really was the immediate impact and to ensure that we had enough staffing because that was kind of general operations of the everyday and to ensure that you know when when COVID, we were we were I suppose panic is probably the wrong word, but because we had some sister companies that had already been hit. And we've seen the fact of not having enough staff to be able to deal with the everyday primary care of the residents protected when they actually became very ill." (FG6)

As adjustments were made to business operations as the pandemic and associated lockdowns unfolded most organisations had to overhaul staff timetabling / shift plans and / or even lay off their employees or put them on furlough until more certainty could be provided regarding business continuity. This had the impact of losing valued and experienced workers as the pandemic progressed with some organisations expressing the expectation that a return to previous staffing levels or makeup after the pandemic was unlikely.

Infrastructure 5: "Because nobody's using the service, but you have to get essential workers and rosters and timetables have to be switched around to get people into work on time." (FG6)

Construction 7: "We prepared in advance, when we saw the shutdown happening I suppose, we all had to then identify people who we needed to put on temporary layoff. So, in Ireland we had about 60% of our staff placed onto temporary layoff. Our board of directors even took a cut in pay." (FG14)

Hospitality 1: "And the problem with us is a lot of people are leaving the industry, and bars, bar side of it, especially. And they've gone off to look in other areas… Well, I think the long-term impact is they're not going to go back to the role they were in." (FG16)

6.3.2 Workplace COVID-19 cases

When being asked how the level of cases of COVID-19 that were present in their organisation, most participants were very honest and transparent about the number they had. In fact most organisations were eager to share this information.

Construction 8: "Oh yeah yeah absolutely, we've had in the last 12 months I had the stats there, but we would yeah, the majority of our sites would have had at least one positive case, I think the maximum we had on one site, which was a large project, was seven cases." (FG12)

Many organisations felt that they had a good internal reporting and tracking system and were happy to liaise with national contact tracing initiatives when employees became positive. Some OSH professionals were very satisfied with their prevention measures as their positive cases kept going down which indicated to them that they were effectively managing any outbreaks that they had.

National Agency 3: "We've had 133 positives. They are not here today, since we started recording, we were [had a] very, very good recording process, so like, we're proud of those numbers in a way, do you know?" (FG16)

As reported by the participating OSH professionals, more cases were observed after Christmas 2020 (the third wave of the pandemic), though a small portion of the population had been vaccinated at that stage. Most organisations considered the "meaningful Christmas" as the reason for their high cases and the significant impact on their business operations with staff shortages due to illness and close contact isolation protocols in late 2020 early 2021. However, as Local Authority 1 observed, the employees who had the first vaccine also considered themselves as "bulletproof" and were thus not as attuned to prevention measures anymore.

Local Authority 1: "We kept cases very, very low, there just after Christmas, there was a bit of an explosion of cases, I think we had only two outbreaks which, again I might consider very good, we had two outbreaks, between depots and stuff like this, but I've noticed lately there's a lot of relaxation of, I suppose awareness, not really awareness, but they're not as attentive to detail as they were before particularly now that some people are coming in with the first vaccine. They come in the next day and they think they're bulletproof." (FG15)

6.3.3 PPE issue

Although organisations did their utmost to protect their employees, in the early stages of the pandemic it proved very difficult to sour the appropriate PPE in time for their employees. In particular most PPE was by necessity directed towards healthcare so many organisations began to run out of PPE within a short time.

Manufacturing 1: "They were frustrated, because we have to wait for PPE all the time, safety glasses etc." (FG2)

Manufacturing 4: "Some of the sourcing I'd have to say dried up pretty quick. And I suppose that was due to the demand, it dried up very quickly with regards to the tapes and masks we could give out and we ended up giving the mask way over what was expected for." (FG2)

It was considered that the main issue was about the PPE supply chain and logistics, as most of the PPE sourced was from Asia where the COVID-19 pandemic was widespread as it began to emerge in Ireland so obtaining the necessary PPE from countries that were already in lockdown with staff shortages and travel restrictions meant that the logistical distribution network was severely impacted. This was well understood by the professionals participating in this study.

Construction 3: "We had huge problems getting masks we implemented a mask policy March actually last year if you're on the site you have to wear a mask…that was very challenging I think at the start and just getting our hands on good disinfectants and hand sanitisers supplies, not just for the Ireland office, for the European office, we ended up getting stuff shipped over from Asia." (FG13)

Infrastructure 3: "But then just resources, I mean the mask were the main thing but to get them initially there was an order that's the corporate company had placed, which was to come from China and such a date and we were following it for months and it never appeared until you know, it was a way to late, we had already sourced cloth masks locally, but they were not to the spec that you know was required, according to what our policy said, so, overall no we didn't have enough resources." (FG14)

As Infrastructure 3 mentioned, not all the PPE sourced met the required standards and this was a particular concern to many OSH professionals.

Consultant 1: "The PPE, a big part of my involvement with companies with the PPE was whether it was up to spec whether or spurious or whether it was the real thing. So there was quite a bit of that and chasing down." (FG8)

Furthermore, due to the uncertain and changeable information obtained from the public health authorities, there was a confusion about the effectiveness of using masks as a control measure before the clear scientific evidence was made available.

Infrastructure 9: "Once they had the information and the basis for it, but I think it was that ambiguity from the government at the start we were all hearing information about how good mask wearing was, but it still hadn't been instigated here, I think that led to the confusion as well." (FG3)

6.4 Discussion

Participating organisations indicated that as they prepared COVID-19-related guidelines, revised risk assessments and implemented control measures frequently as the pandemic unfolded the constant need for updating required significant communications with employees. Though this new elevated level of communication was well received by employees as they understood it was to help them face multiple workplace adaptations to cope with the ever-changing situation. Participating organisations indicated that their Employee Assistance Programmes were also brought to the fore more frequently as a mechanism for employees to seek external assistance as the pandemic unfolded with greater usage being reported across all work sectors. Along with formal EAPs embedded into most organisations' OSH systems, communication with employees that was facilitated via informal channels such as online coffee breaks and casual chats following work meetings was considered a valuable mechanism to ensure employees were staying connected and informed of workplace changes. Many organisations participating in this study reported that their employees' have indicated that their work-life balance has improved and sometimes their productivity as a consequence of the pandemic and

that this needs to be investigated further in order to keep organisations working optimally. As organisations consider the ongoing pandemic and mindful of potential future global pandemics emerging many are considering the lessons learned from managing this emergency situation, with more timely and consistent emergency scenario planning, the continued implementation of their new control measures and working environments mentioned as key mechanisms for coping (Darlenski, Kazandjieva and Tsankov, 2021; Dankert and Virk, 2021).

While the pandemic disrupted business operations and consequently certainty about their roles, processes and timetabling, many organisations reported that most workers had a very "can-do" attitude with everyone pulling together for the sake of their organisation. Participating organisations reported that most employees understood the necessity for the changes to procedures and demonstrated an understanding when reduced hours, furloughs and redundancies had to be brought into play. Most organisations reported that while the pandemic introduced uncertainty there was a perceptible impact on workplace culture with employees going above and beyond their normal duties to help one another and their organisations keep going. Many organisations expressed hope that that attitude would persist once the pandemic is over.

One of the key impacts felt by workers that became apparent as the pandemic progressed was the negative impact it had on their mental health. This was an emerging theme which is discussed further in Chapter 8.

As the ongoing management of COVID-19 has become long-term, senior management should now be considering the allocation of sufficient resources for employees to cope with chronic stress and associated symptoms that are now emerging and becoming more apparent from the hyper vigilant, tense and changeable scenarios most organisations faced from the outset of the pandemic. Many workers have been highly stressed yet performing above and beyond normal working situations to ensure colleagues were safe as well as their organisations survival. The non-stop barrage of COVID-19 information globally often described as the infodemic has not permitted workers to disengage from the pandemic and with many now experiencing working from home, the lines between work and home have blurred and blended into one constant source of anxiety - how to keep working while also protecting oneself and one's family from COVID-19. The impact of that constant pressure and consistent requirements for adaptability have kept many organisations going but now many employees are facing burnout and apathy as COVID-19 is still with us and entering its endemic phase.

With the infodemic contributing to stress (Solomon *et al.*, 2020), employees need reassurance and guidance incorporated into communication processes to curb the potential mental health impact on workers as the pandemic continues. However, many organisations felt they did not have enough information and guidance themselves to be able to reassure their employees. Many organisations that participated in this study expressed dissatisfaction with national agencies responsible for the design, development and dissemination of appropriate guidance for workplaces on how to handle this public health emergency from an occupational perspective. Many organisations indicated that their go to national and international sources of relevant health and safety information and guidance were slow in the early stages of the pandemic to develop and disseminate information on what workplaces needed to do to protect workers.

Chapter 7 Theme 4 The Future of Occupational Safety and Health in a post COVID-19 world

7.1 Introduction

This section focuses on the lessons learnt from COVID-19. The experiences shared by OSH professionals in this section can also be applied to any unanticipated public/occupational health crisis that arises in the future.

7.2 Poll Results

Responses to the last set of poll questions relating to the future of OSH after COVID-19 are presented here in Figures 7.1 to 7.5.

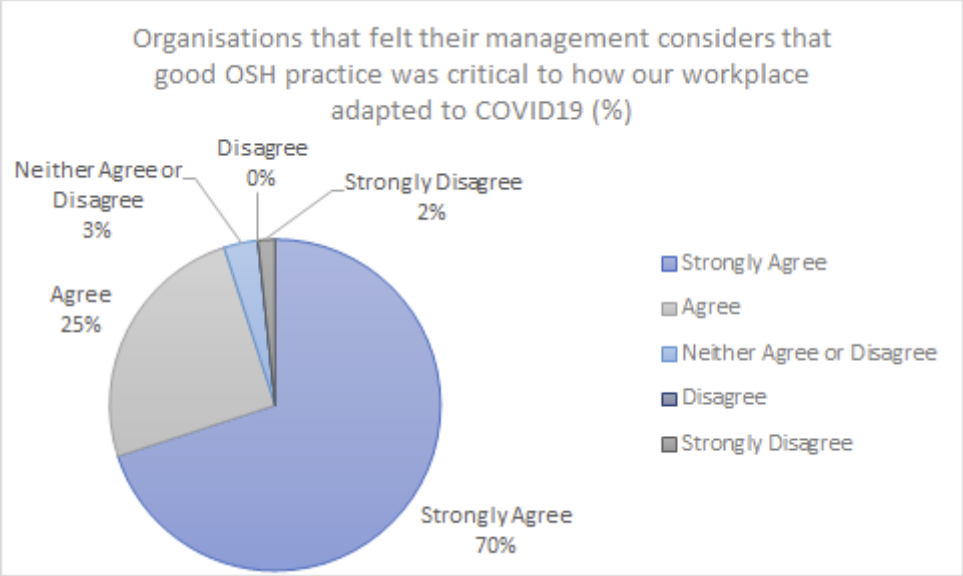

Figure 7.1 Our management considers that good OSH practice was critical to how our workplace adapted to COVID19 (n=60).

The pandemic underlined the importance of OSH for participating organisations with 95% of respondents agreeing that OSH practices were critical for workplace adaptation to COVID-19.

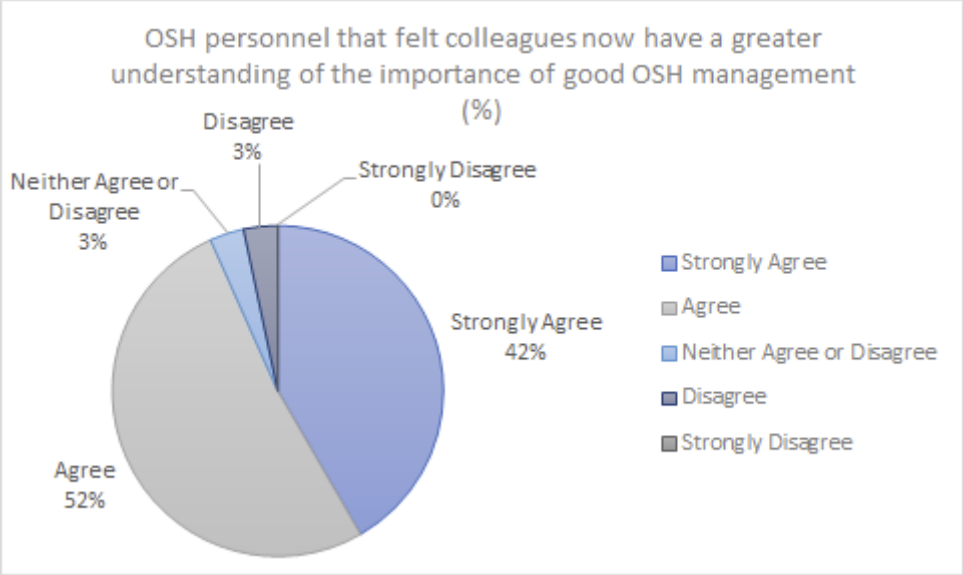

Figure 7.2 I feel that colleagues now have a greater understanding of the importance of good OSH management (n=60).

Similarly, an overwhelming majority of participating organisation OSH personnel agreed that colleagues now have a greater understanding of the importance of good OSH management. This is a very positive perspective on how the pandemic has potentially impacted workplace safety culture.

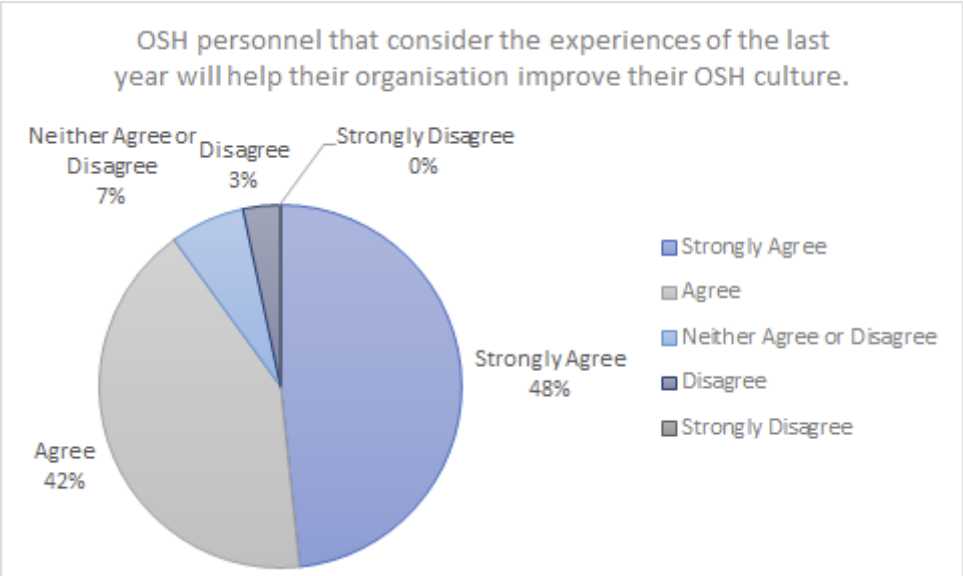

Figure 7.3 Moving forward the experiences of the last year (March 2020 - April 2021) will help our organisation improve our OSH culture (n=60).

Based on experiences from the last year (considering the participants were polled in April / May 2021), the vast majority of participating organisations agreed that organisational OSH culture would improve as a result of the pandemic.

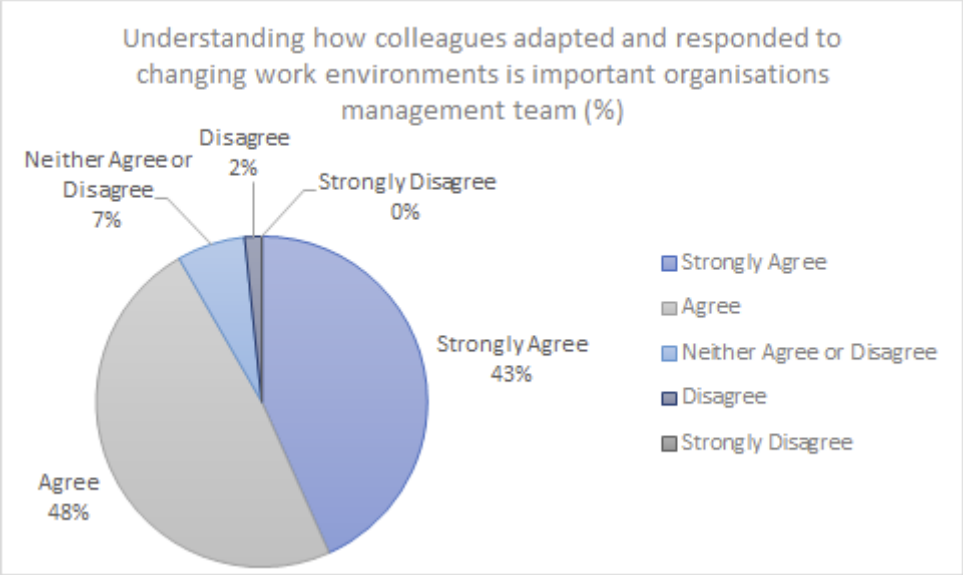

Figure 7.4 Understanding how colleagues adapted and responded to changing work environments is important to our management team (n=60).

Again, most participants felt that understanding how colleagues adapted and responded to a changing work environment was important to their management team.

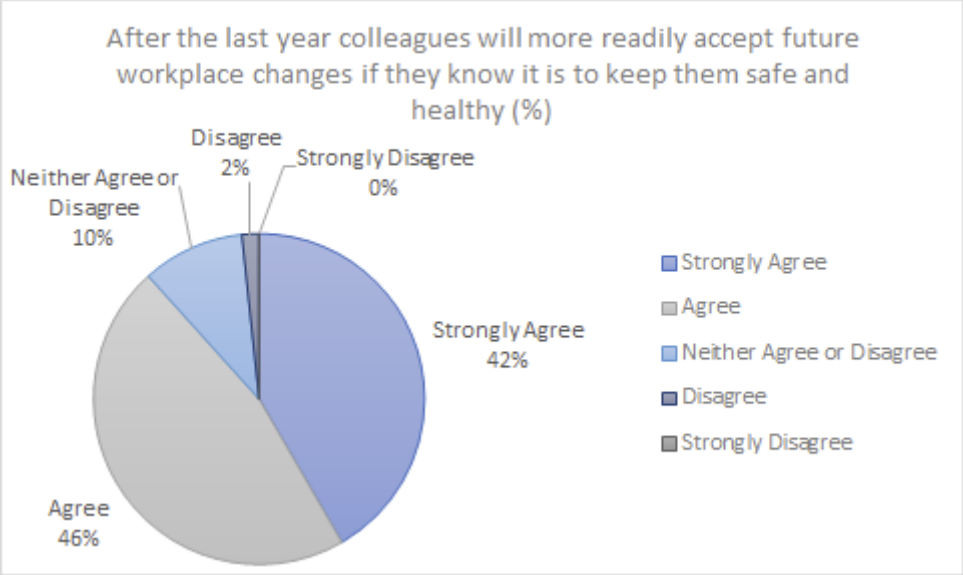

Figure 7.5 After the last year (March 2020 - April 2021) colleagues will more readily accept future workplace changes if they know it is to keep them safe and healthy (n=60).

Participants largely agreed that colleagues would more readily accept future workplace changes if they knew it would keep them safe and healthy which is also a very positive consideration of how workplace safety culture may be changing as a result of the pandemic.

7.3 Themes: Lessons learnt

7.3.1 COVID-19 quick response

Many organisations set up response teams or committees specifically to manage the COVID-19 situation. These committees and groups often had a wide remit which could quickly gather the necessary information and resources available, including financial and human resources to ensure that business operations could continue as safely as possible. The importance of the establishment of these groups was the evident prioritising of OSH as a leading mechanism for workplace adaptation ensuring business continuity, which to date may not have been considered as essential.

National Agency 1: "The end of February we set up the Covid committee here, and it took in elements from all of the different sections around the business and they were all very open and willing to listen to what we had to say, from both the health and safety and the facility side of the business, which is rather unusual in most businesses … like the committee would have been at a managerial level, you know it was chaired by our chief operating officer. So, it held a lot of weight, when they were reporting back up into the executive management team so yeah, I was prepared and in fairness, between myself and my boss who's the COO we did kind of push the agenda very robustly from the outset and we started to make the contingency plans and get them lined up." (FG10)

Financial 1: "We acted quickly, and we managed to set up sort of steering groups and working groups sort of with the board which, which we could turn to pull on many resources so yeah, we weren't in a bad place." (FG16)

Manufacturing 4: "Uh, well look, I could say we weren't prepared in February, but we were very quickly prepared in early March as soon as the bombshell struck. And we immediately formed what we would call now a COVID Committee which comprised of some members of senior, senior management, along with key sort of representatives from employees, including our safety representative committees and leaders there. And it started off meeting on a daily basis, and then, when it went down to a weekly basis, with communication being the key factor to everybody in the entire organisation. So, that was our, you know, my first key sort of engagement with COVID from, from my role was, was that." (FG2)

As the participants described, these COVID-19 committees enabled their members to discuss the ongoing pandemic issues in an open and transparent manner, which involved voices from all sections within the organisation giving them authority to initiate changes and adaptations as rapidly as possible. However, in some instances these committees could become bogged down when there were too many people involved and decision making slowed down as a result. This then led to disaffection among employees that these committees were not doing what they were intended to. Construction 5 shared their negative experiences as their response committee grew in size.

Construction 5: "It was managing that and trying to when you have, I think at one stage we had something like 36 people on a committee and that can be a stretch to manage that, to the point that we had to tear that down into we can't deal with 36 people we need to tear that down and that that's what we did." (FG11)

Many of these committees relied heavily on their professional connections to share relevant information and resources on the pandemic. Many OSH professionals referred to the connections they have maintained from their health and safety programmes that they were able to share information with and from former classmates and sometimes lecturers. Other discipline specific networks were named with praise for their coordinated response to assisting organisations with up to date and relevant guidance. The Construction Industry Federation (CIF) OSH network was praised by many from within the construction sector but also from organisations that do not have anything to do with construction, for providing guidance which could be used in many sectors.

Construction 6: "We stared up a group to put together an SOP from CIF from and induction and all that so it was at the front line of the relevant information and what was happening so that was great from the company perspective that everyone else that's feeding into that committee will get a lot of expert opinions and that's so It put my company in a great position to actually tackle the Covid you know what I mean, so we were probably one of the first companies along with the CIF Member companies that's in the committee to really understand the impact it was going to have on trying to get as best prepared for the actual outbreak that was going to happen, you know yeah." (FG11)

The support from non-governmental organisations like the CIF is further discussed in the following sections.

7.3.2 Information search

While many participants demonstrated a wide ranging capacity to find relevant COVID-19 related information from a global variety of sources to facilitate their decision-making on workplace control measures, some organisations felt that their regular go to sources for OSH information was not as forthcoming as they would have liked / needed as the crisis began to unfold.

Logistics 1: "I suppose like I don't mind admitting I was like a rabbit at headlights some days when senior fingers were looking for me for advice and I'm getting advice from the Internet, which I don't like to do to know, but you're getting from sources that are credible in terms of the HSA and the HSE but you're only advising them on what the best practice are on that particular day was and then you're looking at the news every evening, and it has changed." (FG13)

As the information was constantly updating and changing with information from different sources sometimes being contradictory, many OSH professionals often found it very difficult to progress with decision-making with the level of uncertainty. Many participating organisations expressed dissatisfaction, disappointment and frustration with the often contradictory messages between national and international OSH agencies / health authorities in the early stages of the pandemic.

Construction 8: "We started to put together a template for all our projects. You know, based on all the different information and headings that we had from the HSE and from the media, I suppose as I suppose what might be best required to manage." (FG12)

Construction 9: "It was maybe the one issue was having the required information, there were sources, like the HSE, the WHO there was contradictory information at times, and it was trying to determine which was the correct set of information, but then I suppose the one unknown that nobody could tell you was the actual impact, what would happen in the next month, and the Month after that, so they were the things we looked at." (FG14)

Similarly many participating organisations felt that the information being circulated through the media was often based on data that was already old by the time it circulated. Real-time data provided by the health authorities was welcomed as soon as systems were established to disseminate it with many organisations doing their best to communicate to their employees not to trust information being

relayed by the media or in particular social media. Many OSH professionals indicated that they were concerned when making decisions - that they were uncertain on the veracity of data published that they were seeing as they were unsure if it was established definitive data or tentative data and also that research may not have been vigorously peer-reviewed. It was felt that this uncertainty regarding data authenticity had a large impact on how judgements and decisions were being made by OSH professionals in the early stages of the pandemic - effectively many felt that they were "flying-blind".

Consultant 4: "A safety practitioner the smartest thing to do is read nothing that's not peer reviewed journals even in the early days, because there's a you know, an unwitting bias that's creeping in, because of poor data coming from newspapers or whatever, and the best thing for a safety practitioner, close the doors ourselves and go with hazard risk and mitigation." (FG15)

Communication with employees surrounding decision making was considered crucial with many OSH professionals indicating that they did their utmost to ensure transparency surrounding decisions made as well as continuous communication to update employees as new adaptations were implemented. As Infrastructure 8 explained, definitive information provided to employees offered a sense of security which was what they really needed i.e. the assurance that their OSH and management teams were doing their best to keep them and their families as safe as possible.

Infrastructure 8: "Right, but I think the safety became far more prominent like we were always there, but we were telling them stuff like there was so much people looking for information and we got great praise in the beginning for you know how it's been handled and how we're communicating and because people were looking for answers and looking for definites and it seemed to be safety was seen in a very good light." (FG14)

With OSH professionals being seen by both management and colleagues as the "go-to" source of information, ideas and plans for dealing with COVID-19 many felt under extreme pressure to deliver with many reporting very long hours and being permanently switched onto the pandemic response in the early stages particularly the first and second lockdowns and the summer period in between highlighted as very stressful periods. Though many also reported feeling a significant sense of satisfaction that their work was being appreciated and that they and others could see the impact OSH management in response to the pandemic was having on business continuity and even morale amongst employees.

Construction 10: "What I found difficult, and I think most and you're probably picking this up in some of the other study groups is people were naturally gravitating towards us for the information and for that guidance when we didn't have it ourselves, you know, there was that sense of you know how basically we were just reading off, of whatever information, we were getting from government and from site based or what site was picking up from other areas, and it was that fluid and that reactive." (FG15)

For organisations with international operations or that were part of a multinational group, a key challenge that emerged was the response to the pandemic in different jurisdictions as well as when differing levels of transmission were occurring in the local communities. As waves came and went in various countries, the responses / restrictions were very different, and this proved a challenge to many OSH and HR professionals. It could conversely also be a boon at times when one international partner was dealing with a significant outbreak or challenging community situation the lessons, they learned could be shared amongst their international partners giving advance preparation a possibility to embed before the same challenges arose here in Ireland. Many OSH and HR professionals when dealing with multinational aspects of COVID-19 response relied heavily on international agencies that were researching and offering guidance from a global perspective e.g. the ILO and the WHO. Johns Hopkins University was singled out by many participants as a reliable source of global information that they could use in their response planning.

Infrastructure 3: "One thing I didn't mention earlier is when you were asking about sources of information, because the African waves were behind the European ones, we spent a lot of time tracking the numbers on John Hopkins websites, so that was one of the metrics we were using all the time to try to make a decision about you know at what point should we take whatever action it is that we've decided, we need to take." (FG13)

Since COVID-19 was an unprecedented pandemic for everyone, many OSH professionals indicated that it was a steep learning curve for them even though many had considered bird flu scenarios in their safety planning for emergency scenarios - the reality of a fast-spreading pandemic versus the hypothetical bird flu scenario planning some had undertaken was vastly different. Some OSH professionals indicated that they had contacted their old lecturers from their educational programmes asking for learning materials on infectious disease control as they were not as up to date as they would have liked. As many OSH professionals began to re-orient and adapt their organisations safety control measures through revised risk assessment processes cognisant of COVID-19 many expressed the value of lifelong learning that OSH has instilled in them as a discipline that is continually updated to reflect changes to society and practice that are linked to an established research evidence basis.

7.3.3 Learning curve

OSH and HR professionals' sincere expressions of being emotionally drained trying to “look after” their colleagues and their colleagues' families was conveyed in every focus group. Most participating professionals indicated their sense of obligation and duty to fulfilling the expectations of their roles to their utmost extent as this was a once in a lifetime scenario and people were dying. That sense of duty and obligation coupled with perseverance, ingenuity and innovation led to significant workplace process changes all in the name of ensuring the safety, health and wellbeing of employees and an innate sense of pride in their accomplishments resonated in each focus group. However, that pride was definitely tempered through the stress many of those participating in the focus groups felt they were under in order to keep organisations operating under such extreme circumstances.

Construction 11: “No, to be honest, like I’d never, honestly no, you know because it's new pandemic I didn't know like none of us knew anything, we were all learning at the same time, what was going on and so no, I mean like I do have coping skills in work, for instance, for stressful situations, of course.” (FG12)

National Agency 3: “That risk was based [on] which most of times, HSA interactions are denounced so yeah learning curve for us.” (FG16)

Fortunately, most participants indicated that they learned pretty fast as per their experiences in education which taught them to be innovative and adaptable to emerging scenarios.

Construction 1: “And I think we're fairly swift in acting at the time, though, and so I think we learned pretty quickly that the expertise wasn't within our organisation as well, so we needed to do some pretty quick learning.” (FG13)

Construction 10: “But yeah, so it's you know, it's um, it was very much you know learning as we're going, getting best practice, putting it was more let's see what common sense approaches, we can put on this fairly quickly.” (FG14)

A few OSH professionals preferred to do their own research rather than just follow the established guidelines when there was a level of what they considered themselves as scientific uncertainty, such as Infrastructure 1, who owed this capability to previous experience and education.

Infrastructure 1: “And, and perhaps that was because I've been involved in high risk sectors I’m used to doing research myself I didn't rely on the guidelines or wait for guidelines and I drove myself mad reading medical journals in the first one or two and making up my own mind of what was going on here and what was happening with and based on that I’d say from experience and maybe the courses we've done in the past, I think I was prepared to face the challenge.” (FG13)

While some OSH and HR professionals struggled with the large volume of information generated by agencies and authorities which added to their already steep learning curves, many participating professionals expressed enjoyment in the process of gaining knowledge about COVID-19 and

infectious disease and emergency management brought about by the pandemic. Though it should be noted that the participants who expressed that assertion were predominantly in low-risk working environments.

Financial 1: "The usual suspects [aspects of] facilities, etc, etc, so yeah, I was never overwhelmed with it, to be honest. And be, some people and I said this and probably a bit macabre, but I quite enjoyed the experience from a professional point of view, it's given you a great deal of knowledge now." (FG16)

7.3.4 Staff education

Alongside their own learning, OSH and HR professionals participating in this study also indicated that it was essential that they educated other critical staff in their organisations to ensure the compliance with the control measures (especially in the event that they themselves may contract COVID-19 and needed other personnel to take their place). It was also of paramount importance to educate all employees on new processes and procedures as they arose - so consistent and timely communication was considered an integral part of all actions taken.

Infrastructure 7: "We put all our precautions in place, and we've gone through doing the training to try and educate people [about] what was a huge learning curve for ourselves because we didn't have any information or know anything about it." (FG8)

Infrastructure 10: "Then our offices are open and even though in level five with the essential, so we had training, then for people that were in office in relation to the first day we had to look at first aid training in line with the COVID response." (FG6)

One of the challenges mentioned frequently by the participants was that the employees tended not to wear masks at the workplace all the time.

Infrastructure 9: "Yeah, the same as Biopharmachem 2 and Financial 2 really was very much about the mask wearing was our biggest obstacle along the way, again wearing other PPE with it and the education that needed to go with that that for sure was a challenge around that time." (FG3)

Construction 11: "I suppose we just have to make sure that everyone was re-inducted completely before they could come back onto site and to me it was just more to make it clear to them that you know face masks have to be worn all the time now and you know you have to do questionnaires before you come into work, you have to do the CIF C19 induction before you can go back onto a building site." (FG12)

Educating colleagues / employees about reliable sources of COVID-19 information source was also an important task for OSH professionals to complete as many found that social media false or misinformed narratives / information was having an influence on their knowledge and behaviour.

Biopharmachem 1: "It was to give the guys, the information there's been X amount of cases in the country, this is what it means and make sure that they weren't getting the Facebook information and that they were getting the proper information that we can provide at the time now the thing is that." (FG3)

In some very male dominated industries, participants often found it difficult to communicate and engage with younger employees about COVID-19 safety related information. This was perceived by the participating professionals as a level of naivety on the ramifications of the pandemic by the younger cohort as well as the impression that the younger workers considered themselves less at risk from COVID-19 should they contract it. There was also a sense that the younger workers could also not perceive the risk of bringing COVID-19 either into the workplace or back to their homes. This was especially more prevalent after the national vaccination programme rolled out. This required participating OSH and HR professionals to allocate further time and resources to educating this particular worker cohort.

Manufacturing 6: "I suppose for either our [organisation is] technician based, you know, probably 20s 30s 40s and their age profiles you're trying to communicate with those folks and trying to bring them on board, and generally quite a male population based as well, that's the type of population based we're dealing with." (FG6)

In addition, participating professionals found themselves having to educate colleagues / employees on non safety related regulations and policies, but also about the general skills and services needed to work from home, such as how to use online meeting platforms and similar softwares. Many felt that this because they had become the most visible communicator from management level and they became the "go-to" person for all queries during the pandemic.

Infrastructure 10: "Looking at teams' and Zoom's which none of us had really been involved in previously, so it was an education and a baptism of fire all at once." (FG6)

7.3.5 Lockdown also equates to "breathing room"

Although lockdowns significantly restricted most employees from commuting to their workplaces, causing inconvenience for business operations in many companies, a number of participants indicated that lockdown actually gave them some breathing room for advancing preparation for when workers could resume normal on-site operations. This was of particular importance to the construction sector.

Construction 5: "I was actually quite relieved when the first close down came I couldn't probably say that at the time, because it was such a major impact on the industry that It give us time to breathe and think and plan and it's from that date on to I think it was May the 18th, when we opened up, but by mid-April, we had a really good, we really had a good SOP standard operating procedure in place, based on all the knowledge that we had brought together and we had the induction in place, so I think we were well placed at that point to deal with it and give people time to prepare." (FG11)

At the commencement of the pandemic, as the information landscape was in constant flux, the first lockdown period provided organisations with precious time to plan out adaptations and revise or create relevant policies and procedures.

Construction 10: "And then learn as we're going along and that's kind of where we got ourselves to and I actually think the first lockdown period was very, very useful for those of us who, especially for those of us in construction where we pretty well and especially foreign direct investment construction which has effectively kept going through since then, that breathing space period to get our heads together and get that you know that common sense approach and that commonality and the best practices out there was a godsend because, without that, we would have just been still chasing our tails to a large degree, I think and it just gave us that three month breathing space window to get our procedures and processes in place." (FG15)

Construction 4: "The breathing room was definitely you know, we were putting stuff into place but it was moving faster than we could, we were reacting all the time and the information that came out daily was different, something that was always a change so when it did lock down, it was great." (FG11)

Participants coming from public service intimated those lockdowns were an opportunity for them to get as prepared as possible with many feeling a sense of relief that they had that time to design for adaptation. There was also a sense of collective relief that the pandemic was affecting operations in both the public and private sectors equally.

Local Authority 1: "Because everything I said, the first two or three months where nearly nothing was happening, except emergency situations, gave us a good opportunity to get things in play." (FG11)

Local Authority 4: "Listen, it's a relief if I'm honest with you that everybody had the same issues." (FG9)

7.5 Discussion

While many Asian countries were better prepared for an infectious disease outbreak because of lessons learnt from the previous severe acute respiratory syndrome (SARS) outbreak (Ru, Yang and Zou, 2021) there was a level of perception that perhaps the pandemic could be contained in Asia or that it would be many months before it emerged in Europe and Ireland. Given the distance between Asia and Ireland, it was understandable that senior management could initially underestimate the overall seriousness of COVID-19 and mobilise their OSH and HR teams with greater alacrity than that

which occurred at the start of 2020. Similarly, the misconception that Ireland has a geographic advantage of being separated from mainland Europe would provide more time to prepare and mobilise was a misnomer considering the level of air travel between Ireland and mainland Europe. While most organisations' management was not prepared for the speed and scale of what was required to ensure business continuity, fortunately most OSH and HR professionals that participated in this study were researching and observing what was happening globally as the pandemic began. This demonstrates the advantage these professionals have with keeping up to date with the latest advancements to protect the safety, health and long-term wellbeing of employees.

Concerned that organisational productivity could slow as a result of COVID-19 preparedness measures, it is understandable that senior management tried to avoid the liability of overestimating the risk of COVID-19, or that organisations waited to take action until national guidelines were announced. Nevertheless, findings from this study underline the corporate value of OSH while the situation was new, essentially when a previously rare risk in workplace settings (with the exception of healthcare sectors) suddenly became a common risk and OSH strategies that already existed could be adapted and proven to be effective.

Most of the participants in this study indicated optimism that OSH would be considered an integral part of public health moving forward. Many expressed that as we can each contribute between a quarter and a third of our lives to working, OSH should be much more integrated into public health policy and strategy. The importance of education and communication relating to OSH and the benefits to employees was expressed as a key mechanism moving forward as society emerges from the pandemic and it becomes an endemic that needs to be managed as part of day-to-day OSH management rather than as emergency management.

As the world looks to the future, how workplaces manage future pandemics will be crucial in preventing / managing outbreaks and the OSH practitioners responsible for that management will be crucial to the overall public health response (Fadel, Salomon and Descatha, 2020). Previously, OSH management was deemed less important than business performance at some workplaces, with occupational risk assessments sometimes considered as bureaucratic paperwork rather than as necessary to ensure the long-term health and wellbeing of employees (Podgórski, 2015). However, as research has proved that workers become more productive if they feel protected, organisational management has gradually realised the significance of safety prioritisation as part of ensuring the optimal performance of their operations (Shikdar and Sawaqed, 2003). Though COVID-19 has negatively impacted worker safety worldwide, it simultaneously emphasised the importance of robust

OSH management especially during a crisis. OSH professionals have always been vital advocates for employee safety to senior management but now more so than at any point in the age of OSH as its own discipline.

Most participants expressed that there needs to be an acknowledgement nationally of what the OSH profession did to ensure businesses and society stayed open during the hardest days of the pandemic and that they hoped that their efforts would not be forgotten as the aftermath of the pandemic is investigated and researched. Similarly, many participants indicated that they hoped the key lessons learnt from the pandemic will become embedded in OSH management at organisational, national and international levels moving forward not forgotten as we are likely to face global pandemics with greater frequency as the deterioration of the global environment leads to greater interaction with unknown diseases that were previously out of reach of humanity.

Chapter 8 Emergent Theme: Worker Mental Health and How to Support

8.1 Introduction

The emergence of COVID-19 has resulted in workplace adaptations or operational/environmental changes at workplaces worldwide where in order to mitigate transmission risk, employees had to rapidly adapt to new processes that were dictated by relevant public health measures including, working from home (WFH) or in the case of essential workers to social distancing, the use of Personal Protective Equipment (PPE), and / or frequent testing. As in the case of emergency scenarios these new processes were instigated often without adequate appraisal of the potential mental health impacts or the psychological adjustments needed.

Adverse psychological outcomes were observed from the beginning of the pandemic when employees, in addition to adjusting to public health measures, were challenged by mandatory quarantine, school closures, unexpected unemployment, and related uncertainties (McGinty *et al.*, 2020; Pierce *et al.*, 2020). Factors contributing to adverse mental health impacts on employees during COVID-19 were summarised by a review study (Hamouche, 2021) from several aspects. Specifically, heightened perception of COVID-19 contagion risk has been identified as a predictor of poor mental health. The perceived risk of being infected at work which varies depending on demographics (Ingram *et al.*, 2021) is positively associated with emotional exhaustion (Falco *et al.*, 2021). Also, individuals may fear for their family members' health and safety (Brooks *et al.*, 2020). The level of information / misinformation that arose via Infodemic versus the unknown (Garfin, Silver and Holman, 2020) contributes to pandemic fatigue as individuals are constantly exposed to an overload of rapidly changing COVID-19 information (Cuadrado *et al.*, 2021). Quarantine and confinement slow the spread of infectious disease while potentially increasing risk of anxiety and depressive symptoms (Pierce *et al.*, 2020). Lack of social interactions between colleagues can increase employee stress levels (Pierce *et al.*, 2020). Stigma and social exclusion arising from their crucial work in the pandemic was frequently observed among healthcare workers leading to psychological distress and depression (Zhang *et al.*, 2020). Additionally, individuals experiencing loss of income were reportedly more distressed and in poorer health (Brooks *et al.*, 2020).

This section of the report considers the findings regarding COVID-19 adaptation impacts among employees, focusing on mental health impacts and support from their organisations that emerged through the focus groups.

8.2 Impacts During different adaptation stages

The mental health impacts among employees are reported from three stages of work adaptation arising from the pandemic: before adaptation, during adaptation, and post adaptation.

8.2.1 Before adaptation: I've never experienced a pandemic before

As expressed by the focus group participants, the emotional impacts such as fear, anxiety and panic were frequently observed from their colleagues / employees at the beginning of the epidemic. As Construction 5 explained, COVID-19 was an unprecedented public health emergency for most people, which inevitably makes employees stressful.

Construction 5: "It was, I found that a very stressful time because you know you're really, I've never experienced a pandemic before you read about the Spanish flu, but this was something totally different." (FG11)

Infrastructure 1: "They were a little panicked at the start were they all going to get it out working on the side of the road or wherever they may have been, and I think the assurances we were given them, and we were explaining how the disease was being transmitted." (FG13)

Infrastructure 1 had made similar observation, and thus tried to provide some information with certainty to reassure the employees of the situation, such as explanation on the disease transmission rationale to ease employees' level of panic. Such educational processes for employees were crucial, otherwise there was a level of mistrust of the contents from unreliable information sources like social media which could be misleading (Sharma & Nuttal, 2016). Meanwhile, panic behaviours amongst employees / colleagues social referents also had the capacity to contribute to an exaggeration of their fear and stress, as the example given by Local Authority 1 attests.

Local Authority 1: "It was madness at the start there was, the handling of money, like is that safe, you know there was people bringing in money and putting it in envelopes and locking it in safes and stuff like this totally fishing in the dark at the start." (FG15)

Even as an OSH professional, Construction 7 had experienced the emotional impact of frustration in themselves and their colleagues when COVID-19 emerged. Since no formal messages from their

organisation's management was available, employees were in the dark regarding the plan of action for their workplace, and thus felt unprotected from the risk of transmission while at work.

Construction 7: "I'm just being honest here on that, and what I found frustrating, and I think I remember from the very first announcement, there were Friday afternoons and it meant that you were now in crisis mode on over the weekend and it didn't allow I don't think employers anywhere, the opportunity here to plan this during the day, I think the schools lockdown and they got notified in morning, and they were leaving by lunchtime all the parents had to arrive and get them home, but in the workplace, none of that was ever forward." (FG14)

Construction 11: "I know definitely before the first lockdown people were really frustrated and upset but basically, none of us knew anything about Covid and what was going to happen, so people were frustrated that they were still working on site when they didn't feel like they were safe to be working on site." (FG12)

As evidenced, if organisations provided their employees with frequent and timely updates on COVID-19, the anxiety and frustration was alleviated by a renewed sense of control. However, the failure of in-time updates resulting from inadequate organisational preparation in response to the public health emergency led many participants to observe a disconnect in their colleagues / employees that evolved into a level of fear and distrust of the organisation when recommendations / adaptations were made. Whether prepared or not, it was common for organisations to receive significant volumes of health and safety related queries from their employees at the beginning of the COVID-19 crisis. This often led to OSH professionals having to either make decisions without prior management approval (to beg forgiveness rather than ask permission was articulated more than once by participants) or to be an apologist for management's lack of decision making while they waited for direction. Many participants reported that even when queries were not OSH related the queries were still directed to their team as for many employees the only team they felt was capable of providing any information was the OSH team.

Local Authority 1: "We were definitely not ready, and as Construction 10 said, all queries seemed to come to health and safety, to see what we were doing and what we could do." (FG15)

For participating organisations that had an international business aspect, many had access to a wider range of information from global partners which often led to those organisations supporting other national organisations through peer network information sharing processes. As many organisations that had an international partnership / process reported in this study that they had access earlier and to more information sources before COVID-19 hit Ireland, and were thus prepared earlier. These participants felt that their colleagues were much more ready to face the challenge COVID-19 would present and were accepting of adaptations from the outset. However, as Biopharmachem 3 described, although they were prepared to adapt to the emergency scenario plan that was informed by their

global partners experience, many of their employees were still not psychologically prepared for the pandemic when it did emerge in Ireland.

Biopharmachem 3: that was never going to be easy and this is just probably a game changer it's changed multiple things for the future, so plans are in place to certain extent, and through our corporate US would have leveraged plans and then copied them. While you can plan for the scenario, I don't think it fully, it doesn't fully psychologically prepare people for something that they don't ever expect to happen. (FG14)

Since COVID-19, as an unprecedented global public health emergency, neither individual employees nor their organisations had empirical experience. Employees' mental health issues observed in this stage by our studies participants were reported mainly to be associated with information uncertainty (Nicomedes & Avila, 2020), which required OSH professionals to provide in-time updates and reliable information with employees in relation to the pandemic in order to allay the fears and anxiety which arose from that uncertainty.

8.2.2 During adaptation: people want the contact, [but] they are afraid of contact

With COVID-19 lockdown control measures implemented nationwide, most organisations had to adapt their working arrangements to adhere to these strict measures. To align with different levels of lockdown restrictions, a large number of employees were sent home to work or put on furlough to gain the national pandemic social welfare payments, especially those who were not essential workers.

National Agency 5: "It's mainly from those who are working from home, some of them are, you know they're single people, they're living in a bad status or something like that. They haven't even been there, working from an ironing board if [they] have a laptop. Lockdown has, you know, has kept them indoors are restricted to 5K." (FG5)

Consultant 1: "For staff, particularly the staff that would be, for example, living on their own anyway, and then COVID came along, so there were socially physically isolated because their social interaction was in the workforce and then that went by the wayside." (FG8)

As Manufacturing 1 observed, the mental health issues resulting from isolation at home was more severe among non-national employees who may not have had access to family support while being in Ireland.

Manufacturing 1: "We have someone that has a mental health issue, because it is only recently, I mean just really struggling at the moment, but, as well as that there's a couple of, we have a couple of foreign people that work for us, they're on their own and they're going home from work and they're isolated in the own and really constantly go back to the apartment on their own, where with a roommate they may don't know or somebody will be shared around. They just stucked [stuck], with no family, something like that, see it's still we can see it's tough on them as well." (FG2)

Nevertheless, even for people who have family support available in Ireland, the fear of contracting the virus at work contributed to social interaction with colleagues being hampered when at work. This was exacerbated in employees that had underlying health conditions which made them more susceptible to transmission and / or severity of resulting illness. This individual perception of their own physical health (which may or may not have been poor) making them potentially more at risk is associated with higher stress levels (Tam et al., 2004), which was also the case in employees with a history of chronic illnesses (Wang et al., 2020). This more vulnerable cohort physically also appeared to be more psychologically vulnerable and be more likely to be at risk of mental health issues arising from the pandemic (Yang et al., 2020).

Infrastructure 2: "And she happens to live on her own, she's a cancer survivor and she's also an asthmatic so you know a lot of a lot of issues that you'd want to be helping people with, let's say. And the IT point of it was really stressful for her." (FG4)

Consultant 1: "With regards to the seniors, more senior people and my experience in the out, doing training and courses, there's some of them are fearful, absolutely fearful because they've underlying conditions." (FG8)

Also, as older adults can have a reduced social support compared to other cohorts due their children having left home (Yang et al., 2020), the impact of that lower level of social support was a contributing factor that many participants commented on. Similarly for this older cohort of workers the switch to home working and the resulting online / hardware / software IT issues proved to be an exacerbating factor in their stress levels arising from adaptation. With many mental health services supported through EAPs switching to online also this added an extra factor in seeking support from such services when they really needed the human connection (Yang et al., 2020). As the COVID-19 mortality rate was higher among older cohorts, older workers demonstrated more fear and anxiety compared to their younger colleagues in observations from and interactions with participants in this study. This was echoed in many of the participants' personal experiences also so they could empathise with their older colleagues / employees, for example Consultant 3's complex feeling when they tried to give their grandmother a hug as they normally did during the Christmas period of 2020.

Consultant 3: "I saw my grandmother for the first time in three months at Christmas and I went to give her a hug, and she was actually terrified that I was coming into her personal space like, you know. I thought the hug it was important, but she wanted to get out of my arm straightway, so you know, I'm up[set] at the same time she's panting for human contact, so it's having weird effects on people, people want the contact, [but] they are afraid of contact as well." (FG8)

COVID-19 exemplified the necessary balance between physical health and mental health. All people need human contact to support their mental wellbeing which in workplace contexts requires supportive colleagues and leaders through an experiential rapport building, but conversely most people were afraid of the COVID-19 risk to their physical health while at their workplace and so avoided that necessary human contact with their colleagues depriving themselves of much needed mental support as a sacrifice to maintain their physical health. Similarly, this can also be observed among employees who are still reluctant to access their workplace since lockdowns have lifted and restrictions have passed.

Construction 8: "I think after the first lockdown, you know when we returned to work there was still a large degree of fear there so there was between operatives working on the ground, you know. I would say, it certainly impacted from the point of view of whether they were unsure about the situation at work, how was it going to affect future projects that they may have had lined up or where projects were put on hold. I think that impacted a lot of people on the ground from, you know a lot of people worry about that sort of stuff obviously." (FG12)

It is important to note that many employees that were observed by the participants in this study avoided accessing their workplaces because of a need to protect vulnerable family members and by avoiding being on site they reduced the potential risk of exposure through them to their family members. In this sense the lines between work life and homelife were becoming blurred and the impacts of one environment had the potential to impact the other and vice versa.

Construction 11: "Yeah, a lot of people would be far more nervous now about coming into work particularly if they have someone at home that could be considered a vulnerable person, and I also found that their mental health has definitely been affected during Covid I think everyone has." (FG12)

Local Authority 3: "Particularly from our side, you'd hear more staff talking about maybe their mother wasn't well or the father wasn't well or granny was living in the house, and that they were concerned about that." (FG9)

The participants in this study observed in their colleagues that family safety became an even greater concern if there was disquiet and uncertainty amongst employees relating to how the organisation was disseminating information and whether the organisation was seen to be transparent in their decision making. This was even more noticeable when there were workplace outbreaks and employees needed more information on potential close contacts.

Construction 11: "Since coming back after any of the lockdowns there is a lack of communication on a building site just to say there's a positive test, there's a positive case on a building site but it's not communicated properly and the precautions aren't communicated properly. People really do get nervous, and they got really scared. Again, especially if they're living with someone who could be considered a vulnerable person." (FG12)

Even when employees were willing and able to go back to their workplaces, there was still a palpable level of caution regarding close contact with their colleagues. Participants in this study indicated that the hyper vigilance that many employees were demonstrating while being very safety conscious does not lend itself to rebuilding a positive safety culture on site. This sense of insecurity and almost distrust has been articulated by Manufacturing 5 during the focus group discussion.

Manufacturing 5: "They jump out of the way now, when you come towards me, they kind of 'stop, here is my space!' People are more aware now and it's mad, sometimes even if you're passing someone on the stairs and they step back to the bottom, to the floor, I see potential in downtown shopping centre allowed do these guys, do you know what I mean you kind of have to you know, like be realistic about themselves, I think that's probably the thing that people are more aware of 'whoa, don't come too close to me.'" (FG4)

One aspect which was noted by more than one participant was in relation to employees feeling pressure to return due to financial constraints even if they didn't want to return on site for fear of contracting the virus. This was evident in participants reporting that some of their employees came from low-income groups where these employees were eager to work even knowing if there was a high risk of transmission because their financial status was impacted by the pandemic and by necessity they needed to be back in full employment rather than on furlough. This financial insecurity was also an added stressor. This is in line with existing study findings in regard to job insecurity arising from the pandemic (Zhang et al., 2020).

Manufacturing 2: "We also, the nature of our business, we have a lot of people that would be beyond near minimum wage, so they'd be the type that are more inclined to come to work rather than, say, someone that's on a good wage, because they need the money." (FG2)

As the COVID-19 pandemic unfolded with a relatively high fatality rate globally, with health-vulnerable and older cohorts more at risk, every worker was confronted with the concept that contracting the virus could lead to them infecting family or friends which could result in their illness and possibly death. This mental stressor became ever present in society but in particular with workers who were in high-risk environments such as healthcare or residential care and essential services. Many participants indicated that in some of these professions they observed a level of self-imposed stigma amongst their workers that they could by accident due to the nature of their profession contribute to making a family member ill. This mental health stressor was one that many participants in the study reported as being one that colleagues came forward with when seeking help / support. Furthermore,

when a loss did occur, whether it was family, friends or indeed a work colleague due to the restrictions on gathering, many failed to have a normal grieving process which was often accompanied by an absence of ritual or funeral or group collective support after a loss. This was observed by participants in this study as a level of disenfranchisement to their loss and an inadequate processing of grief with a risk of prolonged grief disorder (Kang et al., 2020). Many participants indicated that this was a particular reason to seek support for mental health through EAPs which our participants noted had a significant increase in usage.

Manufacturing 4: "I know at a conference and I knew a guy here around the meeting. You know, a safety professional, we were still trying to prevent this enemy coming in, coming in the door and I'm shortness are you know, certainly affecting our workforce from, from a health, health perspective, you know I can, enough of them have lost have lost, you know loved ones, through it, as well, which is, which is sad and, and can't do what the Irish do well as give them a proper, proper burial and funeral etc, etc, but that's, that's no, that's no [funeral]." (FG2)

Another very personal example was given by Construction 6, who felt it was a difficult period when their father passed away during COVID. As an OSH professional, their way of maintaining wellbeing was keeping themselves busy at work.

Construction 6: "Management were stressed and overworked as well, like Construction 4 there, myself. I took about four days holidays last year and my father passed away in the time last year as well during the Covid, just in May, so that was a difficult period. But it was for me, it was a way of keep busy was just my nature to do and that the way I maintain wellbeing and I've been grand for like myself personally." (FG11)

As previously mentioned, healthcare workers were at a significant risk of adverse mental health outcomes during the COVID-19 pandemic which warrants much more detailed and directed research than this project could devote to. However, based on the observations and experiences of the participants in this study many issues were discussed relating to their mental health and the impact the pandemic had on them. Participants considered that there was likely a level of anticipatory grief amongst their colleagues as they knew that their patients were either highly susceptible to infection and could die from COVID-19 or that when they did contract it they were unlikely to survive long even with the best their care could provide as there were so many unknowns about the virus and what it and each variant could do to the human body (Zhai & Du, 2020). During the focus groups, we observed that participants from healthcare settings were exhibiting elevated emotions and fatigue (and while none of those involved in the focus groups are psychologists our human empathy and understanding could see this through the ZOOM™ call) more so than other participants. We observed in one participant (Healthcare 7) that they were doing their best to control their emotions when talking about their experiences in the healthcare sector. As they explained to the research team, it was challenging for the healthcare workers to deal with their grief of losing a patient as they were suffering this while

also trying to keep other patients alive and safe, and many of their long-term patients were like family or friends to them. Not being able to grieve while also trying to save others was a particular negative impact noted by the healthcare sector participants in this study.

Healthcare 7: "It's like a war zone, it's, it's devastating. A lot of carers who work they're not there for the money, they're genuinely there because they love caring and there are very very strong bonds and relationships between carers and their residents, I mean they're literally like their grandparents as such. To see staff working homes and they initially are losing 1, 2, 3, 4 not only residents, but sort of their friends, their sort of mentors, their whatever way, you'd like to describe relation, it is, it's just devastating, it is just I mean they are literally just in shock it's very, very severe." (FG6)

For healthcare workers who worked at the frontline, the surge in deaths that arose from the pandemic are likely to lead to moral injury, as the psychological distress that results from the actions / inactions that resulted from the pandemic response can impact their own moral or ethical code as healthcare professionals (Litz et al., 2009). Unlike formal mental health conditions such as depression, a moral injury is not a mental illness as such. But those who develop moral injuries as a results of traumatic experiences are likely to experience ongoing negative thoughts, which contribute to the development of mental health difficulties, and even suicidal ideation (Williamson et al., 2018). While this research did not set out to study mental health impacts of the pandemic, it emerged as a core issue amongst the professionals that participated in this study and when their observations on the effect the pandemic was / is having on their colleagues demonstrated significant negative mental health effects we the research team considered it necessary to present these observations.

8.2.3 COVID in the long-term: workers are tired of the subject and hearing about it

Most of the individuals participating in the study indicated that the ongoing high level of COVID-19 situational awareness was causing mental stress in their colleagues. Especially in sectors with a high risk of COVID-19 exposure, healthcare workers were particularly under this consistent pressure, and always concerned about the virus transmission. While behaviour-based safety requires a significant degree of situational awareness, hyper awareness was leading to observable fatigue in their colleagues by the participants in this study.

National Agency 4: "I would say that the whole issue of fear was there, you know that you're that and that's tied into doing the right thing… you know that we're on high alert and it's ongoing." (FG7)

Healthcare 5: "And I suppose the fear is, if you relax things, even in the workplace too soon, it's like what they're saying nationally, then we could have it [COVID-19] back again so if we go back from one chair to two if some staff aren't vaccinated is that going to cause a problem, are we going to have transfers again." (FG5)

Both National Agency 4 and Healthcare 5 used the term 'fear' as an emotional impact resulting from the constant alertness / vigilance required by their colleagues. This elevated level of alertness at a consistent pace for significant periods was leading to fatigue among employees as our participants reported. Often this fatigue became observable when the necessary safety protocols and resulting behaviours that would have been the norm began to wane. Increased non-compliance with the prescribed control measures was noted as the pandemic wore on and workers became more ambivalent about the pandemic situation, such as the carelessness of PPE use.

Manufacturing 6: "Um again, I think, honestly, I really do think that 80 to 90% of people are very, very committed. And there's just a little bit of fatigue on the facemask wearing as it goes on and goes on, people are getting a little bit more tired of it." (FG6)

Construction 8: "I would say there is certainly, you know, as time went on a certain level of COVID-19 fatigue set in place, and you know, it's like anything when people start to get familiar with it and the fear of it gradually, you know, died off a little." (FG12)

Furthermore, more than half of our participants indicated that constant negative news related to COVID-19 publicised through media and social media had contributed to mental fatigue which was an observable mental health impact amongst their colleagues / employees.

Consultant 6: "It's COVID fatigue that has set in people are sick and tired of the same subject, time after time, and hour after hour, and it's the same stuff and news, it's not new information necessarily, it's just news, so it's very, very much the same old same old." (FG8)

With the emergence of COVID-19, the new aforementioned term 'infodemic' also emerged, describing the massive information regarding the pandemic that was leading to elevated emotions in all aspects of society. The problem observed by many participants in this study was that their colleagues / employees and themselves were not able to disconnect from the constant barrage of COVID-19 specific news, because of the extensive large-scale media coverage. So the balance of getting the necessary information to adequately adapt and protect oneself with being overloaded by information (a lot of which may have been unnecessary or even false in some cases) was one that was difficult to achieve.

Infrastructure 6: "I think that obviously affects my mental health because I don't feel as good about myself, but I think that's also in other people, but the fatigue part of it, I think they're mentally drained of the whole thing." (FG4)

Healthcare 1: "But we're performing at a much higher base anyway because everyone is dealing with their personal COVID and their changed family circumstances so already they've got so many different levels of stress, but not having that time to disconnect and share and offload that piece, absolutely and utterly we're seeing that [fatigue]." (FG5)

In the focus groups, many of the participants also shared their experience on how to alleviate such mental health impacts in their organisation. Many participants reported an increased level of employees coming forward seeking help for their mental health and requesting access to EAPs. This was particularly noted by participants from the construction sector as being a very positive and unexpected impact of the pandemic. Positive in that in this male dominated sector, very few men come forward seeking mental health assistance, but the negative impact of the pandemic pushed many men working in the construction sector to come forward and ask for help.

Other participants noted how the use of online meeting software while not optimal did allow for some connectivity and many organisations developed non work-related social gatherings online during the working week for people to stay connected with one another. Many of the OSH professionals that participated in this study noted that often employees would come to them for advice in relation to some aspect of COVID-19 management but then continue to seek their support with mental health issues once they had established a rapport with them - effectively many OSH professionals noted they almost became workplace counsellors completely unbidden because they were seen as the holder of knowledge in relation to the pandemic or were the visible communicators in the organisation. While most had no problem with this, many felt this extra aspect of their role which emerged was a burden they were neither trained for nor expected to have to fulfill as an OSH professional.

8.3 Discussion

Many studies have focused on the impact COVID-19 has had on mental health issues arising in the healthcare sector due to the long hours spent working in this high-pressure and essential working environment (Greenberg, Docherty, *et al.*, 2020). Suggestions for improving mental health in the healthcare sector include discussions with supervisors who feel confident speaking about mental health (Milligan-Saville *et al.*, 2017); active monitoring for anyone exposed to potentially traumatic events (Brewin *et al.*, 2010); anonymous online self-check tools; and group discussions to help staff

develop a meaningful narrative that reduces risks of harm (Greenberg, Brooks, *et al.*, 2020). The findings from this project corroborate these studies but also highlight the potential value in expanding these supports to other occupational sectors.

Timely and reliable information from organisations management teams regarding COVID-19 become central to the unfolding public health crisis not only from a preparedness and adaptation process for business continuity but also as a mechanism for employees to retain trust in their organisation. With many participants indicating that they observed a level of mistrust of information or confusion arising from conflicting information as a consequence of the infodemic (Solomon *et al.*, 2020) trust in the information disseminated by their employers was needed to allay their fears and concerns. Nevertheless, occupational controls necessary for the protection of workers during COVID-19 had the capacity to impact employees' mental health negatively even when communicated appropriately if they were perceived as overly stringent implying a high-risk working environment in situations where they may not be (Xiang *et al.*, 2020). It is important that when management works to be as transparent in their decision making and communications as possible that they also ensure their employees maintain an accurate perception of what their risks are of contracting COVID-19 in the workplace and provide them with reliable sources of information that informed the decision making process i.e demonstrate that the decisions made and control measures prescribed are based on best practice guidance and information from reliable and informed agencies and networks.

Furthermore, in future emergency scenarios which have the potential for longevity like a pandemic, organisations should consider how they can integrate mental health support into their communication strategies to demonstrate cognisance of what their employees may be facing. Effective communication could include timely reminders that it is ok to feel overwhelmed and to seek help and that the organisation can provide a range of support internally and through professional EAP services where necessary. Though most organisations provide EAP within their OSH programmes, this study shows that not all EAPs were equipped to meet the large-scale demands of a public health emergency impacting employee's mental health and wellbeing. Similarly, the efficacy of EAP may be limited in male dominated industries where stigma prevents employees from seeking out services (Matthews, Gerald and Jessup, 2021) though this study does demonstrate some positive change in that through the observations made by participants from the construction sector. Informal communication through OSH and HR professionals can be an effective "stop-gap" mechanism for mitigating mental health impacts but these professions would require extra training and education on becoming a more robust informal support and guide to more formal support processes.

Finally, while for many working from home was a way to reset and evaluate work life balance for many it was a burden that may have gone unnoticed. Hybrid working arrangements have the potential to alleviate employee isolation and loneliness by increasing opportunities for social interaction and informal communication in such emergency scenarios and workplaces will be in a better position to adapt and achieve a balance in future emergencies. As employees return to work, reinforced occupational health and wellbeing control measures are vital for protection and reassurance. Meanwhile, employers should be open to changes in this "new normal" depending on the situation and whether their work processes allow for flexibility, such as acceptance of the possibility that employees need to remain WFH if COVID-19 risk becomes high again. OSH professionals need to have greater cognisance of the working environments at home when they are needed and incorporate home working into their risk assessments and safety management systems where possible as standard practice into the future.

As this study has gained more information through experiences, observations and insights from the professionals participating in this study as an emergent theme it is necessary to delve more deeply into the data gathered. This report presents an overview of the findings relating to worker mental health impacts. This study has prepared a more detailed journal article surrounding mental health impacts which will be forthcoming.

Chapter 9 Survey Development

9.1 Introduction

To facilitate a better understanding of the COVID-19 adaptation challenges experienced among employees a quantitative survey was designed based on the findings of the thematic analysis that arose from the focus groups as well as from the findings of the two other work packages in the project. This section describes the design of that quantitative survey instrument, pilot test, and its preliminary validation testing.

9.2 The Initial Survey Design

This survey instrument has been designed to evaluate how the pandemic has impacted employees with consideration given to occupational fatigue factors arising from the pandemic asell as the awareness and attitudes towards pandemic communication and workplace control measures. Based on the principal findings arising from the thematic analysis of the focus groups, employees' experiences during COVID-19 adaptation can be investigated from an initial four perspectives (dimensions): adaptation challenges; the feeling of being protected; availability of organisational support; and communication efficiency (through validity testing these initial four dimensions were further refined and expanded). After three rounds of critical discussions between the research team and the project steering committee, 40 questions (items) were developed by the research team across these four dimensions using an eleven-point Likert scale (0-10). The items were divided into two groups – those asked in a positive way and those items asked in a reversed (negated) way.

Table 9.1 Dimensions arising from focus group thematic analysis linking to proposed questions (items) in the survey.

Dimensions and items	Positively formulated items	Negatively formulated items
Dimension 1 - Adaptation	1, 2, 5, 6, 11, 12, 15, 16	3, 4, 7, 8, 9, 10, 13
Dimension 2 - Protection	17, 18, 19, 20, 22, 23, 24, 32, 33	21
Dimension 3 - Availability of Support	14, 25, 26, 27, 28, 29, 30	/
Dimension 4 - Communication Efficiency	31, 34, 35, 36, 37, 38, 39, 40	/

In addition, there were also questions asked relating to demographic information including gender, age and how many years the participant has been working in their organisation.

9.3 Pilot Test

During the focus groups OSH professionals who participated were informed of the development of this survey and the need for appropriate testing and that if their organisation would like to be involved as a volunteer test organisation they could contact us. Seven organisations were granted permission by their management to participate in the survey pilot test for four weeks (25 November - 24 December 2021). The survey pilot test was deployed online by using Qualtrics^{XM}, with each survey link created for each participating organisation. Since one of the participating organisations was a very small company size, the data collected from that organisation has not been included in this report, to ensure their anonymity. Data collected from the remaining six participating organisations were thus used for the reliability and validity testing. In total 568 individual employees across the six organisations took part in the pilot test.

Table 9.2 Survey pilot test: participant demographics

Participant Demographics		**n**	**%**
Gender (N=563)	Female	313	55.6
	Male	242	43
	Prefer not to say	8	1.4
Age (N=567)	18-30	88	15.5
	31-40	142	25.0
	41-50	186	32.8
	51-60	117	20.6
	60+	34	6.0
Number of years worked in the organisation (N=566)	0-5	220	38.9
	6-10	62	11.0
	11+	284	50.2

9.4 Internal Reliability

All the data downloaded from Qualtrics^{XM} were entered into IBM SPSS (version 27) for analysis. After data cleaning, all the responses of negatively formulated items were reversed by using the "recode into the same variable" function in SPSS. To test the reliability of the survey instrument, Cronbach Alpha coefficient has been calculated for the 40 items using the first round of data collected (26 Nov - 24 Dec, 2021). Overall the survey has demonstrated a very good internal consistency (Cronbach's alpha = 0.963).

Table 9.3 Internal reliability of the 40 survey items developed

Items (Cronbach's Alpha = 0.963, N=63)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. My working environment improved during the pandemic	.647	.962
2. COVID-19 safety measures made my work easier	.613	.962
3. I found the workplace changes brought about by the pandemic challenging	.544	.962
4. I felt exhausted when adapting my work to follow COVID-19 measures	.560	.962
5. I felt that the pandemic allowed me time to evaluate my work-life balance	.458	.963
6. I was given the supports that I needed to adjust to COVID-19 measures at work	.816	.961
7. It was stressful adapting to COVID-19 safety measures at work	.404	.963
8. My working hours became longer due to the pandemic	.222	.964
9. COVID-19 safety measures made my work harder	.575	.962

10. I feel that safety culture has declined in my organisation compared to before the pandemic	.618	.962
11. I want the workplace changes brought about by the pandemic to stay	.318	.963
12. Adapting to new working arrangements introduced during the pandemic has given me a better work-life balance	.394	.963
13. My workload increased due to COVID-19	.203	.964
14. My organisation provided sufficient supports to facilitate home working when appropriate during the pandemic	.672	.962
15. I am satisfied with my physical health at present	.392	.963
16. I am satisfied with my mental health at present	.428	.963
17. COVID-19 safety measures at my workplace are clear and easy to understand	.789	.961
18. I feel fully aware of the COVID-19 risks that exist in my workplace	.583	.962
19. I was able to comply with COVID-19 safety measures when doing my job during the pandemic	.421	.963
20. The PPE I use at work to prevent the spread of COVID-19 makes me feel safer	.626	.962
21. I think the PPE to prevent the spread of COVID-19 caused other risks	.168	.964
22. I feel protected from COVID-19 at work	.698	.961
23. I believe that my safety is the priority of my organisation	.742	.961
24. My organisation considered my personal circumstances (family, disability, etc.) when prioritising safety during the pandemic	.763	.961

25. My organisation provided sufficient supports for those who contracted COVID-19	.691	.961
26. As the pandemic unfolded, my workplace responded quickly to the changing situation	.767	.961
27. I am clear on who is responsible for health and safety in my organisation	.660	.962
28. I always know where to find information about COVID-19 in my workplace	.789	.961
29. I have a clear understanding of my organisation's reasons for responding to the pandemic in the way that it did	.751	.961
30. I feel comfortable seeking support from my organisation when or if I have concerns about working conditions related to the pandemic	.772	.961
31. I was consulted in a timely fashion about my opinions on COVID-19 safety measures	.860	.960
32. I feel that as a team we are doing our best to keep each other safe	.678	.962
33. I feel that my colleagues are doing all they can to follow COVID-19 safety measures	.623	.962
34. My workplace provides good communication in relation to COVID-19	.812	.961
35. I have been fully briefed on responses to prior outbreaks in my workplace	.690	.961
36. COVID-19 safety measures are communicated in a way that is easy to understand	.793	.961
37. I feel that any feedback I provided on COVID-19 safety measures was valued by my organisation	.857	.960

38. My health and safety personnel often provide useful talks on COVID-19	.638	.962
39. COVID-19 safety measures were communicated in a timely fashion in my organisation	.810	.961
40. I trust my organisation to keep me as safe as possible from COVID-19 in my workplace	.788	.961

It was therefore not necessary to delete any item, as the overall reliability is very high, and will not be improved significantly through item deletion.

9.5 Validity

In terms of the surveys construct validity, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) is a statistic that indicates the proportion of variance in variables that might be caused by underlying factors (Kaiser, 1970, 1974). High values (close to 1.0) generally indicate that a factor analysis may be useful with the data, and the value is recommended as >0.60 (Hutcheson and Sofroniou, 1999). Bartlett's test of sphericity tests the hypothesis that the correlation matrix is an identity matrix, which would indicate that the variables are unrelated and therefore unsuitable for structure detection (Bartlett, 1954). Values <0.05 of the significance level indicate that a factor analysis may be useful with the data (Pallant, 2013; Field, 2013).

An exploratory factor analysis (EFA) of the survey was undertaken to identify one or more data structures that met the criteria for simple structure, and to confirm that the item loadings were theoretically coherent. Specifically, analysis was conducted using principal components analysis in SPSS with varimax rotation. Initial factor selection was based on eigenvalues >1. Thereafter, factor selection was based on interpretation of the scree plot in which components with an eigenvalue larger than 1 were retained (Cattell, 1966). Items that double loaded >0.4 or did not load on any factor >0.4 were removed.

Table 9.4 The initial exploratory factor analysis result based on the 40 items

Items (N=63, KMO=0.784, p<0.001, with 76.6% total variance explained)	Factor loadings in each dimension								Decision on the item
	1	2	3	4	5	6	7	8	
28. I always know where to find information about COVID-19 in my workplace	.876								Retained in Dimension 1
34. My workplace provides good communication in relation to COVID-19	.872								Retained in Dimension 1
39. COVID-19 safety measures were communicated in a timely fashion in my organisation	.849								Retained in Dimension 1
37. I feel that any feedback I provided on COVID-19 safety measures was valued by my organisation	.843								Retained in Dimension 1
29. I have a clear understanding of my organisation's reasons for responding to the pandemic in the way that it did	.814								Retained in Dimension 1
40. I trust my organisation to keep me as safe as possible from COVID-19 in my workplace	.804								Retained in Dimension 1
35. I have been fully briefed on responses to prior outbreaks in my workplace	.787								Retained in Dimension 1
27. I am clear on who is responsible for health and safety in my organisation	.781								Retained in Dimension 1

31. I was consulted in a timely fashion about my opinions on COVID-19 safety measures	.777								Retained in Dimension 1
30. I feel comfortable seeking support from my organisation when or if I have concerns about working conditions related to the pandemic	.745								Retained in Dimension 1
38. My health and safety personnel often provide useful talks on COVID-19	.732								Retained in Dimension 1
24. My organisation considered my personal circumstances (family, disability, etc.) when prioritising safety during the pandemic	.724								Retained in Dimension 1
23. I believe that my safety is the priority of my organisation	.720								Retained in Dimension 1
36. COVID-19 safety measures are communicated in a way that is easy to understand	.691								Retained in Dimension 1
6. I was given the supports that I needed to adjust to COVID-19 measures at work	.690								Retained in Dimension 1
26. As the pandemic unfolded, my workplace responded quickly to the changing situation	.688								Retained in Dimension 1
25. My organisation provided sufficient supports for those who contracted COVID-19	.670								Retained in Dimension 1
10. I feel that safety culture has declined in my organisation compared to before the pandemic	.636								Retained in Dimension 1

14. My organisation provided sufficient supports to facilitate home working when appropriate during the pandemic	.542								Retained in Dimension 1
17. COVID-19 safety measures at my workplace are clear and easy to understand	.504					.503			Discarded for cross loading
22. I feel protected from COVID-19 at work	.454								Retained in Dimension 1
3. I found the workplace changes brought about by the pandemic challenging		.858							Retained in Dimension 2
7. It was stressful adapting to COVID-19 safety measures at work		.851							Retained in Dimension 2
4. I felt exhausted when adapting my work to follow COVID-19 measures		.755							Retained in Dimension 2
9. COVID-19 safety measures made my work harder		.727							Retained in Dimension 2
2. COVID-19 safety measures made my work easier		.528	.449						Discarded for cross loading
1. My working environment improved during the pandemic	.496	.521							Discarded for cross loading
11. I want the workplace changes brought about by the pandemic to stay			.845						Retained in Dimension 3
12. Adapting to new working arrangements introduced during the pandemic has given me a better work-life balance			.819						Retained in Dimension 3

5. I felt that the pandemic allowed me time to evaluate my work-life balance			.712						Retained in Dimension 3
15. I am satisfied with my physical health at present				.899					Retained in Dimension 4
16. I am satisfied with my mental health at present				.844					Retained in Dimension 4
20. The PPE I use at work to prevent the spread of COVID-19 makes me feel safer				.483	.422			.439	Discarded for cross loading
33. I feel that my colleagues are doing all they can to follow COVID-19 safety measures	.511				.739				Discarded for cross loading
32. I feel that as a team we are doing our best to keep each other safe	.579				.668				Discarded for cross loading
19. I was able to comply with COVID-19 safety measures when doing my job during the pandemic						.758			Discarded as it is the only item in its dimension
18. I feel fully aware of the COVID-19 risks that exist in my workplace	.414					.494			Discarded for cross loading
8. My working hours became longer due to the pandemic							.851		Retained in Dimension 7
13. My workload increased due to COVID-19							.823		Retained in Dimension 7
21. I think the PPE to prevent the spread of COVID-19 caused other risks								.863	Discarded as it is the only item in its dimension
Notes: Varimax rotation converged in 7 iterations and loadings < 0.4 were suppressed									

As shown in Table 9.4, the initial EFA result indicates that the 40 items are suitable for dimension deduction (KMO=0.784, p<0.001), with 76.6% total variance explained. Q1, Q2, Q17, Q18, Q20, Q32 and Q33 were deleted since they were double loaded >0.4. Q19 and Q21 were also removed as they did not have sufficient loading in any of the dimensions. Thus, the validity of the survey was improved by deleting the nine items. The remaining 31 questions were divided into five dimensions to test how difficult it was for employees to adapt to new workplace arrangements caused by COVID-19:

- ***Dimension 1: support from the organisation (Q6, Q10, Q14, Q22-31, Q34-40);***
- ***Dimension 2: adaptation pressure (Q3, Q4, Q7, Q9);***
- ***Dimension 3: work-life balance (Q5, Q11, Q12);***
- ***Dimension 4: health condition (Q15, Q16); and***
- ***Dimension 5: workload/working hours (Q8, Q13).***

The above were further validated by using Confirmatory Factor Analysis (CFA) after the second round of data collection (26 Nov - 24 Dec, 2021). In a Confirmatory Factor Analysis, convergent and discriminant validity examine the extent to which measures of a latent variable share their variance and how they are different from others (Fornell and Larcker, 1981). The result shows the model fit was: $\chi^2/df = \chi^2$ (919)/df (424) = 2.17, $p < 0.001$), CFI = 0.864, SRMR = 0.066, RMSEA = 0.079. The model fit can be further improved by deleting six more items, but we decide to keep them in this stage to avoid overfitting until data are available from a larger sample size. The current survey version can be found in Appendix 2, as well as its user guide in Appendix 3.

9.6 Conclusion

As illustrated, the current finalised survey has five dimensions including 32 items in total. However, Dimension 1 has 21 items which can be further reduced to simplify the survey. In comparison, more items could potentially be developed for Dimension 3, Dimension 4 and Dimension 5. However this would require a further significantly larger and an international validation stage which is outside the scope of this study.

The finalised survey and user guide are available for any organisation to utilise and add additional questions of their own bespoke to their organisation and interpret themselves. The user guide and survey are located in Appendix B and C.

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Appendix A - Current Journal Publications Available

Read more about our larger project publications by scanning the QR codes below:

Ingram C, Chen Y, Buggy C, Downey V, Archibald M, Rachwal N, Roe M, Drummond A & Perrotta C. Development and validation of a multi-lingual online questionnaire for surveying the COVID-19 prevention and control measures used in global workplaces. BMC public health. 2022; 22(1): 1-5.

Ingram C, Downey V, Roe M, Chen Y, Archibald M, Kallas K. A, Kumar J, Naughton P, Uteh C. O, Rojas-Chaves A, Shrestha S, Syed S, Cléirigh Büttner F, Buggy C & Perrotta C. COVID-19 Prevention and Control Measures in Workplace Settings: A Rapid Review and Meta-Analysis. *International journal of environmental research and public health.* 2021. Jul, 18(15): 7847.

Appendix B - Survey

Workers and COVID-19 – Evaluation of their experience

The purpose of this survey is to get your view on COVID-19 related safety measures taken in your organisation, whether you worked from home, at the workplace or in a hybrid/blended mode. Your answers are anonymous and will be used to assist the Occupational Safety and Health management to protect workers from COVID-19 and/or potential future respiratory infectious diseases. You can choose N/A option if you think the question is not applicable to your work.

Your gender? ☐ Male ☐ Female ☐ Other: _____ ☐ Prefer not to say

Your Age? ☐ Under 18 ☐ 18-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ 60+

How many years have you worked in this organisation? ☐ 0-5 ☐ 6-10 ☐ 11+

On a scale of 0 to 10 (with 0 being strongly disagree and 10 strongly agree) to what extent do you agree with the following statements.

Strongly disagree **Neither agree nor disagree** **Strongly Agree**

	0	1	2	3	4	5	6	7	8	9	10	N/A
1. I found the workplace changes brought about by the pandemic challenging												
2. I felt exhausted when adapting my work to follow COVID-19 measures												
3. I felt that the pandemic allowed me time to evaluate my work-life balance												
4. I was given the supports that I needed to adjust to COVID-19 measures at work												

5. It was stressful adapting to COVID-19 safety measures at work 6. My working hours became longer due to the pandemic												
7. COVID-19 safety measures made my work harder												
8. During the pandemic I feel that the safety culture declined in my organisation versus before												
9. I want the workplace changes brought about by the pandemic to stay												
10. Adapting to new working arrangements introduced during the pandemic has given me a better work-life balance												
11. My workload increased due to COVID-19 12. My organisation provided sufficient supports to facilitate home working when appropriate during the pandemic 13. I am satisfied with my physical health at present												
14. I am satisfied with my mental health at present												
15. I feel protected from COVID-19 at work												
16. I believe that my safety is the priority of my organisation												
17. My organisation considered my personal circumstances (family, disabilities etc) when prioritising safety during the pandemic 18. My organisation provided sufficient supports for those who contracted COVID-19												
19. As the pandemic unfolded, my workplace responded quickly to the changing situation												

20. I am clear on who is responsible for health and safety in my organisation 21. I always know where to find information about COVID-19 in my workplace												
22. I have a clear understanding of my organisation's reasons for responding to the pandemic in the way that it did												
23. I feel comfortable seeking support from my organisation when or if I have concerns about working conditions related to the pandemic												
24. I was consulted in a timely fashion about my opinions on COVID-19 safety measures												
25. My workplace provides good communication in relation to COVID-19												
26. I have been fully briefed on responses to prior outbreaks in my workplace												
27. COVID-19 safety measures are communicated in a way that is easy to understand												
28. I feel that any feedback I provided on COVID-19 safety measures was valued by my organisation												
29. My health and safety personnel often provide useful talks on COVID-19												
30. COVID-19 safety measures were communicated in a timely fashion in my organisation												
31. I trust my organisation to keep me as safe as possible from COVID-19 in my workplace												

Appendix C - Survey User Guide

The use of this survey

'Workers and COVID-19 - Evaluation of Their Experience' is a tool for evaluating employees' workplace adaptation during COVID-19, to facilitate OSH management evaluate the effectiveness of the safety practices implemented in their organisations as a result of the pandemic. This survey can be adapted for future pandemics.

Definition of COVID-19 adaptation

To mitigate workplace transmission risk, employees had to rapidly adapt to relevant public health measures at various points during the pandemic, such as working from home (WFH) or in the case of essential workers to social distancing, the use of Personal Protective Equipment (PPE) and frequent testing alongside a range of bespoke / updated control measures specific to their organisation to ensure safety. Physical and / or psychological outcomes were often observed from those adaptations to managing COVID-19 risk among employees.

Survey development

'Workers and COVID-19 - Evaluation of Their Experience' was developed by a team of multidisciplinary researchers, including experts from Occupational Safety and Health (OSH), public health, psychology and medicine. The survey was based upon the findings from a range of surveys, focus groups and interviews conducted as part of a larger Science Foundation Ireland (SFI) funded research project focusing on Irish workplaces and workers response to the global pandemic.

The survey was designed to be as straightforward and uncomplicated as possible without the need for internal calculations to determine a score for each question / statement. The questions are phrased simply using plain English and the survey can be translated readily into a range of international languages.

The survey underwent a validation stage which eliminated extraneous questions and simplified the current 31 questions into their current format.

Evaluation dimensions

The survey consists of 31 items (questions / statements) across five dimensions:

Dimensions	Positively formulated items	Negatively formulated items
Dimension 1: support from the organisation	Q4, Q12, Q15 to Q31	Q8
Dimension 2: adaptation pressure	Q7	Q1, Q2, Q5
Dimension 3: work-life balance	Q3, Q9, Q10	/
Dimension 4: health condition	Q13, Q14	/
Dimension 5: workload/working hours	Q6, Q11	/

The questionnaire is organised into five dimensions with a variable number of questions / statements for each (some dimensions did not require as many questions / statements as others). These can be divided further into two groups – those asked in a positive way and those items asked in a reversed (negated) way.

Interpretation of Results

Upon completion of the survey, you should calculate the mean for each question alongside the total value and percentage for each point on the Likert scale.

The mathematical mean for the eleven-point Likert scale used (0-10) is 5.0.

For *positively formulated questions / statements*, results over 5.0 are considered positive with the closer to 10 being extremely positive and closer to five as just about positive (positive results indicate that the workforce are responsive to the working conditions imposed by the pandemic and are able to adapt without serious impact). Results below five are considered negative with the closer to zero being extremely negative and closer to five being somewhat negative (negative results indicate that the workforce are being impacted by the working conditions imposed by the pandemic and there needs to be a reconsidering of the workplace adaptations / processes).

For *negatively formulated questions / statements* (there are just four of these questions), results over 5.0 are considered negative with the closer to 10 being extremely negative and closer to five as somewhat negative positive (negative results indicate that the workforce are being impacted by the working conditions imposed by the pandemic and there needs to be a reconsidering of the workplace adaptations / processes). Results below five are considered positive with the closer to zero being extremely positive and closer to five being somewhat positive (positive results indicate that the workforce are responsive to the working conditions imposed by the pandemic and can adapt without serious impact).

Results with a mean of five indicate a neutral perspective. Neutral while neither positive nor negative can indicate a level of ambivalence and could be considered for improvement also.

Additional tips:

1. Always ensure that your survey is distributed in a way that it is voluntary for employees in your organisation to participate, and all respondents should be anonymous. The survey has been tested in GoogleForms™, SurveyMonkey™ and Qualtrics™ and can be set up for electronic distribution in each depending on the preferred software of the end user. If your organisation has an ethics committee you should seek permission from that committee before distributing the survey.
2. The survey results should be considered as a guide for dialogue with employees and improvement – not as a "grading" or "performance improvement" mechanism.
3. If new adaptations are made, this survey can be deployed again after a period to examine whether the intended improvements have been achieved.
4. In the event of a future pandemic the survey could be adapted for use at key points as the pandemic progresses to determine the longitudinal impact the pandemic could be having on your workers.