

Barriers to Social Support in the Mental Health and Wellbeing of Construction Workers in Emerging and Developing Economies: A Systematic Review

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Abstract

The purpose of this research is to examine the barriers to social support in mental health and wellbeing in emerging and developing economies' (EDEs) construction industry. Social support plays a pivotal role in the mental health and wellbeing (MHW) of the people including construction professionals and improves work efficiency, productivity and business performance. However, the barriers to providing it has received little attention. Using systematic literature review where Scopus and ScienceDirect were searched complemented with the citation approach, relevant literature was critically reviewed, analysed and discussed. The barriers to social support occur at four levels namely individual, community including family, organisational and national. While there is a lack of social support for MHW, lack of awareness of what MHW encompasses remains one of the key barriers to support from communities. This tends to be exacerbated by the lack of adequate MHW awareness programmes in EDEs. Social support in MHW is also hindered by the lack of adequate legislation and regulatory framework, which in some cases may be discriminatory. This discrimination against some workers is also reported at community and organisational levels. A key theme that emerged is the lack of enabling platform for social inclusion and relationship of which without these, there cannot be social support in MHW. The study contributes to the body of literature in MHW in EDEs, especially in relation to social support in MHW of construction workers which is underexamined. In improving MHW in EDEs there is a need for improved awareness at the grassroots level with a focus on re-engineering cultural, national and organisational beliefs toward it. The revision of the national policy and legislation will support mental and wellbeing in many EDEs.

Keywords: social inclusion, social exclusion, social network, psychological wellbeing, psychosocial.

Introduction

Workers drive the economy of countries and organisations, especially in the construction (building and civil engineering) industry (Maqsoom et al. 2018). The industry is fundamental to meeting the Sustainable Development Goal 9 — Build resilient infrastructure, promote inclusive, sustainable industrialisation and foster innovation. However, psychosocial stressors (stressors from the psychological and social aspect of work) including social relationships, job content and the high load

from it and, methodology of work organisation, require a lot from workers socially and mentally and impact on productivity (Maqsoom et al. 2018). This results in suicide and mental health illness such as depression and anxiety. Studies such as King et al. (2019) report a higher risk of suicide in the construction industry when compared with other industries in Australia. This is echoed by the Chartered Institute of Building— the number of construction that contemplated suicide in 2019 is 27 per cent (Global Construction Review 2020). Mental health also has economic implications. For instance, in 2016/17, £34.9 billion was lost to the poor mental health of workers in the UK because of presenteeism, sickness absence and staff overturn (Centre for Mental Health 2017).

While studies (for example Alrasheed 2015; Alsubaie et al. 2019; Pidd et a. 2017) show that social support improves and sustains the mental health and wellbeing (MHW) of people including construction workers, Love et al. (2011) found a co-relationship between social support for construction workers and, their work efficiency and improved productivity. Similarly, Yuan, et al. (2018) show that strong social support has positive influence on work efficiency and productivity. Additionally, there is a consensus that social support theory is one of the theories that explain the psychosocial stressors in relation to construction workers in that 'social relationship affected the health and performance of a person' (Maqsoom et al. 2018: 1882).

However, construction workers (including those in EDEs) lack social support for their MHW (Alrasheed 2015; Alsubaie et al. 2019), migrant workers in EDEs report worse cases (Alrasheed 2015). Social support exists in a social network at societal level (Government on construction site), family and/or friends' level (social relationship with others) and organisational (between construction companies and workers) (Alrasheed 2015; Yuan, et al. 2018; Maqsoom et al. 2018). Despite the imperativeness of social support for the MHW of construction workers and implications for work efficiency and improved productivity, there is limited understanding in some areas in this regard. For example, the reasons for the limited and/or non-existent social support for the MHW of construction workers are poorly understood and has received very little (if not no) attention in research in EDEs. As a result, focusing on EDEs, the study examines social support in mental health and wellbeing toward unearthing the barriers to provision to construction workers in regard to their MHW. Gaps in knowledge in the area are also highlighted, showing possible empirical enquires.

Drawing on House (1981), Heaney and Israel (2008: 190) define social support as '...the functional content of relationships that can be categorised into four broad types of supportive behaviours or acts': Emotional support; Instrumental support, Informational support and Appraisal support. The intention of offeror or sending of social support is to help the recipient; hence an intentional positive interaction between them (Heaney and Israel 2008).

Context

Social support and Mental health and well-being

Heaney and Israel (2008) and Cutrona and Suhr (1992) observe that social support is a component of social network with four types of support in it: emotional support where nurturing [e.g. love, empathy, trust and care] are provided; informational support occurs when message (including knowledge and fact) in terms of advice, suggestion or other information for addressing a problem is provided [e.g. advice to how to carryout work where recipient has limited skills which is reduced productivity hence

causing stress]; instrumental support is where aid and services which directly assist the person in need is provided but must be tangible [e.g. financial assistance]; appraisal support relates to constructive feedback and affirmation — the information that the person in need will use for self-evaluation [e.g. pointing out strength that the recipient may have overlooked which will help them]. However, all can come from one source or relationship (Cutrona and Suhr 1992). By implication, the above submits that in the absence of functional relationship between the parties, a platform to stimulate and instigate the relationship, trust, communication and, a good understanding of the recipient, there will be no effective social support.

There is evidence that low social support from the community or workplaces has negative implications for the health and wellbeing of people but, strong social support has positive implications for the MHW of people. For example, Pidd et al. (2017) found that workplace social support moderates the effect of workplace bullying and job stress on the psychological wellbeing of young construction apprentices in Australia. By implication, this indicates that with adequate support in the workplace, the workers are mostly likely to be better equipped to deal the workplace bullying and job stress that have negative implications for their psychological wellbeing (Pidd et al. 2017). The same is applicable in many EDEs. For example, in the Saudi Arabian construction industry, Alrasheed (2015) observe that while there is limited social support from the community, workplace and the government for construction workers, migrant workers from EDE experience humiliating hostility from the community, government policies and workplaces.

Methodology

The research question of the study was addressed through systematic review of literature. Following discussions between the authors, keywords for the search were agreed. Table 1 presents a flow diagram of the process followed by the papers used in the review. The search was conducted on 06 July 2020 and 11 July 2020 using two databases, Scopus and Science Direct.

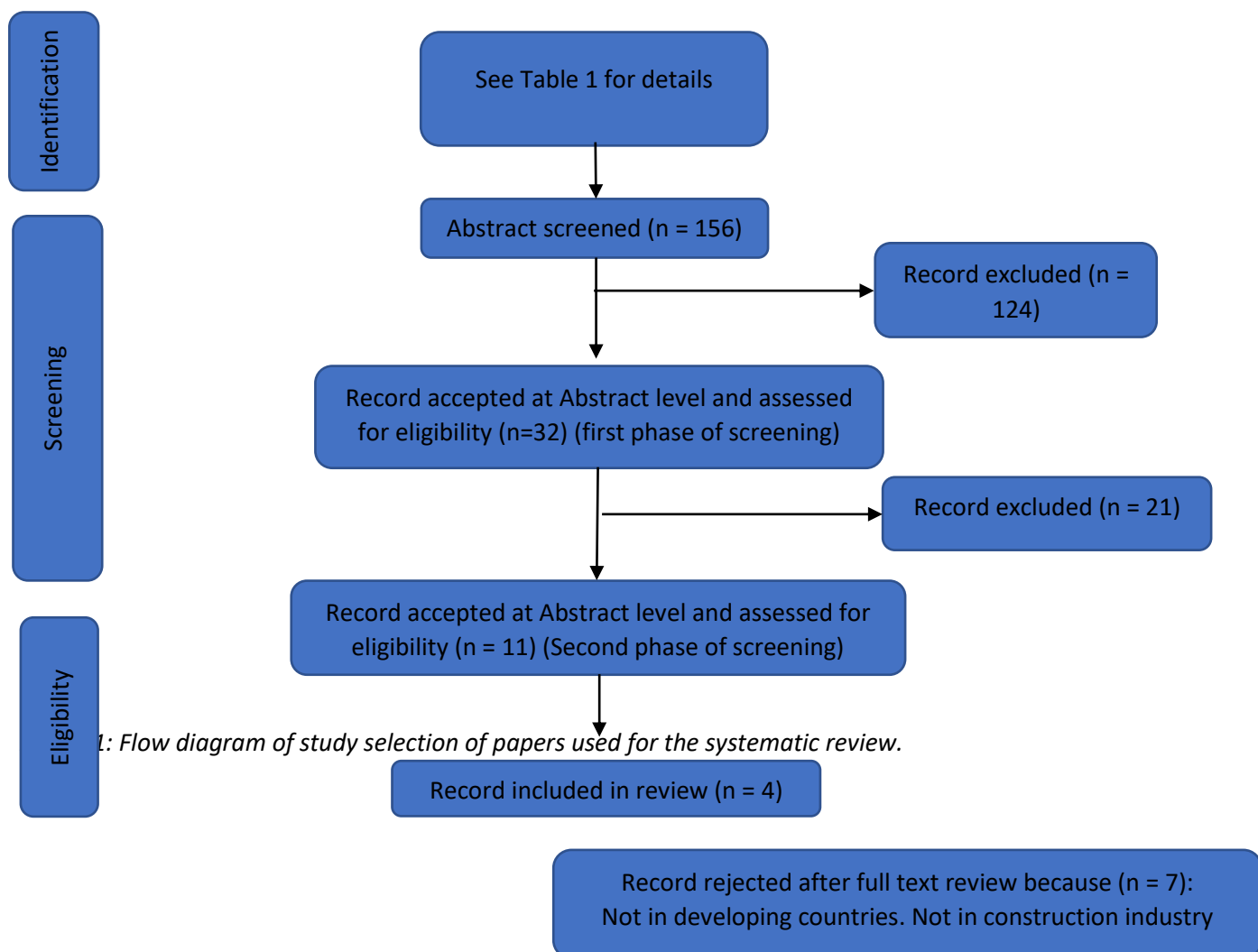


Figure 1: Flow diagram of study selection of papers used for the systematic review.

Searching two databases from 2001 till 2020 and 2011 till 2020 means that relevant publications in Web of science, Google Scholar and PubMed and outside this range of year will be omitted. While two databases are still enough to offer adequate insight into the subject, the citation approach aimed at complementing this. In the citation approach, the references of materials (e.g. books and journal articles) are searched towards finding relevant materials that can be used. Author such as Umeokafor (2018) have adopted this approach to complete the systematic literature search.

Table 1: Identification section for Figure 1

Search approach/ Database; (Search date)	Keywords; location of search; and n: no before limits where applicable)	Limits: PUBYEAR; DOCTYPE and Subject area; Country; n= no after limits
Science Direct (06 July 2020)	'Mental AND health' and 'Mental AND Wellbeing' and 'Construction AND Industry' in TITLE-ABS-KEY (n- 1123)	2011 to 2020, Top cited journals, Safety Science, Social science and medicine'. (n= 62)
Citation approach	(n=6)	NA
Scopus (06 July 2020)	'Mental AND health' and 'Mental AND Wellbeing' and 'Construction AND Industry' on TITLE-ABS-KEY.	2001 till 2020; 'Business, management and accounting', 'Engineering', social science' and 'Environmental sciences'. (n= 14)
Scopus (11 July 2020)	'Social AND support' OR 'social AND inclusion' AND 'mental' AND 'health' AND 'construction' AND industry' AND 'developing' AND 'countries' OR 'mental' AND 'wellbeing' in TITLE-ABS-KEY	2000 to 2020; conference papers and journal articles. (n=1)
Scopus (11 July 2020)	'Social' AND 'support' OR 'social' AND 'inclusion' AND 'mental' AND 'health' AND 'construction' AND 'industry' in TITLE-ABS-KEY	2000 till 2020; 'Business, management and accounting', 'Engineering', social science' and 'Arts'. (n=8)
Scopus (11 July 2020)	'Social AND support' OR 'social AND inclusion' AND 'mental' AND 'health' AND 'construction AND 'industry' OR 'mental' AND 'wellbeing' in TITLE-ABS-KEY (n=2839)	2000 to 2020; conference papers and journal articles; 'Business, management and accounting', 'Engineering', social science' and 'Environmental sciences'; for countries see * (n=65)

*Hong Kong, India, South Africa, Taiwan, Mexico, Pakistan, Brazil, Malaysia, Ghana, Uganda, Nigeria, Ethiopia, Saudi Arabia, Colombia, Kenya, Sri Lanka, Philippines, Viet Nam, Zimbabwe, Bangladesh, Nepal, Cameroon, Kuwait, Malawi, Qatar, United Arab Emirates, Argentina, Georgia, Jamaica, Palestine, Rwanda, Chad, Cuba, Guatemala, Indonesia, Iraq, Lesotho, Namibia, Paraguay, Peru, Puerto Rico, Senegal

In all, four studies were included in the reviews (Figure 1). It is tempting to argue that using four studies for the review is too small hence the findings are limited. Such arguments should be with caution as there are many systematic reviews that have been conducted with no studies meeting their inclusion criteria hence empty reviews (Yaffe et al. 2012). Yaffe et al. (2012) offer a treatise on this including demonstrating that the number of studies used in systemic review does not make the study limited and the empty reviews is a culture and acceptable in academia. However, they acknowledge the risk

of bias and the risk associated for users including decision makers. While Yaffe et al. (2012) focuses on 'Cochrane Library is the largest and perhaps best recognized global collection of health care evidence, currently hosting more than 4,500 systematic reviews in its Cochrane Database of Systematic Reviews (CDSR)' the same arguments can be made for the current study and the built environment research.

The argument should not be misconstrued as soliciting for empty reviews or review of small sample, rather that the number of studies that meet the criteria for inclusion should not hinder a systematic review. However, the methodology including the search criteria and keywords should be detailed. The review of the literature was conducted thematically, and the summary of the findings presented in Table 2. While reading the materials used for the review, implicit and explicit meanings were sought. Questions asked were not limited to: What is happening here? What is missing here? What implications do these have for the provision of social support in terms of the MHW of construction workers? What are the barriers to social support in MHW? The analyst has little preconceived ideas of possible codes; hence started with this.

Findings, Analysis and Discussion

Profile of literature used in review

Although limited to two databases, Table 2 shows the extensive search and outputs. However, the relevant studies are limited suggesting the gap in knowledge in the area. Table 2 also submits the areas covered by the literature despite a broad search of developing countries and limiting another search to 42 EDEs as shown in Table 1. Umeokafor (2018) shows that a lot of academic in EDEs, especially Africa, publish in conferences and journals which may not be indexed in Scopus and may not even be peer-reviewed. The implication is that these studies will not be captured in a systematic review as the current study. Understandably, academics in some developing countries face challenges and barriers such as low acceptance rate in high ranking journals and the long peer-review and publication period (Adjei and Owusu-Ansah, 2016).

Table 2: Studies used in the review

Author details	Title	Scope and type
Alrasheed (2015)	A socio-ecological framework for improving the psychological health of foreign workers in developing countries: the case of Saudi construction industry	Saudi Arabia, PhD Thesis
Maqsoom et al. (2018)	Intrinsic psychosocial stressors and construction worker productivity: impact of employee age and industry experience	Pakistan, Journal article
Yuan, et al. (2018)	Evaluating the impacts of health, social network and capital on craft efficiency and productivity: A case study of construction workers in China	China, Journal article
Peng and Chan (2020)	Adjusting work conditions to meet the declined health and functional capacity	Hong Kong, Journal article

Discrimination

While discrimination against mentally ill people is extensively reported in literature (for example Hall et al. 2019), it is revealing that this is also a barrier to social support for the MHW of construction workers. For example, Alrasheed (2015) found legislative-support discrimination against migrant workers from EDEs in Saudi Arabia and discrimination by locals and unions. In particular, migrant workers in dire need of social support for the MHW do not receive this because government laws restrict local community organisations from offering services to foreign workers irrespective of their condition (Alrasheed 2015). Importantly, migrant workers including experts make up 76 per cent of employed people and 80 per cent of the private sector in Saudi as at mid-2018 (De Bel-Air 2018).

While Saudi Arabia is infamous for discrimination (Jessup n.d), the extent of discrimination in other EDEs may need to be examined but there is evidence of gender discrimination in OSH legislation in some EDEs (Ncube and Kanda 2018). However, the level of discrimination in some EDEs may be lower than reported in Saudi. The discriminatory legislation in EDEs may be attributed to their outdated nature and the little attention that OSH receives. Countries such as South Africa have anti-discriminatory legislation.

On a different point, the lack of concern from the trade unions who are supposed to protect the interest of the workers is worrying (Table 3). The points so far show the need to understand, through empirical examination, the extent to which the various sources and levels of discrimination of workers impact on social support with regards to MHW.

Table 3: Summary of the findings

Themes	Subthemes	Factors and supporting evidence and sources
Discrimination	Inequality	Little concern from unions for migrant workers as against non-migrant (Alrasheed 2015). Discrimination against migrant workers by locals (Alrasheed 2015).
	Discriminatory policies and legislation	Government laws prevent local community support organisation from offering support to migrant workers in dire need (Alrasheed 2015)
Policy and Regulation		Unsupportive Government laws (Alrasheed 2015).
		Lack of relevant legislation that support such (Alrasheed 2015).
	Legislation and regulation	Lack of adequate regulation of existing legislation (Alrasheed 2015; Yuan, et al. 2018) Lack of adequate governmental support (Yuan, et al. 2018)

No Platform for socialisation or relationship	Inability of co-workers to support	Inability of co-workers (especially the older ones) to support the less experienced ones through advance and guidance because of limited experience (Maqsoom et al. 2018). Lack of commitment to organisation by senior staff (Maqsoom et al. 2018).
	Lack of cohesion and interaction	Lack of cohesion among co-workers in work group because there is a lack of work-related problem discussions casually (Maqsoom et al. 2018). Lack of interaction between workers and supervisor (Peng and Chan 2020)
	Lack of communication	Lack sustained socialisation because limited interaction in project team or organisation (Yuan, et al. 2018) Lack of communication (Yuan at al. 2018; Peng and Chan 2020)
	No enabling environment	No enabling environment for workers to form social support groups in organisations and nationally (Alrasheed 2015). Limited support from organisation or employers for social support programmes of activities (Yuan, et al. 2018). No designated support source (Peng and Chan 2020). Lack of confidence in source of social support (Peng and Chan 2020). Lack trust may not provide the environment for interaction (Peng and Chan 2020)
	Stakeholder factors	Ignorance of locals and organisations. Disregard for migrant workers by locals because of ignorance and poor understanding; Disregard from organisations (Alrasheed 2015) Low priority for unions and government Little concern from unions for migrant workers as against non-migrant (Alrasheed 2015). Lack of interest from the government (Alrasheed 2015; Yuan, et al. 2018)

Policy and Regulation

Studies such as Umeokafor et al. (2014) and Ncube and Kanda (2018) demonstrate that EDEs lack adequate occupational safety, health and wellbeing legislation and regulatory environment. While they are fragmented, overlook some pertinent areas and are outdated, the expectations of International Labour Organisation and World Health Organisation expects are yet to be codified at national level in some the occupational safety and health (OSH) legislation (Ncube and Kanda 2018). As a result, the related findings in the current study as Table 3 shows is expected but disappointing. For example, Yuan, et al. (2018) observe that lack of adequate regulation that should drive social support in MHW through more enforcement (e.g. health checks) and adequate legislation. Similarly,

lack of legislation and regulatory framework that address MHW is reported Saudi Arabia (Alrasheed 2015). The discriminatory feature of the extant or associated legislation are already reported (Table 3) and discussed in the preceding paragraph in detail including that similar discriminatory legislation are in some other EDEs (Ncube and Kanda 2018). Granted the evident role of policymakers and governments in ensuring adequate OSH regulatory framework and legislation, there is the need for companies to pay more attention to supporting the workers in various ways such as health promotion and training and ensure that workers have adequate working hours (Yuan, et al. 2018).

No Platform for socialisation or relationship

The findings of Maqsoom et al. (2018) suggest that older and/or experienced workers are only able to help when they have the ability. Typically, they found that younger or less experienced workers face challenges in work because of lack of skills and experience hence the older and/or more experienced ones offer advice or guidance to them where they can. However, the older workers' expectations are limited and realistic such as not expecting a reduction in workload from co-workers. If these younger workers do not receive the relevant support at work, their work efficiency is most likely to reduce which makes them feel stressed (Maqsoom et al. 2018).

This highlights a possible shift in employer responsibilities to older workers at best and exploitation of the older workers by the employers at worst. It is naïve to argue that the workload of the older workers will not increase which is already reported as high; they would appreciate a similar support as the younger ones. Given this obligation that the older workers have for the younger ones, it is likely that when they are unable to help, it may affect their mental health. It will be good to understand whether the support the older workers offer is because of working culture or morality.

Maqsoom et al. (2018) found that lack of young (inexperienced) workers 'feeling valued, cared for and supported by their supervisor or co-worker' is a psychosocial stressor. Hence, the question is why would workers not get this from their supervisor or co-worker? Many factors may account for this which may make workers (supervisors included) less committed to work. For example, studies such as De Witte and Naswall (2003) evidence a negative association between job insecurity and workers' commitment to organisation. In other words, if employers feel insecure in their jobs, they are likely to be less committed to the organisation. Similarly, conflict and/or ambiguity in roles may lead to role stress for supervisors resulting in some function being ignored or poorly performed (Maqsoom et al., 2018). The same is applicable to work related fatigue for the supervisor, due to excessive workload (Useche et al., 2017) which was established to result in reduced job performance with implications for the mental health and wellbeing of the workers including supervisors (De Vries et al. 2003). There is the need to test whether the level of worker satisfaction with organisation determines whether they will support other co-workers. It will also be insightful to know if worker satisfaction determines their level of satisfaction with social support and at which level.

Lack of cohesion or interaction between the workers and employers or the person acting on behalf of the employers is also an important barrier to social support in MHW. Studies indicate that there needs to be a close relationship between the parties of which without adequate cohesion and interaction, this will not occur as the enabling environment for social support is not created. For example,

Maqsoom et al. (2018) found that lack of cohesion among co-workers in work group occurs because there is a lack of work-related problem discussions casually. Similarly, in Yuan et al. (2018), it was observed that lack of sustained socialisation because of limited interaction in project team or organisation does not enable the relevant environment for social support in MHW.

This relationship cannot exist if there is lack of trust and confidence. The implications of the findings of Peng and Chan (2020) include that some barriers to social support to MHW in construction include the level of workers' confidence in the sources of support, the level of reliability of the information thereof, the proximity in the source of support and the willingness of the supporter (the supervisor) to help when needed. If there is strong support from organisation or employers for social support programmes of activities, the right environment will be created (Yuan, et al. 2018). This source of support and information must also be clear and accessible to the workers (Peng and Chan 2020) to encourage the workers and make them have a sense of belonging. However, it is important to ensure that any social support is worker-focused both in terms of design and implementation. The points so far also highlight the role of relationship between the workers and supervisor and trust hence no environment for interaction. Possible propositions include that the higher the level of trust between supervisor and worker, the more likely the collaboration or relationship in social support will improve the MHW of workers.

Stakeholder factors

The findings of the review show that social support is at four levels, individual, community (including family), organisational and national which is consistent with the points made elsewhere in this paper. It suggests that roles of multiple stakeholders at different levels exist, but there is little evidence to suspect any complexity in the interactions where applicable. Most importantly, the findings point to the disappointing counterproductive activities of those that should be protecting the MHW of workers; rather they have failed the workers. Specifically, in the study of Alrasheed (2015), there is evidence of disregard for migrant workers by locals because of ignorance and poor understanding of the nature of work they do and the imperativeness of social support to them. This is also seen in companies as the workers experience inhumane treatment e.g. using abusive words (Alrasheed 2015). However, while it can be argued that the local and organisations exist in a system in Saudi that had failed the workers hence nothing is expected, it is important to point that such condition may not be applicable in the other parts of EDEs.

This also shows lack of interest which also was reported against other stakeholders, the trade unions and government (Table 3). Other studies also echo the limited attention on OSH including MHW from the government in EDEs (Umeokafor et al. 2014). This limited attention (if from government agencies) mainly focuses on occupational health, preventing attention on barriers to social support outside the work environment. However, some EDEs have social protection programmes that focus on improving the mental health of people. For example, Angeles et al. (2019) found that unconditional cash grant can improve the MHW of youths in Malawi. This scheme is part of a larger social protection scheme in the Sub-Saharan Africa (Angeles et al. 2019). Consequently, it cannot be argued that this lack of support is widespread in EDEs; neither is it expected to be worse in poorer EDEs as Saudi Arabia and Malawi have opposite development status. The latter is the world's least developed countries while Saudi Arabia is the largest economy in the Middle East. Also, China is a larger economy but poor

governmental interest in the MHW of workers is also reported. This shows the need for country-specific studies to provide more accurate responses. A possible explanation is that the MHW of people is a top priority to the Malawian government, but the reverse may be the case for Saudi Arabia.

Conclusions and Recommendations

In meeting the United Nations Sustainable Development Goals including Goal 9, the mental health and wellbeing of people including construction workers need more attention. Aimed at identifying the barriers to social support in mental health and wellbeing in developing economies' construction industry, the study found that workers take-up the responsibilities to support co-workers when employers fail to do it. Social support is hindered by inadequate legislation and regulatory framework which can even be discriminatory against some workers e.g. migrant workers. The review shows that while some governments are unsupportive in improving workers MHW through social support, some are in the driving seat. However, the study indicates that the level of priority of MHW determines the level of support and whether they will support MHW with social support program. Further, the study emphasises the role that enabling environment plays in driving social support hence a barrier if unavailable. Typically, lack of trust and communication between workers and supervisors result in lack of cohesion between them hence relationships, a prerequisite for social support in MHW, will not be created. The need for organisations to support workers to form social groups in organisations and for the government to support this at national level is also a factor. There are also stakeholder related barriers such as ignorance from locals and organisations and the neglect from trade unions who are supposed to promote the protection of workers.

Given the positive implications of MHW for improved business performance and economies of countries, businesses and government should strive to educate themselves of these benefits and exploit them. There is the need for subtle strategies to get governments in EDEs more involved in MHW of worker, a recommendation for researchers. While a case has been made in the study for the 'limited' number of papers used in the review, it also shows the little attention that the area has received calling for more research. Hence, country-specific studies are recommended where all the factors in Table 3 will be surveyed to support or refute them. Further studies can also test the propositions and hypotheses noted in many places in the study. For example, working cultures in the construction industry does not influence the social support that older workers offer the younger ones. Also, the higher the level of trust between supervisor and worker, the more likely the collaboration or relationship in social support that will improve the MHW of workers.

References

- Adjei, K.O.K., and Owusu-Ansah, C.M., 2016. "Publishing preferences among academic researchers: implications for academic quality and innovation". *Library Philosophy and Practice [e-journal]*, 1349, pp.1–15.
- Angeles, G., de Hoop, J., Handa, S., Kilburn, K., Milazzo, A., Peterman, A., Abdoulayi, S., Barrington, C., Brugh, K., Molotsky, A., Otchere, F., Zietz, S., Mvula, P., Tsoka, M., Palermo, T., 2019. Malawi Social Cash Transfer Evaluation Team. Government of Malawi's unconditional cash transfer improves youth mental health. *Social Science and Medicine*, 225, pp.108-119.
- Alsubaie, M.M., Stain, H.J., Webster, L.A.D., Wadman, R., 2019. The role of sources of social support on depression and quality of life for university students. *International Journal of Adolescence and Youth*, 24 (4), 484-496. DOI: 10.1080/02673843.2019.1568887
- Alrasheed, H., 2015. A socio-ecological framework for improving the psychological health of foreign workers in developing countries: the case of Saudi construction industry. PhD Thesis, University of New South Wales.

- Centre for Mental Health, 2017. Mental health and work: The business cost Ten years on. [pdf]. Available at: [at:atwww.centreformentalhealth.org.uk/sites/default/files/201809/CentreforMentalHealth_Mental_health_problems_in_the_workplace.pdf](http://www.centreformentalhealth.org.uk/sites/default/files/201809/CentreforMentalHealth_Mental_health_problems_in_the_workplace.pdf) [Accessed 28 June 2020].
- Cutrona, C.E. and Suhr, J.A. 1992. Controllability of stressful events and satisfaction with spouse support behaviours. *Communication Research*. 1992, (19) pp.154–174.
- De Bel-Air, F., 2018. Demography, Migration and Labour Market in Saudi Arabia. [pdf] Available at http://gulfmigration.org/media/pubs/exno/GLMM_EN_2018_05.pdf [Accessed 18 July 2020].
- De Vries, J., Michielsen, H.J., and Van Heck, G.L., 2003. Assessment of fatigue among working people: a comparison of six questionnaires. *Occupational and Environmental Medicine*, 60(1), pp.10–15.
- De Witte, H., and Naswall, K., 2003. Objective vs subjective job insecurity: Consequences of temporary work for job satisfaction and organizational commitment in four European countries. *Economic and Industrial Democracy*, 24(2), pp.149–188.
- Global Construction Review, 2020. “‘Silent crisis’: Quarter of construction professionals contemplated suicide last year, study finds”. [online] Available at: <https://www.globalconstructionreview.com/trends/silent-crisis-quarter-construction-professionals-c/> [Accessed 17 July 2020].
- Hall, T., Kakuma, R., Palmer, L., Minas, H., Matins, J., Kermode, M., 2019. Social inclusion and exclusion of people with mental illness in Timor-Leste: a qualitative investigation with multiple stakeholders. *BMC Public Health*, 19:702 .
- Heaney and Israel, 2008. Chapter 9: Social network and social support. *iHealth Behavior and Health Education: Theory, Research and Practice*. In: K. Glanz, B.K. Rimer, K. Viswanath, eds. San Francisco, CA: Jossey-Bass. 590 pp.4th ed.
- Jessup, S., n.d. Migrant workers in Saudi Arabia. *Human Rights and Human Welfare*. [pdf] Available at: <https://www.du.edu/korbel/hrhw/researchdigest/mena/SaudiArabia.pdf> [Accessed 21 July 2020].
- Love, P.E.D., Davis, P.R., Chevis, R., Edwards, D.J., 2011. Risk/reward compensation model for civil engineering infrastructure alliance projects. *Journal of Construction. Engineering and Management*. 137, pp.127–136.
- Maqsoom, A., Mughees, A., Safdar, U., Afsar, B., and Ali Zeeshan, B., 2018. Intrinsic psychosocial stressors and construction worker productivity: impact of employee age and industry experience. *Economic Research-Ekonomika Istrazivanja* 2018, 31 (1), pp.1880–1902.
- Ncube, F., and Kanda, A., 2018. Current Status and the Future of Occupational Safety and Health Legislation in Low- and Middle-Income Countries. *Safety and Health at Work*, 365- 371.
- Peng, L., and Chan H.S., 2020. Adjusting work conditions to meet the declined health and functional capacity of older construction workers in Hong Kong. *Safety Science*, 127 (2020) 104711.
- Pidd, K., Duraisingam, V., Roche, A., and Trifonoff, A., 2017. Young construction workers: substance use, mental health, and workplace psychosocial factors, *Advances in Dual Diagnosis*, 10(4), pp.155-168.
- Umeokafor, N.I., 2018. Construction health and safety research in Nigeria: Towards a sustainable future. In T.A. Saurin, D.B. Costa, M. Behm, and F. Emuze., eds. *Proceedings of Joint CIBW99 and TG59 Conference*, 1–3 August 2018 (pp. 213–221). Salvador.
- Umeokafor, N., Isaac, D., Jones, K., and Umeadi, B., 2014. Enforcement of occupational safety and health regulations in Nigeria: A exploration. *European Scientific Journal*, 3, pp.93-104.
- Useche, S.A, Ortiz, V.G, and Cendales, B.E., 2017. Stress-related psychosocial factors at work, fatigue, and risky driving behaviour in bus rapid transport (BRT) drivers. *Accident Analysis & Prevention*, 104, pp.106–114.
- Yaffe, J., Montgomery, P., Hopewell, S., Shepard, L., 2012. Empty Reviews: A Description and Consideration of Cochrane Systematic Reviews with No Included Studies. *PLoS ONE* 7(5), e36626.

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Yuan, J., Yi, W., Miao, M., Zhang, L., 2018. Evaluating the impacts of health, social network and capital on craft efficiency and productivity: A case study of construction workers in China. *International Journal of Environmental Research and Public Health*, 15 (2), p.345.