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**Review Article**

# Truck Drivers On-Road Mental Health Awareness: A Conceptual Framework of Stress and Fatigue

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**Abstract:** On-road truckers face unique occupational stressors—long hours, irregular schedules, isolation, serious accident risk, and job insecurity—that can cumulatively increase vulnerability to depressive symptoms. While chronic stress is a well-documented risk factor for depression, the specific pathway through which occupational stress translates into depressive symptoms in this population remains underexplored. The purpose of a paper on the stress–depression pathway in on-road trucking is to explore the relationship between stress and depression in truck drivers, particularly in the context of their work environment. The paper aims to provide a conceptual model that explains how stressors related to trucking can lead to depression, and how understanding this relationship can inform interventions and support for truck drivers. The analysis of the conceptual model reveals that the influence of psychosocial stressors on fatigue and depressive symptoms in long-distance truck drivers (LDTD) contributes to depressive symptoms due to the body's inability to handle the stress effectively, leading to a cycle of negative mental health outcomes. In conclusion, the paper seeks to contribute to the body of knowledge in the field by offering insights into the psychological impact of trucking and by suggesting potential strategies to improve mental health among truck drivers. The paper concludes that understanding these interconnections is essential for developing effective strategies to support the mental health of long-distance truck drivers and reduce the prevalence of fatigue and depressive symptoms in this occupational group.

**Keywords:** Truck Drivers, Occupation, Stress, Depression, Mental Health, Public Health.



## INTRODUCTION

Long-distance truck drivers are an essential part of the transportation industry and contribute immensely to the country's economy (Lalla-Edward *et al*., 2018; Gomez *et al*., 2013; Lalla-Edward *et al*., 2019). They play an important role in transporting commodities across different parts of the country (Prince & Desmond, 2022). According to researchers and safety analysts, truck driving is ranked as one of the most dangerous occupations in the world (Belzer *et al*., 2018)

The number of long-distance truck drivers involved in accidents and property damage crashes has risen in recent years (Chidoka, 2013; Prince & Desmond, 2022). Health conditions of drivers, including hypertensive encephalopathy, have been linked with many auto-crashes (Akanbi, *et al*., 2009). Research substantiates that truck drivers are at increased risk for numerous preventable diseases, such as hypertension, ulcers, myocardial infarction, musculoskeletal disorders, and cancers of the lung, prostate, and bladder when compared to people in other professions (Newnam, Mamo & Tulu, 2014)

Long-distance truck driving is considered one of the most dangerous occupations, giving rise to unfavourable health outcomes (Boyce, 2016; Korhan *et al*., 2018). Long-distance truck drivers work in an environment that provides them with restricted chances to have a healthy lifestyle (Ng *et al*., 2015). The

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conditions in which long-distance truck drivers work often create a favourable environment for the development of Non-Communicable Diseases (NCDs) such as hypertension and diabetes. These include sedentary lifestyle, poor diets, stress, poor access to health care, and non-adherence to treatment regimens such as non-adherence to anti-hypertensive treatment (Kamgne *et al*., 2022; Rike *et al*., 2022). The determinants of hypertension and other related co-morbidities among long-distance drivers in Nigeria are not fully understood and well-documented.

Despite the occupational nature of long-distance truck drivers predisposing them to risk factors of hypertension and other cardiovascular diseases (Lalla-Edward *et al*., 2019), data are scarce on the prevalence of hypertension and its association with developing cardiovascular diseases and other co-morbidities among truckers in Nigeria. It is imperative to improve work related to the well-being of truck drivers in general, as reiterated by other researchers (Lalla-Edward *et al*., 2018; Lalla-Edward *et al*., 2019).

**Stress and Fatigue in Truck Drivers**

Chida and Steptoe (1979) and Turner *et al*., (2020) reported that a wide body of literature indicates that exaggerated cardiovascular reactivity to psychological stress is both associated with and predictive of future hypertension. Notwithstanding, Barnell *et al*., (1977) added atherosclerosis, and Carroll *et al*., (2012) also added cardiovascular disease mortality. Furthermore, Kamba *et al*., (2016) contribute to the discussions that this may be due to high cortisol levels (a hormone secreted during stress) in the blood, resulting in increased circulating cholesterol, triglycerides, and glucose. Philips *et al*., (2013) reported that this is known as the reactivity hypothesis, and it was originally considered that reduced, or attenuated, cardiovascular reactivity to psychological stress was, by inference, beneficial to health. However, Philips *et al*., (2010, 2011) indicated that more recently, an attenuated response to psychological stress has also shown correlations to depression, and Rooii *et al*., (2009) added anxiety, and Carroll *et al*., (2008) added obesity. Importantly, Guhet *et al*., (2009); Dhar and Barton (2016); Roest *et al*., (2010), reported on their findings of these correlations that are also associated with cardiovascular disease risk. However, Phillips *et al*., (2013) stated that any extreme cardiovascular responses to psychological stress, whether attenuated or exaggerated, are associated with poor health outcomes, and Turner *et al*., (2020) suggest future disease risk. In prior research, Huang *et al*., (2013) have demonstrated that cardiovascular reactivity to stress can be attenuated through physical activity (both aerobic and resistance training). Given the known high levels of stress associated with truck driving, there is a need to understand factors associated with cardiovascular reactivity to stress and the impact of a multicomponent health intervention on cardiovascular reactivity to stress.

**Figure 1: Example of Truck Drivers' Fatigue Images**

On-road truck driver stress and fatigue images often depict on-road truck drivers, rubbing their faces or resting their heads on the steering wheel while driving.

However, Phillips *et al*., (2013) stated that any extreme cardiovascular responses to psychological stress, whether attenuated or exaggerated, are associated with poor health outcomes, and Turner *et al*., (2020) suggest future disease risk. In prior research, Huang *et al*., (2013) have demonstrated that cardiovascular reactivity to stress can be attenuated through physical activity (both aerobic and resistance training). Given the known high levels of stress associated with truck driving, there is a need to understand factors associated with cardiovascular reactivity to stress and the impact of a multicomponent health intervention on cardiovascular reactivity to stress.

**Purpose of the Paper:**

The purpose of a paper on the stress–depression pathway in on-road trucking is to explore the relationship between stress and depression in truck drivers, particularly in the context of their work environment. The paper aims to provide a conceptual model that explains how stressors related to trucking can lead to depression, and how understanding this relationship can inform interventions and support for truck drivers.

**Analysis of Conceptual Pathway from Stress to Depressive Symptoms of On-Road Truck Drivers and Discussions**

Based on the relevant literature review, a theoretical model of stress to depressive symptoms among on-road truck drivers, consisting of various factors, is derived as shown in Figure 2 below.

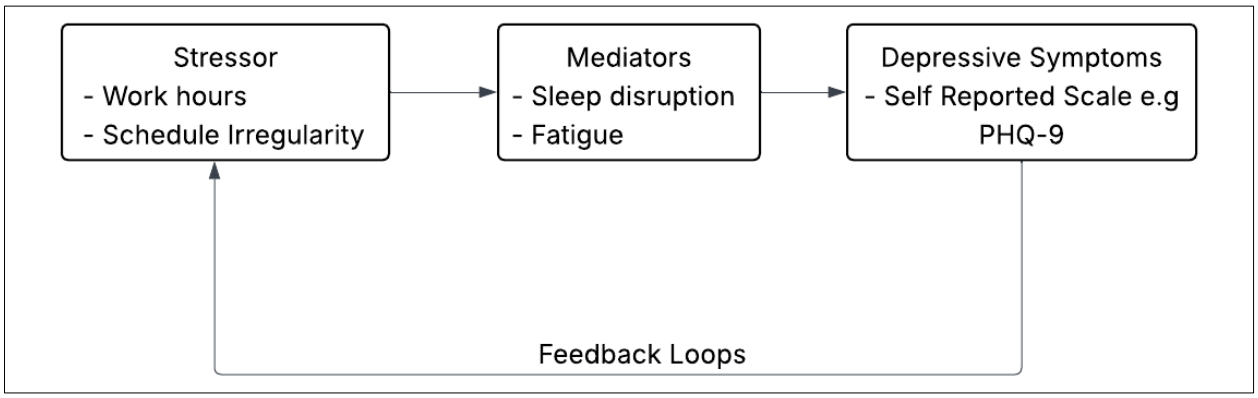


**Figure 2: Conceptual Pathway from Stress to Depressive Symptoms of On-Road Truck Drivers (Modified Figure 2.3, p46 Oluwoye, 1997)**

On-road truckers face unique occupational stressors—long hours, irregular schedules, isolation, serious accident risk, and job insecurity—that can cumulatively increase vulnerability to depressive symptoms. While chronic stress is a well-documented risk factor for depression, the specific pathway through which occupational stress translates into depressive symptoms in this population remains underexplored.

As one can see from Figure 1, the influence of psychosocial stressors on fatigue and depressive symptoms in long-distance truck drivers (LDTD) can be interpreted as follows:

- *Psychosocial stressors* of LDTD at work, such as long working hours, shift work, and lack of support, can lead to fatigue by reducing the driver's capacity to cope with physical or mental stressors. This fatigue can then contribute to depressive symptoms due to the body's inability to handle the stress effectively, leading to a cycle of negative mental health outcomes.
- *Fatigue* is a state of physical, mental, and/or emotional exhaustion that can impair an LDTD driver's ability to perform work safely and effectively. It can be influenced by various factors beyond work tasks, including personal lifestyle choices and work environment.
- *Depressive symptoms* can exacerbate the effects of fatigue, creating a feedback loop that can worsen the LDTD driver's mental health and increase the risk of burnout and other related issues.

It should be noted that addressing these psychosocial stressors is crucial for improving the well-being of long-distance truck drivers. Workplace interventions such as workload reductions, schedule changes, and improved communication can help mitigate the risks associated with fatigue and depressive symptoms, ultimately promoting a healthier work environment for drivers.

## CONCLUSION

This paper constructs a conceptual framework for depression and awareness of mental health of on-road truck drivers, providing and discussing the relevance of three factors. The present study takes the approach of proposing a theoretical model that can be applied to practical situations in the health and trucking industries by reviewing available literature. It should be noted that driving for long hours leads a psychophysiological stress response over an extended period, thus indicating that repeated exposures to driving may act as a chronic stressor. Such a research approach is common, particularly when existing knowledge in the particular area is still somewhat narrow. The present study, hence, contributes to the advancement of the literature on depression and mental health of long-distance truck drivers. It is also hoped that this paper will highlight the importance of stress and fatigue to trucking industry and envisaged that the conceptual framework will form the underlying basis for the development of a more comprehensive model in the future.

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