

## **SHAPING UP TO SHIP IT OUT: AN EXAMINATION OF HEAVY VEHICLE DRIVERS' HEALTH AND LIFESTYLE**

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### **ABSTRACT**

Queensland's road toll has declined steadily during the past decade, yet heavy vehicle crashes continue to contribute to an alarming 10% of fatalities on Queensland roads. Although fatigue has been identified as a significant factor in road crashes, there is new evidence to suggest that this temporary physical condition is just one of the many health and lifestyle components that contribute to crash risk.

In order to examine health and lifestyle factors which may contribute to crash risk, 44 heavy vehicle drivers was surveyed. It was found that heavy vehicle drivers generally conformed to a lifestyle that was not conducive to healthy outcomes. The issues of diet, family dynamics, leisure pursuits, sleeping pattern, lifestyle and health habits play a significant role in the driver's health, mental health and well-being. The data identified the need to further examine the health and lifestyle of long distance drivers. More significantly, it revealed the need to monitor the potential impact of these issues upon road safety and risk management.

### **INTRODUCTION**

Queensland Transport crash data show that between 1993-1997, crashes involving heavy vehicles comprised four percent of the units in all crashes (1). The contribution of heavy vehicle crashes to the road toll (fatalities) was 10% (1). These data indicate a substantial contribution of heavy vehicle crashes to the crash and fatality rates on Queensland roads, a pattern which is reflected in other Australian jurisdictions.

Numerous studies have attempted to identify the many interrelated factors contributing to the causes of heavy vehicle crashes (2)(3)(4). One of the major risk factors identified is fatigue, and efforts have concentrated on the management of fatigue as a countermeasure in reducing the road toll. National data (5) and (6) and international research (7) have recognised fatigue as a major road safety issue that is monitored in all Australian jurisdictions. Whilst fatigue is undoubtedly a significant factor in road crashes, this temporary physical condition is just one of the many components that contribute to an overall understanding of the influence that health and lifestyle factors have upon risk management strategies on the roads.

There has been acknowledged a link between health and driving fitness. Attempts have been made to introduce medical standards for drivers through examinations (8)(9). However, what has not been acknowledged or explored is the degree to which health might be a crash risk. The medical condition of drivers is generally a matter of concern only at the time of licensing and at the investigations of vehicle crashes. These tests fail to investigate the health and lifestyle issues and fall short of encouraging drivers to take control of their own health and lifestyle. Such tests have the capacity to identify potential medical concerns but they have no bearing upon the person's psychological well-being, nor are they designed to have an on-going impact upon modifying and improving the person's health, mental health or lifestyle.

There is evidence that some health and lifestyle factors affecting work performance of heavy vehicle drivers have been considered. Those that have received attention include work environment, issues associated with work organisation, and personal habits and characteristics of drivers (2)(3)(4). The degradation of lifestyle and health as a result of extended shift hours and night work (10) and the increased incidence of crashes associated with night work and fatigue (11) are two health and lifestyle issues that demonstrate the possible impact that health, mental health and lifestyle may have upon risk management and accident avoidance.

There is ample evidence to suggest that improved health contributes to an alert and more productive workforce (12)(13)(14)(15). Driver health and well-being has not been prominent in any of this research, however Roshier-Taks and White (16) prepared a review paper on the issue of "healthy eating on the road" and some reference is made to associated factors, in industry publications such as *Australian Transport News* (17) and *Trucking Life* (18). These articles make reference to matters such as "family time" and "family life" as well as "healthier lifestyle" and the impact of "personal health, eating right and living a healthy lifestyle" on a driver's fatigue management ability. However, they do not draw upon research data and fail to offer sufficient guidance to bring about behaviour modification.

Consequently, there is limited understanding of the health of lifestyle of heavy vehicle drivers as potential risk management factors. Anecdotal evidence suggests that long distance heavy vehicle drivers contend with family separation, inappropriate dietary habits, sedentary lifestyles as well as sleep deprivation. Work demands impinge upon family relationships and their ability to partake in healthy leisure pursuits, impacting upon health, mental health and well-being.

The purpose of this study was to examine the health and lifestyle of heavy vehicle drivers and to identify specific health, including mental health, and lifestyle factors/issues that are evident within the heavy vehicle industry. The study also examines specific issues pertaining to health, mental health and lifestyle that drivers perceive as impediments to productivity and the ability to cope with risk management and crash avoidance.

## METHODOLOGY

### Subjects

The subjects were 44 heavy vehicle drivers (all males) with a mean age of 37.65 years (age range from 27 to 53 years). Driving experience ranged from five to over 30 years, with an average of 13.27 years. The sample included 24 (54.5%) employees and 20 (45.5%) owner-operators. Participation in the study was voluntary. Responses were confidential and only grouped data have been retained.

### Materials

Materials for data collection included a demographic response form and a Likert-scale questionnaire (*SF-12*) that sought specific information pertaining to the participant's health and well-being. The demographic response form included questions pertaining to personal demographics, heavy vehicle crash involvement and leisure activities. The *SF-12* (a multipurpose generic measure of health status) (19) was used to survey health. It measures eight health concepts including "physical functioning, role limitations due to health problems, bodily pain, general health, vitality (energy/fatigue), social functioning, role limitations due to emotional problems and mental health" (19).

### Procedure

Heavy vehicle drivers were approached at a known heavy vehicle rest stop (service station) where a convenience sample was undertaken. The demographic response form and *SF-12* were administered via face-to-face interviews with the drivers. Prior to participating in the interview, respondents were required to indicate that they had read the conditions which included guaranteed confidentiality and totally voluntary participation.

## RESULTS

Thirty-six of the sample participants were in a married/family relationship. They spent between 3 days per week and 6 days per week (mean 4.18 days per week) away from their family.

Respondents had taken an average of 1.91 weeks of recreation leave during the past 12 months (range: 0-6 weeks). Of the 24 employees, 60% identified that this leave time was at their employer's discretion rather than planned recreation leave based upon family needs and/or commitments. The 20 owner-operators all identified that this leave was only taken when reduced commitments permitted time away from work and was not planned in accordance with long term family needs or commitments.

It was noted that 18 (40.9%) identified working on their vehicle as their prime leisure activity. Very few (1.76%) were involved in any structured leisure activity and/or any other form of recreational activity that promoted mental or physical well-being.

Table I: SF-12 Scales-Physical and mental Health Scores.

	MEAN	NORM	STANDARD DEVIATION
Physical Component Scale (PCS)	46.12	50	9.48
Mental Component Scale (MCS)	44.12	50	9.49

As Table I shows, the mean Physical Component Scale (PCS) of the respondents was 46.12 (s.d. 9.48). Respondents to the Mental Component Scale (MCS) showed an average of 44.12 (s.d. 9.49).

## DISCUSSION

The two SF-12 scales measured Physical Health and Mental Health. In both cases scores above or below 50 are above or below the general population. Both scales have a standard deviation of 10. Because the standard deviation is 10, each one point difference in score has a direct interpretation: a one-point difference is one-tenth of a standard deviation.

The mean Physical component Scale (PCS) was comparable to the norms of that section of the community aged between 55-64 years (mean 46.55; s.d. 10.63). The Mental Component Scale average was not comparable with the community average (50) or the norm attributed to the general male population (mean 51.2; s.d. 8.80). In both cases the score achieved by this group was below that projected by community means. This sample group did not demonstrate levels of physical well-being that compared favourably with either the community norm, or specific age group norms.

The study revealed that heavy vehicle drivers conformed to a lifestyle that was not conducive to healthy home cooked meals; the lifestyle did not involve a reliable component of physical activity that contributed to improved physical health; and, the work did not permit reliable sleeping habits. Data collected by the demographic survey, anecdotal evidence and the associated literature would suggest that there was very little in the lifestyle habits that supported improved physical health. The personal maintenance of an ideal level of physical health was not an identified consideration of these individuals. Thirty-seven of the 44 respondents (84.09%) gave indicative responses that workplace demands usurped family needs and commitments and identified that work expectations encroached upon other issues that contributed to mental health recovery. These issues included examples such as the timing of vacations when employment factors dictated rather than when family circumstances identified the need; and, spending 'supposed' leisure time on preparing the truck for its upcoming journey.

The work routines that were demanded of the respondents meant that a lifestyle that supported the maintenance and improvement of mental health was either an insignificant issue or an issue that had to be neglected because of their operational environment. Lifestyle issues that include family relationships, time away from work, recreational pursuits and health promoting activities did not receive the same prominence in their life as did the demands of their employment.

There is some evidence that a small section of the heavy vehicle industry is beginning to recognise the importance of health and lifestyle factors of drivers. One industry magazine (17) notes lifestyle factors being prominent in the life of employees, and raised issues such as:

“drivers are free to depart at whatever time is convenient, allowing for more family time and a healthier lifestyle” (p. 27)

“one of the drivers enjoys his family life and he stays home and has dinner with his family before leaving...” (p.27)

“One of the drivers enjoys his dinner at home because a very important influence on a driver’s fatigue management is his personal health, eating right and living a healthy lifestyle will reduce fatigue and its effects.” (p.28)

Similar issues are also addressed by *Trucking Life* (18) which makes reference to a report on drivers using the Hume Highway. This report highlights significant health and lifestyle issues by identifying...

“... a stable home life, good eating habits and a healthy lifestyle as primary factors allowing drivers to go the distance.” (p.23)

The issues of family life and diet have a major bearing upon a person’s health and well-being. Like many other issues such as leisure pursuits, lifestyle, health habits and family dynamics they play a significant role in the driver’s health, mental health and well-being but they appear to be neglected facets of the research literature and failed to be issues that the respondents in this study were cognisant of as an issue of concern. Not one driver raised the potential of a relationship between their physical and mental health and accident avoidance.

The physical and mental health of truck drivers is a major issue of concern. Authors have identified the potential contribution of food in overcoming driver fatigue as well as the potential contribution of obesity to fatigue and

road safety (16). It is also recognised that there is a relationship between human error, work organisation and lifestyle, including diet, sleep, leisure and mental fatigue. For example, Monk et al. (10) identifies the degradation of lifestyle and health as a result of shift hours and night work. More significantly to this study, Haworth et al. (11) displayed an increase in the incidence of workplace accidents that were attributable to health and fatigue levels in conjunction with night work. Despite the significance of these issues they were not matters for consideration or issues raised in the responses of this sample group.

Regulations demand that drivers take rest breaks that traditionally incorporate eating and/or sleeping. Such regulations demand that drivers address the issue of fatigue. No such demands or expectations are placed upon other physical or mental health maintenance issues.

Compulsory rest stops have the potential to also include health improving exercise. The neglect of this health issue has in the past been attributed to the non availability of attractive programs and training equipment as well as a lack of desire to become involved in (or lack of knowledge about the benefits of) such health contributing activities.

It may also be attributable to the fact that whilst fatigue recovery stops are demanded, no such regulations (or guidelines) are evident on exercise. Such shortfalls can be addressed by education programs and the installation of appropriate facility amenities by entrepreneurial roadhouse operators.

Traditional truck stops have been established to supply parking bays, to cater for the mechanical needs and fuel replenishment of trucks as well as to supply meals for drivers. The development of a precinct that incorporates a roadhouse as well as a selection of facilities that includes a gymnasium, a swimming pool and/or recreation facilities at these establishments had the potential of increasing revenue opportunities for the facility operators as well as contributing to the health and well being of the drivers. It may also be an issue that legislation or workplace health and safety guidelines could expect fleet owners/employers to consider in the future.

The awareness of a need to consider these health and lifestyle issues has recently become a focus of attention of a number of business people and elite sports men and women with extensive travel commitments. It now also has the potential to become a factor in the lives of heavy vehicle drivers and their families and thus make a potential contribution to road safety. The benefits gained from improved health by business people and elite sports men and women has to be translated to increased productivity for fleet owners. If such behaviour modification is recognised by the employers it is more likely to be converted into work organisation patterns that contribute to benefits in the form of increased productivity for fleet owners, improved health and lifestyle for drivers and their families as well as safer roads.

## **CONCLUSION**

Greater emphasis must be placed upon the people and support mechanisms that surround heavy vehicle drivers. In order to improve the eating habits of drivers there will be a need to introduce education programs within family structures as well as with roadhouse catering staff. The lifestyle of truck drivers can also be improved by involving family members in constructive and informative programs that focus upon leisure pursuits, health promotion and family stability resulting in improved mental health for the drivers as well as that of their family members. At the same time, attention has to be centred upon work organisation in such a way that employers and fleet owners can be informed of increased productivity and potentially decreased risk management from a healthier workforce.

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