

# Nutritional Awareness in the Construction Industry

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## Abstract

Nutrition is linked with construction worker health, wellbeing and productivity improvements. Unhealthy eating may result in reduced immunity, increased proneness to developing chronic diseases, reduced concentration and alertness and reduced productivity. Improving the nutrition of construction workers is therefore of paramount concern. Although it is generally acknowledged that improving nutrition requires an understanding of the factors which influence construction workers' food choices, it has also been shown that the first step in achieving healthy eating is through increasing nutritional awareness and knowledge which will help in inculcating positive nutritional behaviour. The present paper therefore aims to highlight the state of nutritional knowledge among construction workers and possible ways of increasing nutritional awareness. A review of literature related to nutritional knowledge of workers, as well as health, safety and productivity of construction workers, was conducted. Sources included web-based journal and conference articles, magazines and reports. The distillation of literature through thematic analysis revealed that construction workers are aware of the benefits of nutrition in improving their health, safety and productivity, albeit it is seldom reflected in the food choices they make. The study also established that nutrition education programmes which target specific audiences and go beyond disseminating information to creating an enabling environment, ultimately beget long-term positive nutritional behaviours. The study concludes that increasing awareness of the importance of nutrition education and similar interventions could primarily improve construction workers' nutrition and in turn, health, safety, wellbeing and productivity. It is recommended that construction stakeholders view nutrition education as an integral aspect of health and safety training on sites. It should be mandatory for companies to have nutrition training sessions for employees on a continuous basis.

**Keywords:** construction workers, nutritional awareness, health and safety, nutrition education

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# 1. Background

Good nutrition has a positive impact on occupational safety and health as well as workplace productivity (International Labour Organisation (ILO, 2009). Unhealthy foods can lead to obesity, chronic diseases and malnutrition which are detrimental to a productive workforce (Yates, 2006; ILO, 2009; World Health Organisation (WHO, 2003).

Good nutrition is essential for maximum concentration and alertness required to perform mentally and perpetually demanding tasks, thereby preventing the occurrence of incidents, accidents, injuries and deaths (Bates and Schneider, 2008). Fatigue and impaired concentration or reduced cognitive capabilities, partly as a result of unhealthy eating, can result in accidents and productivity losses (Hunt, 2002; Bates and Schneider, 2008). Research by the ILO found that poor nutrition accounts for up to a 30% impairment of physical work capacity and performance and 20% loss in productivity, and is tied to absenteeism, sickness and higher rates of accidents (Wanjek, 2005).

Furthermore, research has shown that construction workers have poor health, partly due to poor nutrition (Groeneveld et al., 2011; Thabit et al., 2013). Consequently, strategies to combine protection from occupational risks with programs to encourage individual change to diminish health and safety risks from nutrition-related conditions warrant consideration (Schulte et al., 2007). This is especially true for construction workers who are the most valuable resource involved in the process of constructing facilities and who engage in perpetually demanding tasks, and as such, their health, wellbeing and safety must be assured (Hinze et al., 2013). Their health and safety cannot be assured solely by compliance with existing safety regulations (Hinze et al., *ibid.*).

The first step towards improving nutrition and encouraging behavioural change is through nutritional knowledge and education (McNulty, 2013). According to Grunert et al. (2010) and Chenhall (2010), nutritional knowledge encompasses an ability to identify healthiest foods from various sources or knowledge of what a healthy diet means; knowledge of the sources of nutrients; knowledge of the health implications of eating or failing to eat particular foods; and an ability to cook. In the authors' views, equipping individuals with the information necessary to choose healthy foods and the ability to decipher "wrong" foods from "right" foods will ultimately lead to improvement in diet.

In spite of the importance of nutritional knowledge in improving nutrition and thus health, wellbeing, safety and productivity of construction workers, it appears that scant research has been conducted on the level of nutritional knowledge amongst construction workers. Previous studies were either too broad (for instance, Deacon and Smallwood (2003) which dealt with health-related aspects of safety including *inter alia*, nutrition) and conducted amongst construction contractors; or were not conducted in the construction industry (for example, Divakar et al., 2012). The present paper focuses on nutritional awareness amongst construction workers.

The specific objectives are to investigate the level of nutritional awareness amongst construction workers and to identify effectual ways of improving nutritional awareness amongst construction workers.

Increasing awareness of the value of nutrition, among construction workers will encourage positive individual changes with regard to nutritional uptake. In addition, construction employers and managers could be assisted in planning and implementing relevant and effectual nutritional knowledge programmes to equip and encourage their workers to make good food choices.

In a bid to achieve the above-stated objectives, a distillation of existing literature about the subject was done. Various sources including journals, conference proceedings, magazines and government reports that were related to nutrition and physical health and wellbeing of workers were consulted from search engines such as Google Scholar, Google, ScienceDirect, Ebscohost and Emerald Insight. The materials which focused on nutritional knowledge and ways of improving nutritional knowledge were then selected for the purpose of achieving the objectives of current paper. Thematic analysis was then used to analyze and present themes (patterns) emerging from the synthesis of literature (Alhojailan, 2012). The findings from the synthesis are presented hereunder.

## **2. Nutritional Awareness in the Construction Industry**

Literature suggests that construction workers' bad food choices are partly as a result of the predominantly low level of knowledge about the poor nutritional value of the foods they eat regularly (Men's Health Forum (MHF). Likewise, Wanjek (2005) investigated how workers, in general, eat and found that lack of nutritional awareness led to workers rejecting healthy food offering to the extent that vendors refused to provide them anymore because they didn't sell.

Another study in the United Kingdom (Men's Health Forum (MHF), 2009) investigated the nutritional habits of construction workers by reviewing existing evidence and speaking with industry stakeholders and construction workers themselves. Findings from this study revealed that construction workers especially male workers generally have less knowledge of particular foods and consume high-fat foods in the belief that this will enable them to undertake a physically-demanding job.

In a literature review of factors influencing the diet and nutrition of blue-collar apprentices in Australia, du Plessis (2012) reviewed previous literature and found that construction workers, especially young male workers have poor nutritional status due to a number of factors including, inter alia, lack of nutritional knowledge.

Likewise, Viester et al. (2012) intimated that blue collar workers in a Netherlands construction company have some basic knowledge of nutritional standards but they were not aware of their personal intake levels. This seems to suggest that construction workers may be oblivious of the poor nutritional content of the foods they consume even though they may be somewhat knowledgeable about healthy eating.

The above studies were not conducted in South Africa. Nevertheless, similar research in South Africa expresses the same views. Kolver (2012) stated that many South African workers are unaware of the poor nutritional value of the foods they eat regularly. Additionally, in a survey on construction contractors' perception of benefits of addressing various health-related concerns including, inter alia, healthy eating,

Deacon and Smallwood (2003) revealed that 61% of the participants were aware of the benefits of nutrition to their safety, 26.8% were unaware and 14.3% disagreed that nutrition is important. Albeit this study was conducted amongst construction contractors, and not craft workers, it gives an idea of the opinions of workers in the construction industry regarding the role of healthy eating in preventing accidents and injuries. The study suggests that workers are somewhat aware of the importance of healthy eating.

The above studies seem to suggest that there are construction workers who may know better about nutrition but practice little and some who may know but do not practice healthy eating at all, and still some who may not practice healthy eating simply because they are not aware of the healthy food sources or benefits of healthy eating. Consequently, there is a need to increase awareness and encourage healthy eating behaviours among construction workers, because as McNulty (2013) and Soederberg-Miller and Cassady (2009) rightly opined, nutritional knowledge is a pre-requisite to making positive dietary modifications.

### 3. Towards Improving Nutritional Knowledge/Awareness

It is generally acknowledged that improving nutritional knowledge can be through various avenues commonly termed *nutrition education* (NE). Numerous terms have been used to define NE. According to Contento (2011), NE is any combination of educational strategies (which can be delivered individual, community and policy levels), accompanied by environmental supports, designed to facilitate voluntary adoption of food choices and other food-and-nutrition-related behaviours conducive to health and well-being. NE strategies focus on educating population groups about the importance of and means to increase intake of nutritious foods (Habicht et al., 2009).

Other definitions (Table 1) also purport that NE essentially encompasses programmes advocating positive dietary behavioural change and that interventions should go beyond disseminating information to creating enabling environments for long-time change.

**Table 1: Definitions of nutrition education (Source: McNulty, 2013)**

<b>Definition</b>	<b>Original source</b>
“Nutrition education includes all types of actions designed to change knowledge, attitudes and behaviors of individuals, groups of individuals or populations to contribute to the prevention and control of malnutrition in all its forms, and any erroneous food consumption, including of course the economic aspect.”	Mataix Verdú, 2000
Nutrition education is defined as instruction or training intended to lead to acquired nutrition-related knowledge and/or nutrition-related skills and be provided in individual.	ADA, 2011
“All communication activities aiming at the voluntary modification of practices that have an incidence on population nutritional state, in order to improve it.”	Ministère d’Éducation Nationale 2013 (France)
Set of planned educational activities targeted at certain population groups and aimed at acquiring healthy nutrition behaviors.	Gil, 2010

Nutrition education's main goal is to make people aware of what constitutes a healthy diet and ways to improve their diets and their lifestyles	Eat Well, 2011
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Research evidence indicates that nutrition education brings about significant positive nutritional changes. Wanjek (2005) identified several workplace campaigns where education was vital in motivating employees to eat well. The study also found case studies in which a lack of employee education led to employees rejecting healthy food offerings to the extent that vendors refused to provide them anymore because they didn't sell. Philadelphia (2013) reviewed research that investigated the effects of three nutrition classes on the nutritional knowledge and behaviours of low-income women of ethnically diverse backgrounds. Nutrition training and instruction classes, whereby basics about nutrients, cooking techniques and ways of increasing limited food resources (e.g., gardening), were delivered. This study showed that the participants had increased vegetable intake, decreased "fast-food" intake and read labels more often, after participating in the classes.

Another study by Irvine et al. (2004) evaluated multifaceted ways of imparting nutritional knowledge. The authors developed and evaluated the effectiveness of presentations, audio-visual materials, counseling, dietary assessment and behavioral feedback, self-help manuals and tailored written materials, mailings, and telephone counseling and support in improving nutritional awareness and behaviours. Positive changes in attitudes and nutritional awareness were reported. The authors viewed that the different media used appealed to the diverse and individual attributes of the groups studied. A multimedia program, albeit generalized, can be individualized in multiple ways. An individual's motivation, interests, willingness to change and stages of change are taken into consideration (Irvine et al, 2004; Prochaska & DiClemente, cited by du Plessis, 2012). Additionally, Viester et al. (2012) demonstrated the effectiveness of a multi-faceted health programme to improve physical activity levels and dietary patterns among construction workers. The programme consisted of tailored information, face-to-face and telephone counseling, training and instructions.

The study by Groeneveld et al. (2011) evaluated the efficacy of interventions that involve more personal approaches such as individual counseling. The study investigated short and long-term effects of a lifestyle intervention programme on diet, physical activity and smoking among male construction workers with an elevated risk of cardio-vascular disease. It was indicated that after six to eight months of delivering individual counseling in the form of motivational interviews, there was a statistically significant beneficial effect on snack and fruit intake which was sustained long after the intervention programme had ended.

Iriyama & Murayama (2014) also agree with the view that worksite nutrition promotions in educational form induce behavioural change such as changing eating habits and the effects of these changes such as weight loss and general improvement in health conditions, last for a long time. The intervention consisted of a six-month programme comprising nutrition education and the provision of healthy cafeteria meals along with nutritional information.

#### **4. Summary of findings**

Literature reviewed in the present paper regarding the level of nutritional knowledge suggests that the nutritional knowledge may be limited as evidenced by the unhealthy food choices which construction workers make. In addition, it has been suggested that while some construction workers might know the basics about healthy eating, it may not be reflected in their nutritional behavior since other factors such as economic factors and personal preferences may be contributory to their circumstances.

With regard to nutritional knowledge interventions, the studies synthesized found that NE is an effectual means of imparting nutritional information and inculcating healthy eating habits. The study also revealed that counselling, training, instructions and employee participation are helpful avenues by which nutritional awareness can be created and indeed increased.

Furthermore, the study revealed that the degree of sustainability varies with interventions. The results of interventions with regard to willingness of participants to continue to practise what they learnt either last for a long time or wither after a short while. Without constant stimulation, the knowledge gained might fade away. However, there have been arguments in favor of short-term intervention programs, in the sense that they promote immediate processing of information via stimulation of senses (Society for Nutrition Education and Behaviour, 2013). Furthermore, given the impermanent nature of construction, short-term programmes may be suitable since participants would be involved for the duration of construction activity at a particular site, no matter how short their engagement at a site may be. Due to the changing and temporary nature of the construction industry, workers may not be at one site for a long time. But since they need to continue to fend for themselves while they are between jobs, lasting knowledge which will instill values to encourage positive behavior, attitudes and beliefs are necessary. Hence, short-term multiple interventions to increase nutritional awareness and motivate healthy eating could be effectual on construction sites. Also, multi-media nutrition intervention programs could suit the construction labour force stratified by age, gender and ethnicity.

## **5 Conclusion and Recommendations**

The study set out to investigate the level of nutritional awareness in the construction industry and to identify possible ways of increasing awareness about nutrition. It was found that the level of nutritional knowledge is that poor food choices are made by construction workers. Individual counseling and multi-faceted programmes were advocated as means of improving nutritional awareness. Effectiveness of nutrition interventions would be enhanced if programs are tailored to suit workers in the construction industry, taking into account individual/personal factors/influences such as family and friends and financial capabilities. Programmes should put emphasis on creating a healthy environment to support behavioural change. “Enabling environment” could also entail improving lunch menus, and supporting vendors to offer healthy foods and snacks, as well as eliminating or reducing frustration by proffering information which cannot be acted upon due to personal constraints.

Therefore, successful nutrition awareness programmes, in addition to improving nutritional knowledge, should positively influence perceptions and beliefs regarding nutrition and encourage healthy eating practices for a long time, thereby ensuring that construction workers are continuously in healthy state of mind and body, to perform their duties safely and productively. It is recommended that construction

managers and other stakeholders should encourage and entertain the various forms of training and education highlighted above, aimed at improving nutritional knowledge of the workers.

The current paper is not without some limitations. First, it is only a literature review. Future studies could attempt to investigate the actual level of nutritional knowledge of construction workers. In addition, research is recommended conducted to identify barriers to improving nutritional knowledge.

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