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**Factors Influencing Dietary Compliance amongst Australian Diabetics**

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**Short Abstract:**

Managing the socio-economic burdens associated with the exponential global growth of diabetes diagnosis, poses one of the greatest challenges to modern health systems. Whilst there is no known cure for diabetes, many of the negative health impacts can be successfully minimised through formal therapy, dietary modification and exercise. In particular, dietary modification is considered an important first step and crucial for positive diabetes management and therapy outcomes. Despite this knowledge and extensive support and education provided by the health system, diabetes educators report that many people with diabetes are unable or unwilling to practice recommended dietary modification. This study empirically tests a model of factors that have been shown to play a role in influencing dietary compliance and confirms the importance of self-efficacy in this behaviour. The findings of this study are translated using a social marketing framework into recommendations for diabetes health educators.

*Keywords: Social Marketing, Cognitive Factors, Dietary Compliance*

## **Introduction and Research Aim**

The exponential growth of diabetes is a serious threat to individuals, society and the global health system (WHO 2016) and in Australia alone, the total annual cost of diabetes is estimated at \$14.6 billion (Diabetes Australia 2017). Currently in Australia, around 1.7 million people are diagnosed with diabetes and is the leading cause of blindness, limb amputation and kidney disease (Diabetes Australia 2017). Whilst there is no known cure for diabetes, precautionary measures such as formal therapy, diet and exercise have been shown to be effective in the control and management of many of the adverse consequences of the disease (Pronk & Remington 2015). Of these measures, dietary modification is considered the most crucial for diabetics to control blood sugar levels, hypertension and weight gain all of which can cause other health issues for diabetics (Basu et al. 2012; Holt & Kumar 2015). In spite of this knowledge and support provided by the health system, many people with diabetes continue to engage in poor dietary practices such as overconsumption of sugary, fatty and processed foods (Alkerwi et al. 2012; Basu et al. 2013).

Although there has been attempts to understand the issues underlying food choice behaviour by those with diabetes there are still many questions which remain unknown. Three main factors have been found to influence dietary compliance: individual cognition; environmental factors; and biological factors (Nam et al. 2011; Schiøtz 2012). Of these, cognitive factors are considered to be the major driving force influencing health behaviours (Bandura 1986; Frewer et al. 1996), though empirical testing of the pattern of relationships between these factors has not been consistently tested and results remain inconclusive (Nam et al. 2011) in terms of prediction. This debate in the literature about the importance of and the role played by individual cognition food related behaviour (Nam et al. 2011; Schiøtz 2012) provides the rationale for further exploration in this study. In addition, as no known previous studies have empirically tested a predictive model of dietary compliance amongst those with diabetes that includes the main cognitive factors proposed by extant literature this study will provide valuable findings for researchers in this field.

The challenges persist for social marketers to understand the motivations that drive food choice behaviour for it is essential for the creation of effective message strategies to generate behavioural change (Luca & Suggs 2013). Therefore, by understanding the factors that influence dietary compliance, this study will not only have impact for those working in the health care sector but will also extend current literature in social marketing in support of health care marketing.

This study hence, aims to investigate the factors influencing dietary compliance amongst people with diabetes and leads to the following research question being proposed:

**RQ:** What factors influence dietary compliance amongst people with diabetes?

## **Conceptual Model**

The proposed conceptual model is based on literature drawn from Self-Efficacy Theory (Bandura 1986); Food Risk Perception Theory (Frewer et al. 1996); Food Related Lifestyle Model (Grunert, Brunsø & Bisp 1993) and Social Support Theory (Antonovsky 1974). Attitudes towards health behaviour generally is guided by human cognition constructs such as self-efficacy, risk perception, lifestyle behaviour and the influence of social support groups. This study explores the relationship of these constructs to dietary decision making by people living with diabetes in a predictive model which was not previously tested. This study tested the direct relationships of Self-Efficacy, Food Related Lifestyles, Food Risk Perception and Social Support Groups Usage towards dietary compliance and the mediation effect of Social Support Groups Usage.

## **Method and Analysis**

Pretesting and pilot testing ensured validity and reliability of the survey instrument. Data was collected via anonymous on-line survey and printed surveys to registrants with two diabetes support organisations (i.e. Diabetes Australia (National) and AH-Diabetes Toowoomba, QLD), with 169 usable sample. Indicator items met all structural equation model criteria, i.e. discriminant validity and reliability (Hayes & Preacher 2014). Significant relationships were found between: - Self-Efficacy with both Dietary Compliance and Social Support Groups Usage and Food Risk Perception and Social Support Groups Usage. In comparison, Food Related Lifestyles, Food Risk Perception and Social Support Groups Usage did not significantly influence Dietary Compliance. Interestingly, Social Support Groups Usage was found to have no significant mediation effect between both Self-Efficacy and Food Risk Perception with Dietary Compliance.

## **Results, Discussion and Contribution**

The results show that Self-Efficacy is a significant predictor of food choice behaviour which aligns with theory and other studies (Bandura 1986; Tovar et al. 2015) and confirms that high levels of self-efficacy promotes positive health behaviour. Both the level of Self-Efficacy and the degree of Food Risk Perception were also found to influence the reliance on Social Support Groups. This finding supports other studies (Antonovsky 1974; Bandura 1986; Frewer et al. 1996) which shows, individuals with lower self-efficacy and those who have doubt about their own food choice judgements are more likely to seek additional support to help them manage their dietary practices. The lack of mediating effect of social support usage was confounding given the support for this relationship in the literature (Antonovsky 1974; Tovar et al. 2015) and in anecdotal conversations with diabetes health educators. The findings could indicate that in some instances family support, peer pressure and/or poor quality physician support have been found to discourage social support usage among people with diabetes (Nam et al. 2011; Schiøtz 2012) may partially explain this result.

## **Implications for Theory and Practice**

Health practitioners and policy makers have long adopted the principles of social marketing to inform the design and delivery of effective communication to stimulate and sustain behavioural change initiatives amongst people with diabetes (Andreasen 2002; Luca & Suggs 2013). Our study confirms that initiatives to educate and support people with diabetes must be based on increasing their sense of self-efficacy and confidence in their ability to understand and make judgements about better food choices. This can be done applying many of the principles of social marketing which have been previously used to change public attitudes towards health behaviour and in disease prevention initiatives such as smoking, sexually transmitted diseases, HIV, diabetes and obesity (Andreasen 2002; Grier & Bryant 2005; Luca & Suggs 2013). Impactful message strategies that emphasise the power that individuals have in effectively managing their diabetes and still maintain a socially active lifestyle within the recommended dietary options are critical. In addition, initiatives that educate social support groups, such as families and friends on ways to provide better support to people with diabetes could also encourage improved social support group usage (Carins & Rundle-Thiele 2014; Grier & Bryant 2005). This study will provide useful and valued information to inform social marketing behavioural change initiatives which can help diabetes support systems to effectively sustain positive dietary modification behaviour amongst those living with diabetes.

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