Keep Calm and Lead by Example: Healthy Lifestyles of Dietitians and Satisfaction with Life

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Abstract

Background: The goal of nutrition-focused preventive services is to impact health outcomes for the individuals receiving counseling and education. To date, there has been no comprehensive evaluation of personal lifestyles and satisfaction with life of Registered Dietitians Nutritionists.

Methods: The study aims were to evaluate the reliability of the English version of the Healthy Lifestyle and Personal Control Questionnaire (HLPCQ) and to determine their relationship to satisfaction with life in a random sample of US dietitians (n=493). The HLPCQ was administered online to US dietitians in October 2016 and resulted in a seven-factor solution, and these dimensions were compared to dietitian’s beliefs about health and nutrition to determine construct validity.

Findings: Cronbach’s coefficients for the full scale were 0.824, and seven subscales varied from 0.464 to 0.853. Discriminant analysis was used to differentiate between participants’ gender, health behaviors, and health philosophy on satisfaction with life. Health-related behaviors were positively and significantly associated with SWL. Conclusion: The health behaviors that predicted life satisfaction were routine physical activities, and social-emotional support behaviors. The identification of the key determinants influencing life satisfaction is essential for designing personal health interventions to improve lifespan wellness for allied health professionals.

Keywords: Health; Lifestyle; Dietetic practice; Satisfaction with life; Wellbeing

Background

The position of the Academy of Nutrition and Dietetics (AND) states that the goal of health promotion is the adoption of health-related lifestyle behaviors [1]. The main role of dietitians is to provide nutrition education and interventions which promote health across the lifespan and well-being. Yet, little has been published related to the role of personal wellness habits and practices of dietitians compared to that devoted to the health promoting lifestyles of other health professionals [2-8].

A recent study reported that less than half of Registered Dietitians surveyed met the guidelines for physical activity which could have a negative impact on the content of client lifestyle counseling [7]. Furthermore, clients themselves respond differently to recommendations from health professionals who appear physically fit [9,10]. The integrative perspective of health maintains that individuals are imbedded within a socioeconomic structure where behaviors are largely determined by choice, but may be influenced by an ideology embraced by the healthcare system and its practitioners.

According to the theory of planned behavior (TPB) an individual will assess his intention to adopt a new behavior based on personal behavioral, normative and control beliefs [11]. Thus, an individual’s health philosophy reflects the normative beliefs of society as a whole, and its institutions. Studies utilizing the expectancy-value theory demonstrate that behavior is a function of the expectations of the individual and the value of the goal toward which one is working [12]. Furthermore, studies based on the Pender’s Health Promotion model have shown that an individual’s definition of health predicts the likelihood of engaging in health-promotion or health-protecting behaviors [13,14]. One of its propositions states that an individual will commit to engaging in behaviors if they believe that the goal is a valued benefit.

Health philosophy in the context of healthcare practice is the “actualization of inherent and acquired human potential through goal-directed behavior, competent self-care, and satisfying relationships with others, while adjustments are made as needed to maintain structural integrity and harmony with relevant environments” [15]. The Pender Health Promotion model serves as the framework for exploring whether a
dietitian’s lifestyle is defined by their personal view of health, and whether a health-promoting philosophy favors the desire for a high state of wellness [14]. Extending the Pender model, this study proposes that the ultimate impact of health-promoting behaviors is the outcome of satisfaction with life.

The aim of this study was to explore the relationship between the health-related behaviors of the dietitian and life satisfaction, and the extent to which health philosophy drives a dietitian’s health-promoting lifestyle. Understanding the health philosophy and motivates personal behaviors of health professionals who are engaged in health intervention is critical for health promotion planning and evaluation. Ultimately, the personal and professional practices of a health professional must support her ability to foster healthy lifestyles in others.

Methods

An exploratory study was performed using a cross-sectional online survey of 520 randomly selected Registered Dietitian Nutritionists within a sampling frame of 89,300 dietitians [16]. The inclusion criteria were having the registered dietitian nutritionist credential with the Commission on Dietetic Registration. Random selection increased the likelihood that a diverse range of dietetic practitioners would respond to the survey while reducing the potential for selection bias. The effect size of 0.50 was chosen for a medium to large importance of effect and (HLPCQ) measured personal lifestyle are engaged in health perceived stress and health locus of control scales in a Greek online survey of 520 randomly selected Registered and professional

The validity of the revised LHCS scale was confirmed in a study of white and blue collar workers, which reported Cronbach’s alpha reliabilities of 0.83 overall and 0.89 for wellness and clinical health dimensions, respectively [20]. These results demonstrate that the LHCS instrument is internally consistent.

The theoretical model proposed is that belief in health as wellness, rather than pathology, motivates the dietitian to adopt healthy lifestyles and personal control behavioral orientation in their private life. Furthermore, satisfaction with life, a measure of subjective well-being, is the outcome of a convergence between health beliefs and daily practices.

Results and Discussion

An outlier analysis of the HLPCQ summarized index was performed using the outlier labeling technique. This method identified 27 out of 520 cases or 5.2% as outliers and were removed to allow the use of parametric methods. One of the aims of this study was to validate the English version of the HLPCQ.

The results of the principal component analysis of the 26 items with varimax rotation resulted in a 7-factor solution. Item-to-total correlations for each question correlated with the index score produced an overall Cronbach’s alpha of 0.853, and subscales varied from 0.464 to 0.845. The average zero-order correlation between individual items was 0.236 (Table 1 and 2). The resulting factor loadings had minor differences from the original sample of Greek participants [22]. Specifically, the Dietary Healthy Choices items were split into factors 3 and 4, with the later loading with Dietary Harm Avoidance and Social and Mental Balance items (Table 2). The latent themes that are reflected in these factors make theoretical sense within the context of the practice of dietetics.
Table 1: Sociodemographic characteristics (n=477).

| Characteristics (%), n=477 | Characteristics (%) |
|---------------------------|---------------------|
| Gender                    |                     |
| Males                     | 16 (3.4)            |
| Females                   | 460 (96.4)          |
| Years in Practice         |                     |
| Less than one             | 25 (5.2)            |
| 01-Apr                    | 96 (20.1)           |
| 05-Sep                    | 81 (17.0)           |
| Oct-14                    | 48 (10.1)           |
| 15-24                     | 75 (15.7)           |
| 25-34                     | 98 (20.5)           |
| Greater than 35           | 54 (11.3)           |
| Highest Degree            |                     |
| Bachelor’s                | 208 (43.6)          |
| Masters                   | 240 (5.5)           |
| Doctorate                 | 26 (5.5)            |

Table 2: Principal components analysis with varimax rotation of the HLPCQ scale (n=493).

| Item “How often...” | Factor loadings |
|---------------------|-----------------|
|                     | 1               | 2   | 3   | 4   | 5   | 6   | 7   |
| DR-Do you eat lunch at the same time each day | 0.786 | 0.069 | 0.008 | 0.033 | -0.047 | 0.036 | 0.100 |
| DR-Do you eat dinner at the same time each day | 0.772 | 0.122 | 0.018 | 0.172 | 0.037 | 0.022 | -0.104 |
| DR-Do you eat meals at the same time each day | 0.763 | 0.160 | 0.019 | 0.060 | -0.042 | 0.008 | 0.140 |
| DR-Do you eat breakfast at the same time each day | 0.723 | -0.025 | 0.041 | 0.007 | 0.110 | 0.079 | 0.396 |
| DR-Do you sleep at the same time each day | 0.698 | -0.032 | 0.166 | -0.01 | 0.117 | 0.054 | -0.016 |
| DHC-Do you calculate the calories of your meals | 0.645 | 0.149 | 0.139 | 0.043 | 0.314 | -0.015 | 0.032 |
| DHC-Are you careful about how much food you put on your plate | 0.101 | 0.694 | -0.186 | 0.007 | 0.168 | 0.066 | -0.242 |
| DHC-Do you limit fat in your meals | 0.142 | 0.640 | 0.215 | -0.186 | -0.024 | -0.167 | 0.041 |
| DHA-Do you avoid binge eating when out with friends | -0.017 | 0.203 | 0.718 | 0.093 | 0.034 | -0.093 | 0.197 |
| DHA-Do you avoid eating when stressed or disappointed | 0.088 | 0.057 | 0.614 | 0.229 | 0.071 | -0.01 | 0.012 |
| SMB-Do you concentrate on positive thoughts during difficulties | 0.089 | -0.039 | 0.597 | 0.101 | 0.047 | 0.384 | 0.075 |
| SMB-Do you empty your brain of thoughts or the next day’s program during bedtime | 0.198 | 0.008 | 0.543 | 0.066 | -0.006 | 0.238 | -0.255 |
| DHC-Do you eat organic foods | 0.034 | -0.054 | 0.129 | 0.687 | -0.016 | 0.044 | -0.143 |
| DHA-Do you avoid soft drinks | 0.066 | -0.159 | 0.162 | 0.660 | 0.111 | 0.011 | 0.181 |
| DHA-Do you avoid eating packaged or fast food | 0.100 | 0.123 | 0.286 | 0.598 | 0.069 | -0.081 | 0.160 |
| DHC-Do you check the food labels before buying a product | 0.056 | 0.506 | -0.082 | 0.515 | 0.029 | 0.117 | 0.187 |
| DHC-Do you like cooking | 0.048 | 0.172 | 0.004 | 0.461 | -0.023 | 0.214 | -0.067 |
| PA-Do you exercise in an organized manner | 0.156 | 0.118 | 0.019 | 0.027 | 0.893 | 0.066 | 0.050 |
The cases were grouped into two categories by the K-Means cluster technique using the life satisfaction items. A discriminant analysis was used to reduce HLPCQ to the most essential response items that predict life satisfaction (Table 3). As a result of this procedure the resulting solution identified four HPLCQ items that were able to predict membership in one of two SWL cluster groups resulting in a correct classification 76.3% of the time. Wilks’ Lambda is the proportion of the total variance in the discriminant scores not explained by differences among groups. The resulting significant Wilks’ Lambda of 0.874 (p=0.000) indicate that the group means are significantly different. Results of this analysis demonstrate that 75.9% of cases were correctly classified with the reduced HLPCQ. The relationship between the canonical discriminant function and predictor variables shows a moderate effect between lifestyle and SWL, r (1,4)=0.355, p=0.000, explaining 12.6% of the variation. Zero order correlations with Health Conception-Wellness subscale and life satisfaction items revealed small associations from 0.118 to 0.224, p=0.000 (Table 4).
Table 4: SWLS and LHCS-Wellness subscale inter-correlations, means, and standard deviations.

|                          | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1. In most ways my life is close to my ideal. | 1      |        |        |        |        |        |        |        |
| 2. The conditions of my life are excellent. | 0.761**| 1      |        |        |        |        |        |        |
| 3. I am satisfied with my life. | 0.760**| 0.694**| 1      |        |        |        |        |        |
| 4. So far I have gotten the important things I want in life. | 0.683**| 0.655**| 0.734**| 1      |        |        |        |        |
| 5. If I could live my life over, I would change nothing. | 0.585**| 0.504**| 0.575**| 0.503**| 1      |        |        |        |
| 6. For me, “being healthy” is feeling great –on top of the world. | 0.212**| 0.189**| 0.174**| 0.126**| 0.133**| 1      |        |        |
| 7. For me, “being healthy” is actualizing my highest and best aspirations. | 0.224**| 0.153**| 0.208**| 0.165**| 0.132**| 0.623**| 1      |        |
| 8. For me, “being healthy” is when my mind and body function at their highest level. | 0.120**| 0.118**| 0.120**| 0.112* | 0.071  | 0.397**| 0.500**| 1      |
| M                        | 5.18   | 5.41   | 5.68   | 5.68   | 4.02   | 4.40   | 4.88   | 4.46   |
| SD                       | 1.35   | 1.27   | 1.16   | 1.28   | 1.77   | 0.979  | 0.64   | 0.94   |

Notes: n=493, *p<0.05; **p<0.01.

Table 5: Summary of regression analyses predicting satisfaction with life.

| Gender                           | Model 1 | Model 2 |
|----------------------------------|---------|---------|
|                                  | B       | SE B    | β       | B       | SE B    | β       |
| Healthy Lifestyle & Personal Control Score | -0.751  | 0.231**| -0.129  | -0.626  | 0.229*  | -0.108  |
| Health Conception Wellness       | 0.250   | 0.022**| 0.456   | 0.242   | 0.021**| 0.442   |
| Adjusted R2 (Full Model)         | --      | --      | --      | 0.279   | 0.065**| 0.171   |
| F for change in R2               | 72.296**| 56.167**|         |         |         |         |

Note: n=492, *p<0.05, **p<0.001, a best predictors of life satisfaction only: SMB-balance, SMB-positive thoughts, SMB-family, OPE-aerobic.

As a test of the revised model, the summary index score for the wellness health philosophy variable was entered into a regression analysis along with gender and the best predictors from the HLPCQ scale to evaluate their contributions to satisfaction with life (Table 5). The impact of years of practice was tested, but it did not influence satisfaction with life. Two models were entered to evaluate the contributions of lifestyle and gender to satisfaction with life, and to see whether the wellness health conception influences this outcome. The mean difference between men and women on the life satisfaction index score was 4.14 (p=0.002). The results of Model 1 were notable because women (n=472) vastly outnumbered men (n=20) in the sample, and as there is very little published on the male dietitian experience, we did not include this as a moderator as a hypothesis. These results suggest that male gender has a significant and negative (p=0.001) effect on life satisfaction which explained 22.5% of the variance in SWL.

The index for the wellness subscale for health conception was added in Model 2 improving the overall model slightly with 25.2% variance explained. Thus, believing that health and well-being emerges out of the optimal health functioning has a very small positive influence on lifestyle behaviors. The reduced HLPCQ does not include any dietary choice or avoidance items.
due to the small contribution of these responses to between groups variation due to profession of this unique population.

The factor structure of the set of observed variables with confirmatory factor analysis tested the hypothesis that a relationship between these observed variables and their underlying latent constructs exist. The resulting path coefficients demonstrated that there was a small effect for lifestyle on life satisfaction for women ($r=0.27$, $p=0.000$) and a moderate effect for our small sample of men ($r=0.694$, $p=0.000$) as we described in a previous paper [21]. Although there was shared variance between healthy lifestyle and wellness philosophy, it was small and not significant ($r=0.028$, $p=0.521$). Individuals that respond to health risk motivated by health-protection will first consider the severity of the threat and the probability of its occurrence before responding to fear, a negative emotion, that the risk poses [31,32]. The coping response to a risk can be adaptive or maladaptive based on the individual’s assessment of the efficacy of the suggested behavior and perceived ability to enact this behavior. The men in our study had a lower mean score on the healthy lifestyle and personal control beliefs, but the difference was not significant ($t=4.15$ versus $4.60$, $p=0.086$). This may have an impact on the choices and methods that a dietitian chooses in their daily practice, but little has been published on the impact of personal control beliefs. Researchers have observed that personal beliefs about the value of the health-related behavior and perceived control over a risk are important predictors of a dietitian’s likelihood to inform clients on methods to insure food safety when preparing fresh vegetables [33]. Future research should consider personal characteristics of the RDN and her choice of topics and communication of risk to clients.

The degree of fit between lifestyle and career satisfaction of professionals should be evaluated using longitudinal data analytic techniques to confirm the results of this cross-sectional study. Wellness education should begin early in the professional preparation of dietitian-nutritionists, as well as targeted health interventions to promote their wellbeing [34].

The sample of adults in this study was diverse with respect to age, but homogeneous in gender. Life satisfaction has been shown to differ by race, occupational class, and income [35,36]. The questionnaire design did not include self-identification with respect to race or ethnicity, and regrettably was not linked to the annual salary survey. Future psychometric studies on dietitians should include race, relationship and marital status, family structure, salary expectations, and general health measures. Ultimately, these efforts would support the physical and social health of dietitians and their clients.

Conclusion

The aim of this study was to explore the impact of a dietitian’s health beliefs, and lifestyle behaviors on satisfaction with life [37]. The most influential factors on the life satisfaction of dietitians were healthy lifestyle and personal control, particularly regular physical activity, work-life balance, and family support. The data provides evidence of a direct negative effect of gender on life satisfaction. The authors did not gather other possible mediating variables, such as stress, earnings, marital status, parenthood or career satisfaction to offer a better explanation for these outcomes.

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Competing and Conflicting Interests

None to declare

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Abbreviations

Healthy Lifestyle and Personal Control Questionnaire: HLPCQ
Laffrey’s Health Conception Scale: LHCS
Registered Dietitian Nutritionist: RDN
Satisfaction With Life: SWL

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