Food Consumption Pattern And Health Related Quality Of Life Among Formal Caregivers In South-Eastern Nigerian Healthcare Institutions

Utah-Iheanyichukwu Chioma,*[1, 2] Allison Trust-Jah Tuaegwuchukwu, [2]

[1]*Department of Human Nutrition and Dietetics, Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria*
[2]*Interdisciplinary Research Unit, West African Society of Parenteral and Enteral Nutrition (WASPEN). Abuja, Nigeria and Georgia, USA*
Corresponding Author: ttchioma@gmail.com

Abstract

Formal healthcare caregivers globally confront occupational health hazards, work-related stressors, patient care challenges, and diminished quality of life, which can have a deleterious impact on their health-related quality of life. This cross-sectional study was aimed to investigate the relationship between food consumption patterns and health-related quality of life among formal caregivers in five Federal Medical Centers in South-Eastern Nigeria. A total of 250 participants (160 females and 90 males) comprised of medical doctors, nurses, dieticians, dentists, psychiatrists/psychologists, and laboratory scientists completed the Food Consumption Pattern Questionnaire and Short-Form Health Survey Questionnaire. Regression analysis revealed a statistically significant positive correlation between food consumption patterns and physical health dimension (β = .45, CI: [.78, .23], p<.001), as well as a negative correlation with mental health dimension (β = -.89, CI: [-2.04, -.35], p<.001). Notably, a synergistic interaction was observed between food consumption patterns and health-related quality of life, with a positive impact on both physical health dimension (β = .47, CI: [.23, .34], p<.001) and mental health dimension (β = .36, CI: [.34, .97], p<.001). These findings underscored the significance of addressing the nutritional habits and well-being of formal healthcare caregivers, who, despite their medical expertise, are not immune to the negative consequences of work-related stressors on their health-related quality of life. The study has implications for the development of targeted interventions on food consumption patterns aimed at promoting the health and well-being of critical workforce, like formal caregivers, in hospitals, clinics, and health sectors.

Keywords: Health caregivers, Medical, Clinics, Health sectors

Modèle De Consommation Alimentaire et Qualité de Vie Liée à La Santé Chez Les Soignants Formels Dans Les Institutions De Soins De Santé Du Sud-Est du Nigéria

Résumé

Les soignants en soins de santé formels dans le monde entier sont confrontés à des risques professionnels pour leur santé, à des facteurs de stress liés au travail, à des défis de prise en charge des patients et à une qualité de vie réduite, ce qui peut avoir un impact néfaste sur leur qualité de vie liée à la santé. Cette étude transversale visait à étudier la relation entre les modèles de consommation alimentaire et la qualité de vie liée à la santé parmi les soignants formels dans cinq centres médicaux fédéraux du sud-est du Nigeria. Un total de 250 participants (160 femmes et 90 hommes), comprenant des médecins, des infirmières, des diététiciens, des dentistes, des psychiatres/psychologues et des scientifiques de laboratoire, ont rempli le questionnaire sur le modèle de consommation alimentaire et le questionnaire sur la santé en forme abrégée. Une analyse de régression a révélé une corrélation positive statistiquement significative entre les modèles de consommation alimentaire et la dimension de la santé physique (β = .45, IC : [.78, .23], p<.001), ainsi qu'une corrélation négative avec

la dimension de la santé mentale (β = -.89, IC : [-2.04, -.35], p<.001). Notamment, une interaction synergique a été observée entre les modèles de consommation alimentaire et la qualité de vie liée à la santé, avec un impact positif sur la dimension de la santé physique (ß = .47, IC : [.23, .34], p<.001) et la dimension de la santé mentale (β = .36, IC : [.34, .97], p<.001). Ces résultats soulignent l'importance de traiter les habitudes nutritionnelles et le bien-être des soignants en soins de santé, qui, malgré leur expertise médicale, ne sont pas à l'abri des conséquences négatives des facteurs de stress liés au travail sur leur qualité de vie liée à la santé. L'étude a des implications pour le développement d'interventions ciblées sur les modèles de consommation alimentaire visant à promouvoir la santé et le bien-être de cette main-d'œuvre essentielle, comme les soignants formels, dans les hôpitaux, cliniques et secteurs de la santé.

ملخص

يواجه مقدمو الرعاية الصحية الرسميون على مستوى العالم مخاطر الصحة المهنية، والضغوط المرتبطة بالعمل، وتحديات رعاية المرضى، وانخفاض نوعية الحياة، والتي يمكن أن يكون لها تأثير ضار على نوعية حياتهم المتعلقة بالصحة. كانت هذه الدراسة الشاملة تهدف إلى التحقيق في العلاقة بين أنماط استهلاك الغذاء ونوعية الحياة المتعلقة بالصحة بين مقدمي الرعاية الرسميين في خمسة مراكز طبية اتحادية في جنوب شرق نيجيريا. أكمل ما مجموعه 250 مشاركًا (160 أنثى و 90 ذكرًا) من الأطباء والممرضات وأخصائيي التغذية وأطباء الأسنان والأطباء النفسيين/علماء النفس وعلماء المختبرات استبيان نمط استهلاك الغذاء واستبيان المسح الصحي قصير الشكل. كشف تحليل الانحدار عن علاقة إيجابية ذات دلالة إحصائية بين أنماط استهلاك الغذاء والبعد الصحي البدني (β = .45، CI: [.78 ،.23]، p < .001)، بالإضافة إلى ارتباط سلبي ببعد الصحة العقلية (β = -89، CI: [-2.04 ،-35]، p < .001). ومن الجدير بالذكر أنه لوحظ تفاعل تآزري بين أنماط استهلاك الأغذية ونوعية الحياة المتصلة بالصحة، مع ما لذلك من تأثير إيجابي على كل من البعد الصحي البدني (β = .47, CI: [.23, .34], p < .001) والبعد المتعلق بالصحة العقلية (β = .36, CI: [.34, .97], p < .001). أكدت هذه النتائج على أهمية معالجة العادات الغذائية ورفاهية مقدمي الرعاية الصحية الرسميين، الذين، على الرغم من خبرتهم الطبية، ليسوا محصنين ضد العواقب السلبية للضغوط المرتبطة بالعمل على نوعية حياتهم المرتبطة بالصحة. للدراسة آثار على تطوير التدخلات المستهدفة بشأن أنماط الاستهلاك الغذائي التي تهدف إلى تعزيز صحة ورفاهية القوى العاملة الحيوية، مثل مقدمي الرعاية الرسميين، في المستشفيات والعيادات والقطاعات الصحية.

Introduction

The provision of care by formal caregivers is a vital aspect of healthcare, as they play a crucial role in supporting individuals with various needs (Duggleby et al., 2016). Formal caregivers, distinguished from informal caregivers, receive remuneration for their services and possess specialized training and education in caregiving (Barbabella et al., 2018; Savundranayagam et al., 2021). This expertise enables them to provide high-quality care, addressing the complex requirements of care recipients. However, formal caregivers encounter numerous stressors that significantly impact their daily functioning, self-care, physical functions, eating habits, mental wellbeing, and overall quality of life (Li and Song, 2019; Onu et al., 2021). These stressors can arise from various sources, including workload, patient care demands, and organizational factors (Onu et al., 2021). The cumulative effect of these stressors can lead to burnout, compassion fatigue, and decreased job satisfaction among formal caregivers (Gao et al., 2017).

Food consumption patterns, a critical aspect of overall health and wellbeing, are also affected by the demands of caregiving (Murphy and Turner, 2017; Onu et al., 2021). Formal caregivers often experience disruptions in their eating habits, leading to poor nutrition and inadequate hydration (Pocket Guide for International Dietetics and Nutrition Terminology Reference Manual, 2019). This can result in decreased energy levels, impaired cognitive function,

and compromised immune systems, further exacerbating the challenges of caregiving (Onu et al., 2021).

The concept of health-related quality of life (HRQoL) is a vital concern in healthcare, as it encompasses the physical, psychological, and social functioning of individuals, including both positive and negative aspects (Centers for Disease Control and Prevention, 2020; Onu et al., 2020). HRQoL is a valuable metric for evaluating the effectiveness of healthcare interventions and allocating resources (Gao et al., 2017; Onu et al., 2021). Research has consistently demonstrated that both caregivers' and patients' HRQoL are impacted in clinical settings, highlighting the need for comprehensive support systems and interventions (Gao et al., 2017; Onu et al., 2020; Onu et al., 2021).

Method

Participants

Participants were 250 formal healthcare givers (160 females and 90 males aged between 22 and 60 years) who were conveniently sampled from Federal Medical Centers in Abia, Anambra, Ebonyi, Enugu, and Imo States, Nigeria. Participants were included in the study if they were actively in service each week and they gave consent to participate in the study.

Instruments

Food Consumption Pattern Questionnaire (FCPQ): This is a 12-domian scales developed to assessing food consuming pattern of individuals. Food consumption pattern questionnaire had 12 domains which were – "amount of money spent on food weekly," how they get most food items," how many times they eat in a day," "those on special diet," type of special diet," "what they eat in between meals," "how often they eat fruits," "which meal they skip," "their favorite foods," "how often they drink alcohol," "their smoking habit/tobacco usage," and "if they add salt to their food at the table." Sum of the scores for each domain and average of all domains were used to determine their food consumption pattern to be poor, slightly poor, average, and healthy.

Short Form 12-item Health Survey: This was a 12-item shortened version of the 36-item Short Form Health Survey (SF-36), developed for assessing Health-Related Quality of Life (HRQoL). The short form 12-item health survey (SF-12) had two major subscales (with each having six items) namely – physical component summary (PHS) and mental component summary (MHS). The response pattern ranges between *all of the time (1)* to *none of the time (5)*. Scores on each of the subscales scores ranges between 0 and 100 with a higher score indicating a better health status.

Procedures

With the help of several research assistants, Formal Health Caregivers were approached at their free times at the health facility (during the period of the research). Consenting participants were assured of confidentiality and given consent forms to sign before completing the survey. Out of 300 copies of the two instruments distributed to the participants; 285 copies (95%) were returned by the participants. Among the 285 copies, 35 copies (12.3%) were discarded due to incomplete responses (these participants omitted more than 5 items and in five cases an entire scale were not completed). Two hundred and fifty questionnaires (87.7%) that were appropriately filled were scored and keyed into password secured computer for statistical analysis. Post hoc power analysis using G*Power showed that the sample size used was adequately enough.

Ethical considerations

Ethics approval was granted by one of the five Hospitals Health Research Committee. Participants completed consent forms informing them that disclosed information would be treated in confidence, that they had the right to withdraw without any consequence at any stage, and that their

details would not be disclosed should the research be published.

Data analysis

Pearson's correlation (*r*) analysis was conducted among the study's demographic variables, predictor and independent variables, while multiple regression was applied. Demographic variables (age, gender, marital status, years of experience, number of children, comorbidity (other illness)) were included as control variables in regression models. According to Urbina (2004), correction analysis is a major tool in demonstrating linkages between (a) scores on different tests, (b) test scores and non-test (demographic) variables, (c) scores on parts of tests and scores on whole tests, and (d) between scores on different parts of tests (such as subscales of health-related quality of life). Pearson's correlation enables researchers to make predictions by implying a certain amount of common or shared variance as in this study; it was used to ascertain the linear relationship between food consumption pattern and health-related quality of life.

PROCESS macro (V3.0) for SPSS version 20 (SPSS Inc, Chicago, IL, USA) for data analysis, with 95% confidence interval in our result interpretation. PROCESS is used for regression-based path analysis and creates product terms to analyze interaction effects, automatically centering the predicator variables prior to analysis (Hayes, 2013; Chukwuorji et al., 2017).

Results

A total of 250 participants (64.0% females, n = 160; 36.0% males, n = 90) were included in the statistical analysis (Table 1). The participants' ages ranged from 22 to 60 years, with a mean age of 44.00 (SD = 9.5). The majority (70.0%) were from Igbo ethnic group in Nigeria, and more than half (51.2%) were married. Nurses constituted the largest proportion (39.2%) of participants, followed by other healthcare professionals. In terms of caregiving experience, 32.8% of participants had less than five years of experience, 48.0% had between 5-10 years, and 19.2% had more than 10 years. Notably, 85.2% of participants reported no health conditions, while 14.8% reported various health conditions, including low blood pressure, high blood pressure, asthma, arthritis, diabetes, and ulcer.

Table 1: Demographic and Characteristic of the Participants

Variables	N	%	Mean	SD
Age	22 – 60		44.00	9.5
Gender				
Male	90	36%		
Female	160	64%		
Ethic Group				
Hausa	10	4%		
Igbo	175	70.0%		
Yoruba	20	8.0%		
Others	45	18.0%		
Marital Status				
Married	128	51.2%		
Single	95	38.0%		
Divorced	15	6.0%		
Widowed	12	4.8%		
Profession				
Medical doctor	30	12.0%		
Nurse	98	39.2%		
Dietician	26	10.4%		
Dentist	32	12.8%		
Psychiatrist/Psychologist	18	7.2%		
Laboratory Scientist	46	18.4%		
Length of Experience				
Less than 5 years	82	32.8%		
5-10 years	120	48.0%		
Over 10 years	48	19.2%		
Comorbidity/other illness				
None	213	85.2%		
Low blood pressure	4	1.6%		
High blood pressure	13	5.2%		
Asthma	5	2.0%		
Arthritis	2	0.8%		
Diabetes	10	4.0%		
Ulcer	3	1.2%		

Note: SD – Standard Deviation

Table 2 presents the intercorrelations among the study variables, revealed predictive relationships with physical and mental health outcomes. Notably, gender (female) was associated with better food consumption patterns ($r = 0.15$, $p < 0.05$), while age and number of children showed no significant correlations. Experience was positively linked to food consumption patterns ($r = 0.67$, $p < 0.05$) and mental health-related quality of life ($r = 0.76$, $p < 0.05$). Existing health conditions (comorbidities or other illnesses) were associated with physical health-related quality of life ($r = 0.49$, $p < 0.05$). Pearson's correlations revealed significant relationships between food consumption patterns and both physical ($r = -0.38$, $p < 0.05$) and mental ($r = 0.59$, $p < 0.05$) health-related quality of life. Additionally, a strong correlation was found between physical and mental health subscales of HRQoL ($r = 0.84$, $p < 0.05$). These findings suggest that food consumption patterns, experience, and existing health conditions are important predictors of physical and mental health outcomes among formal caregivers.

Table 2: Result for correlation and regression coefficients between demographic variables, food consumption pattern, and health-related quality of life (physical health dimension (PHD) and mental health dimension (MHD))

Variables	1	2	3	4	5	6	7	8
1. Gender	-	-.05	.08	-.03	.10	.15***	.06	.03
2. Age		-	.01*	-23**	.56*	-.32**	.45**	.34**
3. No. of Child			-	0.4	.09	-.12*	.34**	.27*
4. Experience				-	.56**	.67***	.25**	.76***
5. Other Illness					-	.36**	.49***	-19**
6. FCP						-	-.38***	.59***
7. PHD-HRQoL							-	.84***
8. MHD-HRQoL								-

Pearson's correlation was significant at *p<.001, **p<.01, ***p<.05; Gender (1 = female, 2 = male).
Note: FCP – Food Consumption Pattern
PHS-HRQoL – Physical Health Dimension of Health-Related Quality of Life
MHS-HRQoL – Mental Health Dimension of Health-Related Quality of Life

Table 3 presents results of regression analysis, which revealed that food consumption pattern is a significant predictor of physical health dimension of health-related quality of life among formal healthcare caregivers ($\beta = 0.45$, CI: [0.78, 0.23], $p < 0.05$). The interaction between food consumption pattern and physical health of HRQoL was statistically significant ($\beta = 0.47$, CI: [0.23, 0.34], $p < 0.05$). This indicates that a poor food consumption pattern is associated with poor physical health, while a high level of food consumption pattern is linked to better physical health dimension of health-related quality of life. These findings suggest that promoting healthy food consumption patterns among formal healthcare caregivers may be an essential strategy for enhancing their physical health dimension of health-related quality of life and overall well-being.

Table 3: Main effects of food consumption pattern on physical health dimension of health-related quality of life

Variables	β	SE	T	CI (95%)
FCP	.45	.10	2.04***	[.78, .23]
PH-HRQoL	-.12	.90	-.09	[-.1.76, 1.54]
FCP x PH-HRQoL	.47	.04	4.12***	[.23, .34]

Pearson's correlation was significant at ***p<.001
Note: SE – Standard Error; CI – Confidence interval; FCP – Food Consumption Pattern; PHS-HRQoL – Physical Health Summary of Health-Related Quality of Life

Table 4 presents the regression analysis results, which revealed that food consumption pattern is a significant predictor of mental health dimension of health-related quality of life among formal healthcare caregivers (β = -0.89, CI: [-2.04, -0.35], $p < 0.05$). There was an interaction between food consumption pattern and mental health dimension of HRQoL which was statistically significant (β = 0.36, CI: [0.34, 0.97], $p < 0.05$). This translates that a lower level of food consumption pattern is associate with poorer mental health, while a higher level of food consumption pattern is linked to better mental health dimension of health-related quality of life. These findings showed healthy food consumption patterns among formal healthcare caregivers may be an important technique for fostering their mental health well-being and overall quality of life.

Table 4: Main effects of food consumption pattern on mental-health dimension of health-related quality of life

Variables	β	SE	T	CI (95%)
FCP	-.89	.12	-4.66***	[-2.04, -.35]
MH-HRQoL	.45	1.34	-35	[-3.67, 1.45]
FCP x MH-HRQoL	.36	.05	4.03***	[.34, .97]

Pearson's correlation was significant at ***p<.001
Note: SE – Standard Error; CI – Confidence interval; FCP – Food Consumption Pattern; MHS-HRQoL – Mental Health Summary of Health-Related Quality of Life.

Discussion

This study provides valuable insights into the relationship between food consumption patterns and health-related quality of life (HRQoL) among formal healthcare caregivers. The findings indicate that caregivers' food consumption patterns are significantly affected, consistent with previous research (Pocket Guide for International Dietetics and Nutrition Terminology Reference Manual, 2019; Center for Disease Control and Prevention, 2020). The stressors of being a formal healthcare caregiver, including time limitations, workload, and emotional demands, likely influence their eating habits, leading to poor food consumption patterns.

The study reveals that food consumption patterns significantly predict physical health dimension of HRQoL, with higher consumption associated with better physical health and lower consumption linked to poorer physical health. This aligns with previous research (Gao et al., 2017; Onu et al., 2021) emphasizing the impact of internal and external factors on physical health. The findings suggest that promoting healthy food consumption patterns among formal healthcare caregivers is essential for maintaining their physical health and overall well-being.

Notably, food consumption patterns also predict mental health dimension of HRQoL, suggesting that feeding patterns affect caregivers' mental well-being. This is

consistent with research (Onu et al., 2020; Centers for Diseases Control and Prevention, 2020; Onu et al., 2021) highlighting the influence of external variables, including feeding patterns, on mental health. The study's findings imply that supporting caregivers' healthy feeding behaviors is crucial for maintaining their mental health and reducing the risk of mental health problems.

Recognizing that even health-inclined caregivers may neglect their own feeding patterns, this study underscores the importance of prioritizing their physical and mental health. If caregivers are not healthy and alert, it may compromise the care they provide to patients. Therefore, supporting caregivers' healthy feeding behaviors is crucial for both their well-being and the dietetics quality of care they deliver. Healthcare organizations and policymakers should consider implementing interventions and policies that promote healthy food consumption patterns among formal healthcare caregivers, such as providing access to healthy meals, nutrition education, and stress management resources.

Furthermore, the study has implications for healthcare workforce development and capacity building. By prioritizing the well-being of healthcare caregivers, healthcare organizations can improve retention rates, reduce turnover, and enhance the overall quality of care. This, in turn, can lead to better health outcomes, improved patient satisfaction, and increased productivity in the healthcare sector. In addition, the study's findings highlight the need for interdisciplinary collaboration and a holistic approach to healthcare. By recognizing the interrelationship between food consumption patterns, physical health and mental health of HRQoL, and overall well-being, healthcare providers can develop targeted interventions and policies that address the complex needs of healthcare caregivers.

Ultimately, this study underscores the importance of prioritizing the well-being of healthcare caregivers, recognizing their critical role in delivering high-quality care and promoting positive health outcomes. By investing in their well-being, we can build a stronger and more resilient healthcare workforce, ultimately leading to better health outcomes and improved patient care.

Conclusion

The study contributed to the growing body of research highlighting the critical importance of food consumption patterns in predicting physical health dimension and mental health dimension of health-related quality of life (HRQoL) among formal healthcare caregivers. The findings underscore the need for healthcare organizations and policymakers to prioritize the feeding patterns and overall well-being of caregivers, recognizing the bidirectional relationship between physical health and mental health of HRQoL. By promoting healthy food consumption patterns and addressing potential nutrition-related issues, healthcare organizations can enhance the effectiveness and resilience of caregivers, ultimately leading to better health outcomes for patients and improved capacity building at the national level. Moreover, investing in the well-being of healthcare caregivers can lead to improved job satisfaction, reduced burnout, and enhanced overall quality of care.

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