A Cost-Benefit Analysis of EFNEP Utilizing Biomarkers of Chronic Disease Risk
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BACKGROUND

Chronic disease is a burden on the US economy: $4.1 trillion in medical costs and $5 billion in lost wages each year.

The Expanded Food and Nutrition Education Program (EFNEP) addresses chronic disease by encouraging healthy food behaviors among low-income participants.

Prior EFNEP evaluations conducted cost-benefit analyses (CBA) using biased, self-reported food behavior and intake data to assess the economic value created through chronic disease risk reduction.

Biomarkers (biological measures of chronic disease) are an objective means to quantify the economic benefits created by EFNEP in a CBA framework.

STUDY DESIGN

Longitudinal quasi-experimental design with 500 participants (250 control / 250 EFNEP) from 4 programs (CO, FL, MD, WA)

4 data collections (Pre, Post, 6mo-Post, 1yr-Post) with escalating honoraria ($20, $30, $40, $50)

3 biomarkers measured (body mass index, blood pressure, HbA1c)

AIMS – YEAR 1

• Finalize project protocols
• IRB & data sharing agreements
• Personnel training
• Site & participant recruitment
• Begin data collection
• CBA methodology development

OBJECTIVE

To assess whether the EFNEP is a cost-effective nutrition education intervention that generates sustained improvement in chronic disease biomarkers

MATERIAL DEVELOPMENT

• Standard operating procedures
• Data collection & entry protocols
• Biometric forms and handouts
• Health questionnaires
• Demographic forms
• Data collection scripts
• Recruitment flyers
• Reminder postcards
• Spanish translation/backtranslation of all forms
• Data collection training videos

BIOMARKER CBA METHODOLOGY

Biomarker CBA updates behavioral CBA (Rajgopal et al.) using biomarkers (instead of self-reported food behaviors) to estimate program benefits

Direct Benefits = ∑_{i=1}^{7} (A_i × B_i × C_i × D_i × E_i)

Indirect Benefits = ∑_{i=1}^{7} (A_i × B_i × C_i × D_i × F_i)

[A]: annual number of adult EFNEP graduates
[B]: lifetime incidence rate of chronic disease
[C]: estimated biomarker change for chronic disease i attributable to EFNEP
[D]: impact of biomarker change on risk for chronic disease i
[E]: PV medical costs for chronic disease i
[F]: PV lost earnings for chronic disease i

CHALLENGES & SOLUTIONS

CHALLENGES
• The Great Resignation (2021-Present) – 4 Co-PIs left academic positions; EFNEP staff turnover; administrative staff turnover
• Coordination of IRB Reliance Agreements and DTUA across 7 universities

SOLUTIONS
• Onboarded a strong team of 4 new Co-PIs
• IRB approval from UMD (several amendments due to new Co-PIs)
• Established IRB Reliance Agreements w/UFL (15-month process), WSU (9-month process), & CSU (9-month process)
• Infrastructure development to facilitate data sharing (Qualtrics & Box)

CONCLUSIONS

Results will provide objective estimates of the economic value created by EFNEP through chronic disease risk reduction.

Estimates will provide insight to support programming enhancement and accurately demonstrate the economic value generated to policymakers and stakeholders.