

The Association Between Family Meals and Cardiovascular Disease
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ABSTRACT:

Background

Although many socioeconomic risk factors for cardiovascular disease have been extensively analyzed, factors related to family dynamics and household meal consumption have yet to be better understood. This scoping literature review was conducted to provide a comprehensive understanding of the association between family meals and the risk of cardiovascular disease.

Methods

A scoping review of Google Scholar and PubMed with keywords related to family meals and their impacts on cardiovascular disease was utilized. Some keywords were “cardiovascular disease” and “family meals”. A broad inclusion criteria was used, including articles from any geographical location. Literature articles were excluded.

Results

Five articles were reviewed, from a broad review of social relationships and cardiovascular disease to a more focused study that analyzes specific family diet interventions to mitigate cardiovascular risk. Among these articles are topics of the frequency of family meals as well as having a meal companion, both of which have a positive association with cardiovascular outcomes. We also found that an increased frequency of shared mealtimes in families had a positive impact on cardiovascular health.

Discussion

This scoping review suggests that family meal patterns and positive meal consumption habits, which are influenced by social interactions with close relatives, help reduce cardiovascular disease risks. Social interactions have a strong impact on individuals’ food selections and the way their meals are consumed. However, further studies would be needed to validate these findings.

INTRODUCTION:

It is well known that some diets are closely related to an increase in risk of cardiovascular disease, including diets of high cholesterol, excess calories, and lack of fruits or vegetables. Food selection may initially seem to be a very personal decision, but evidence suggests that humans,

as social creatures, interact with others which often leads to changes in the type of food consumed as well as our eating habits [1]. Social interaction in an environment where family members care for each other's health, along with the selection of healthy diet and meal habits, further reinforces a favorable impact on cardiovascular risk.

Cardiovascular disease (CVD) is the leading cause of death globally, responsible for around 17.9 million deaths each year [2]. Morbidities associated with CVD are often caused by heart attacks and strokes, and even in the case of survival, overall health and lifespan are diminished [3]. In 2021, 1 in every 5 deaths in the USA were due to CVDs [3]. The World Health Organization (WHO) estimates that over 75% of premature CVD is preventable [4].

Dietary habits are well established to have a strong correlation with developing CVDs. For example, a high intake of salt, fat, and excess calories has frequently been shown to lead to CVDs [3]. Many of these factors are related to not only personal but also interpersonal dynamics, especially in the setting of a household.

Dietary patterns are closely tied to the choices people make on what to eat as a family. These choices have a significant impact on major CVD risk factors [3]. There is a paucity of literature reviews on this matter; with this scoping review, the goal is to synthesize our understanding of CVD and family meals.

METHODS:

Google Scholar and PubMed were used to complete this scoping review. The key search terms used were "cardiovascular disease", "cardiovascular health", "family meals", and "family support". Articles that were focused on family meal dynamics and their impacts on cardiovascular health, regardless of age, sex, or geographical location were included and literature reviews were excluded.

RESULTS:

The study "Social Relationships and Cardiovascular Disease Risk Factors: Findings from the Third National Health and Nutrition Examination Survey" found trends between risk factors for cardiovascular disease and the frequency of interactions in individual and organizational relationships [5]. The frequency of interactions was defined with a questionnaire of how many times per week the subject visited or called friends/family and attended clubs or church [5]. The five risk behaviors studied were smoking, physical inactivity, inadequate fruit and vegetable consumption, not having a blood pressure check within the previous 12 months, and not having a cholesterol check in 12 months [5]. With a more frequent presence of individual or organizational relationships, study participants tended to eat healthy amounts of vegetables, get their blood checked more often, and tended to smoke less (or not at all) [5].

The influence of social relationships is shown to be a factor in the overall health of a family. In the study “Effects of a Family Diabetes Self-Management Education Intervention on the Patients’ Participating Supporters”, family members of patients with diabetes were encouraged to attend diabetes education classes along with their patients and follow the same meal recommendations as the patient [6]. The study concluded that shared meals and exposure to health education of an entire family (instead of just the patient) would therefore increase the health of the participating family members along with the patient [6]. The participants’ health was indicated through BMI, physical activity, and rates of consumption of healthy or unhealthy food [6].

The inherent connection between a patient’s health and the health of their residing family members is, in part, due to shared meals. The frequency of shared mealtimes in families was shown to have an impact on cardiovascular health in the study “Effects of Family Meal Frequency on Risk Factors for Cardiovascular Disease in Korean Elderly Males and Females” [7]. Data was extracted from the Fifth Korea National Health and Nutrition Examination Survey, which concerned elderly Koreans and their risk factors for cardiovascular disease such as blood pressure, BMI, and cholesterol levels [7]. As the frequency of meals they shared with family or friends increased, their blood sugar, cholesterol, and BMI reached healthier amounts; for example, as the number of shared meals increased by one standard deviation, the interpretation of the path coefficient indicated that the standard deviation of blood sugar in males decreased by 0.024, the BMI in males decreased by 0.38, and the total cholesterol in females decreased by 0.047 [7].

This pattern was seen in another Korean study, “Association between eating alone and cardiovascular diseases in elderly women: a cross-sectional study of KNHANES 2016 data” [8]. As women ate more meals alone, they were less aware of nutrition labels [8]. Just 29.5% of menopausal women in Korea who ate more than two meals a day alone were aware of nutrition labels, compared to an awareness of 43.3% of women who ate more than two meals a day with others [8]. Women who ate alone were 2.61 times more likely to have angina than women who ate with others [8]. The presence of an “eating companion” was therefore shown to be in improving CVD outcomes in menopausal women [8]. Eating alone was associated with poor food choices, such as fatty and processed foods, as well as the consumption of excess calories [8]. Having a “companion” to eat with encouraged healthier meal choices and meal consumption behavior [8].

DISCUSSION:

Study findings suggest that positive interpersonal relationships have favorable impacts on modifying assessed cardiovascular risk factors, including the choice of a healthy diet [5]. Additionally, even the mere presence of an “eating companion” was shown to work in favor of reducing cardiovascular risk [8]. Elderly citizens who shared 3 meals per day with their family had better results than those who only shared 1 or no meals a day with others [7]. Though a lack

of participation hindered some testing results, a connection is likely to emerge in future trials between a patient's diet regimen and the health of other family members living with them [6].

A limitation of the study is the paucity of experimental research papers related to the association between family meals and CVD risk. Future studies are needed to further support these findings. The geographic diversity of the study also makes it difficult to standardize the findings accounting for each country's different diet cultures.

A prime example of this is “A three-arm randomized controlled trial using ecological momentary intervention, community health workers, and video feedback at family meals to improve child cardiovascular health: the Family Matters study design”, which has not published results yet [9]. The purpose of the Family Matters study design is to see how much of an impact the frequency and quality of family meals would have on cardiovascular disease risks in American children [9]. The study also aims for behavioral changes by using real-time interventions: text messages would be sent out inquiring about the family meal planner's stress and what sort of meal they had planned [9]. A community health worker might be sent to help make a meal more healthy [9]. They predicted that these interventions would improve a child's BMI percentile and diet quality, as well as that of their family members, effectively reducing the general risk of cardiovascular disease [9].

This is a prospective study in the pediatric population that studies changes in cardiovascular risk through family dynamics and modulation of food selections; however, a prospective study in the adult population will be needed to further validate the findings for the adult population.

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