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Critical challenges of economic and social issues in promoting dietary change and positive food choices for poor people with low income who experience cardiovascular disease in Pakistan

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This qualitative research study was to understand the effects of various factors that inform Pakistani people of low SES in making decisions on food choices after diagnosis with CVD. Research Questions: (a) What are the factors that inform Pakistani people of low SES in making decisions on food choices after diagnosis with CVD? (b) What are the factors that promote the consumption of healthy diets in people of low SES who have CVD? (c) What factors inhibit people of low SES who have CVD from consuming healthy diets? 24 participants were selected from two cardiac centers in Karachi, Pakistan. Seven major themes are (a) the meaning of food and healthy diet: a social dimension; (b) poverty and a healthy diet: not a matter of choice; simply to satisfy hunger; (c) Health promotion is a political issue: survival is difficult because of political unrest in Karachi (c) hope for recovery and family support: motivation for dietary change; (d) Family support and family relationships affect diet change (e) self-control and self-determination: choosing between taste and health; and (f) culture and family values promote or hinder dietary change. The Participants' data reveals that food choices do not simply mean the consumptions of healthy items; it means communication, socialisation, expressing culture, reflects family and religious values. The challenge lies in identifying and resolving the underlying structures and mechanisms that shape behaviour change.

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What significance can be realized if think of the respiratory chain as the molecular heart

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Studies in our lab have shown that the production of ATP in mitochondria by the way of electron transfer of the respiratory chain is always combined with the generation of $O_2^{\cdot-}$ and H_2O_2 through the electron leak pathways. There are four electron leak pathways in the respiratory chain. Two of the cytochrome c mediated pathways play a role in down regulating the level of $O_2^{\cdot-}$ and H_2O_2 in mitochondria. The third pathway of $O_2^{\cdot-} + H^+ \rightarrow HOO^{\cdot}$ is related to the process of maintaining body temperature because the reaction of $HOO^{\cdot}$ with the double allyl hydrogen atom of the unsaturated fatty acid is heat releasing. Whether or not this pathway is related to obesity is not known. The fourth pathway is $O_2^{\cdot-} + NO \rightarrow ONOO^-$. The $ONOO^-$ is able to pass through the cellular membrane when it combines with H^+, but we do not know if the long distance penetrates membrane transfer occurs in human body. Animal models show that the level of electron leakage in the mitochondrial respiratory chain is always higher in pathological conditions. The H_2O_2, as the product of electron leakage, has higher pathological significance as it has longer life-span and can be spread across membranes. The fact is that the ROS generated in the electron leak pathways of mitochondrial respiratory chain have two opposite effects on the human body: the negative effect of ROS is causing oxidative damage then leading to disease or aging; the positive effect of ROS is playing as the signal to stimulate the antioxidative function and to strengthen the ability of damage repairing. What factor decides the effect of ROS playing as positive or negative roles? Does the positive effect of mitochondrial ROS have the role in protecting heart from diseases? As the substrates of respiratory chain are delivered by heart pumping, the respiratory chain can be considered as the molecular heart and the human body can be considered as the aggregate of huge number of molecular hearts. The normal operation of molecular hearts makes the human body in healthy state. The damage of molecular hearts causes the human body aging or diseases. Then a lot of inspiration to protect heart from diseases can be obtained from the research of mitochondrial respiratory chain.

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