Nutritional status and handgrip strength in older refugees

Summary of research

A recent study set out to demonstrate the relationship between nutritional status and handgrip strength in older Rwandan refugees. The nutritional status of older people has been related to functional ability and strength, and handgrip strength is the most common assessment method for upper extremity muscle strength.

Nutritional status is particularly relevant to the survival of older refugees and their dependants. Older refugees can be a particularly vulnerable group, as living conditions are harsh and social networks may have broken down, yet consideration of older age groups amongst refugees is rare. Indeed, in Bosnia-Herzegovina, undernutrition was found to be absent among children whereas the prevalence in older adults was 10-20%. Similar figures of undernutrition have been demonstrated in older Rwandan refugees.

This particular study was set in a Rwandan refugee camp located in the Karagwe district of north-western Tanzania, and took place between 1995-96 (post-emergency phase). A total of 413 men and 415 women, aged 50-92 years, participated in the study. Weight, height, mid upper arm circumference (MUAC) and triceps skinfold measurements were obtained using standard techniques. For participants with visible kyphosis (curvature of the spine), height was estimated from arm span measurements using regression equations developed from non-kyphotic subjects within the same sample. Handgrip strength was measured using a mechanical handgrip dynamometer. Information regarding physical activity and health status was obtained through interviews and clinical screening.

The study observed that about 40% of the sample (of whom two thirds were female) lived without a partner. The prevalence of under-nutrition was 19.5% in men and 13.1% in women and was higher in those over sixty years of age for both sexes. The older refugees were still quite active in the camp. More than 70% were engaged in work in kitchen gardens and light household activities, while 42% took part in heavy household activities, such as fetching water and firewood. Men performed heavy household tasks and undertook paid labour significantly more often than women. Reported health problems were mainly of a chronic nature, such as dentition and vision problems, non-specific poor general health (self-reported), poor mobility and depressive symptoms. Women were significantly more likely to suffer from these problems than men.

The study found that handgrip strength was significantly higher in men compared to women (30.3 versus 22.3) and was significantly lower in each older age group in both sexes. Handgrip strength was positively correlated to calculated body mass index (BMI) and arm muscle area (AMA). Individuals with poor nutritional status (BMI <
18.5) were 1.75 times more likely to have impaired handgrip strength compared with those of adequate nutritional status. After controlling for potential confounders (sex, age and height), BMI still remained a significant contributor to the variation in handgrip strength.

The main conclusion of the study was that nutritional status is associated with handgrip strength, independent of sex, age and height in this refugee population. This may indicate that underweight older people are likely to have more difficulties in functioning independently in the community. The author states that good functional ability is an important attribute in refugee camps, where people are not self-sufficient and caring behaviour is often diminished. Especially in unstable situations, where many young adults may have died and families may have been split up, independent older people still have an active role to play in maintaining family life and well-being, and in the wider community. Therefore it is essential that older people remain in good nutritional and general health condition for as long as possible. The author of the study suggests that further research is needed to investigate if improving nutritional status can actually lead to better functional ability.


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