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Experimental research

Consanguinity profile in the Gaza Strip of Palestine: Large-scale community-based study



Mahmoud M. Sirdah*

Biology Department, Al Azhar University-Gaza, PO Box 1277, Gaza, Palestine

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ABSTRACT

Consanguineous marriages which have been practiced throughout history continue to be practiced within different ethnic, religious and social groups to varying degrees with highest prevalences in North Africa, Middle East and central and south Asia. In the Gaza Strip of Palestine, little is known about the consanguinity profile, so the present large-scale study aims to explore the consanguinity profile of two generations using data from the β -thalassemia premarital screening program. Sociodemographic data analysis included 156,635 (141,200 males and 15,435 females) persons and their parents, representing 141,200 couples who were referred to the Thalassemia and Hemophilia Center for premarital testing. In addition, the consanguinity characteristics of parents of 217 transfusion-dependent β -thalassemic non-sibling patients were analyzed. Results revealed a significant decrease in the overall prevalence of consanguineous (first- and second-cousin) marriages between the previous (fathers') generation (45.2%) and the current (groom/bride) generation (39.9%). Among the five governorates of the Gaza Strip, records of Gaza Governorate revealed the lowest occurrence (36.9% current generation and 42.1% previous generation) of consanguineous marriages, as compared to all others. Consanguineous marriages are significantly higher in semi-urban areas (41.6%) than in urban areas (39.1%) in the current generation (previous generation, 46.4% vs 44.7%, respectively). Compound consanguinity (two generation) and a single level of consanguinity were seen in 20.7% and 43.7%, respectively, of the cases. The average age of those with first-cousin marriages is significantly lower (22.4 ± 4.4 years) than those with second-cousin marriages (24.3 ± 6.1 years) and the non-consanguineous (26.5 ± 8.2 years). The rate of consanguineous marriages among never married people (42.2%) is significantly much higher than the rate of people with multiple marriages (18.1%). About 74.7% of the non-sibling thalassemic patients of the Gaza Strip are associated with consanguineous parents, of them 54.4% first-cousins and 20.3% second-cousins.

In conclusion, although there is a decline in the consanguinity profile in the present compared to previous generation, consanguineous marriages are still a common practice in the Gaza Strip, which rationalizes the necessity for more awareness and counseling efforts about the potential health-related risks of consanguinity on individual lives and the population overall.

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1. Introduction

Consanguinity describes a relationship between two people who have at least one traceable ancestor. It has been used to describe the level of kinship of two individuals [Bittles, 2011]. Accordingly, and from a population or human genetics point of view, the term consanguineous marriage describes the union of a couple characterized by the sharing of common ancestor(s), with a separation less than 3–4 generations in the past. However, in

medical genetics, consanguineous marriage is more defined and represents the union of second-cousin or closer relatives [Bittles and Black, 2010; Saggar and Bittles, 2008; Tadmouri et al., 2009]. Historically, consanguineous marriages, which have been practiced since ancient times, are still widely seen in different ethnic and religious groups, to varying degrees. Although first-cousin marriages were commonly practiced in most Western countries up to the mid-nineteenth century, concerns about major physical and intellectual problems occurred in the offspring of these couples resulted in a noticeable decline of consanguineous marriage into the twentieth century. Unfortunately, this perspective is not reflected in the rest of the world, including the Middle East, and such marriages are still a frequent occurrence where various religious,

* Tel.: +97 05 99 481194; fax: +97 082641888.

E-mail addresses: msirdah@hotmail.com, sirdah@alazhar.edu.ps.