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To assess the best awareness aid in the dissemination of the knowledge related to consanguinity linked genetic diseases among the Students of Taif University

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ABSTRACT

Consanguineous marriages are in tradition and are very common in Saudi Arabia. It needs an effective awareness among the population towards the detriments and inheritance of genetic diseases through their offspring's. A study was conducted among the students of Taif University in groups of male, females, medical and non-medical students using close ended and cross-sectional questionnaire. The questionnaire was targeted to reveal the superior awareness aids to assist an efficient dissemination of knowledge towards the consanguinity linked genetic disorders and their etiology. According to the results, novel social media was found to be an effective medium of awareness among the classical medias and other preventive programs.

INTRODUCTION

A consanguineous marriage termed applicable where the marriages are sanctify among the persons descending from the same kinfolk with close biological relations, in other words marriage between individuals having common blood in the form of a common ancestor. (Hamamy, 2012) Traditionally, many cultures have practiced consanguineous marriage and still in continuation for the firming family bonds and property related matters. (Abdalla and Zaher, 2013)

The prevalence of consanguinity is speckled worldwide. As per law, consanguineous marriages are illegal in United States, whereas less than 0.5% was reported in Europe. (Ottenheimer, 1996, Alharbi *et al*., 2015) On the other hand, more than 50% of consanguineous marriages were collectively reported in North Africa, Middle East, and West Asia. Pakistan having a strong culture for consanguineous marriages between cousins and are associated with relatively high prevalence of recessively inherited diseases. A study reported around 82.5% of couples in Pakistan are first, second or third blood-relatives. (Hamamy, 2012) (Abdalla and Zaher, 2013)Many studies have been conducted in Middle East and around 50% of inbreeding was reported from Qatar, Kuwait, and the United Arab Emirates. According to the recent studies, Saudi Arabia was also estimated to have a prevalence of 56% in 13 provinces among 33.6% as first-degree cousins and 22.4% as other type. The study included the urban and rural; moreover the rate was classified by the degree of spousal relationship. (El-Hazmi *et al*., 2011)(Jalili) (Figure. 1)

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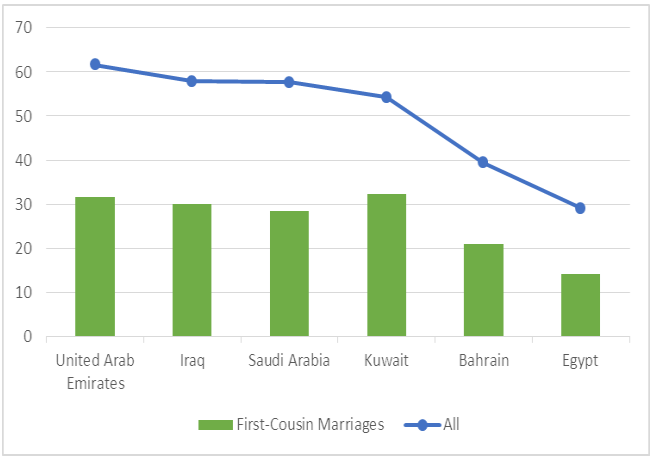

Fig. 1: An estimation of first cousin and all consanguineous marriages (%) in some Arab countries

Consanguinity associated recessive genes expression from the ancestors are accountable for the detrimental health effects including other factors i.e. ethnicity, religion, geography, and language. A high rate of consanguinity leads to develop specific and isolated groups exhibiting confined, extended, and multigenerational pedigrees with variety of rare inherited diseases. (Rao *et al.*, 2009). Higher rates of congenital malformation, neonatal and post neonatal mortalities were reported in the descendants of consanguineous parents in comparison with the non-consanguineous parents. Recently a prevalence of congenital heart disease was reported in KSA as a consequence of inbreeding. (Shawky *et al.*, 2013)

Awareness encouragements of audio visual, social media, Research publications, workshop etc. have done their extended role in the awareness of consanguinity and found to be a best way of communication. Among them the social media has played a marvelous role among the huge number of population. (Soujanya and Amarnath) (Pujar, 2013) According to an estimation, globally, around 2.1 billion in 3 billion internet users are having social media accounts among the 1.4 billion users were reported using Facebook and filling half a million new users per day, around six new profiles per second, and 70% of views per day. On the other hand, around 284 million twitter active users with an average of 500 million tweets were reported per day. Instagram and YouTube were also been reported to serve in consanguinity associated awareness. Around 300 million Instagram users, out of 53% were reported under the age of 30, and around one million people using YouTube, with 6 billion hours video visualization every month and 400 hours video uploading every minute. Social media proved to be a powerful medium as it provides an open and instant interaction among the community especially the adolescents. In 2005 around 12% of adolescent of age group 18-29 years were reported to use social media in US, which was increased to 90 % in 2015. (Smith, 2016)

Taif is city located above the Mecca on the eastern slopes of the Al-Sarawat Mountains in Saudi Arabia (KSA). It has a population of 1,200,000 with variety of tribes' inhabitation, where prevalence of consanguinity is very common. In Taif University, KSA, students and faculty members are determined to use various media to promote the teaching and learning assignments, and social media is one of the effective tool to relay awareness, education, data collection, information dissemination. The aim of the study was to evaluate the role of various awareness aids revealing the knowledge of drawbacks prevailed by consanguineous marriages in the student groups studying health and non-health sciences at Taif University. Selection of students population was done because of their educated rationale attitude and marriageable age.

Methods:

The study was conducted in undergraduate students (Male and Female) during the 1st and 2nd semester, academic year 2016 via close ended & cross-sectional study at Taif University. The data were collected from six colleges Viz. College of Medicine, College of pharmacy, College of Applied medical Science, College of Al-Sharia and Regulations and College of Administration and Financial Science and College of Education. The coordinators followed an extensive review of the literature on knowledge about consanguineous marriage and linked inherited diseases for designing a structured questionnaire comprising close-ended questions. The participation of students was kept voluntary and confidential. The researchers gave a brief explanation about the main objectives of the study before distributing the questionnaires. The questionnaire encompassed two main parts; the first part was on the socio-demographic traits including gender, age, college, and parent level of education. The second part accesses the students' level of knowledge towards awareness aids and publications related to consanguineous marriage and linked diseases. The questions concerning with the attitudes were graded by Likert scale measuring 5 points. The 1 point revealing strongly agreed while the 5 points considered as strongly disagreed. The statistical analysis was done by using Statistical Package of Social Science (SPSS).

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Result:

A total twelve hundreds of student participants were undergone the survey program, in which 600 (50%) male and 600 (50%). Among them 200 (16%) students from each colleges have participated in the survey. A total number of 689 (57.4%) of participants were found to have their parent education level below the University Graduation, while 511 (42.6%) were found to have above the university degree level.

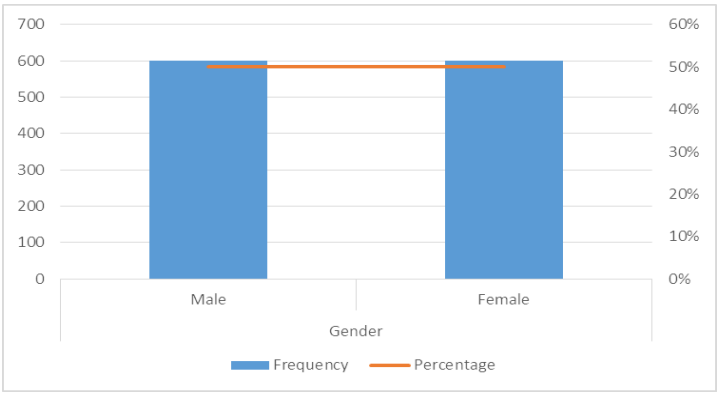

Fig. 2: 1200 participants with a ratio of 1:1 (50%) of each male and female were involved in the study

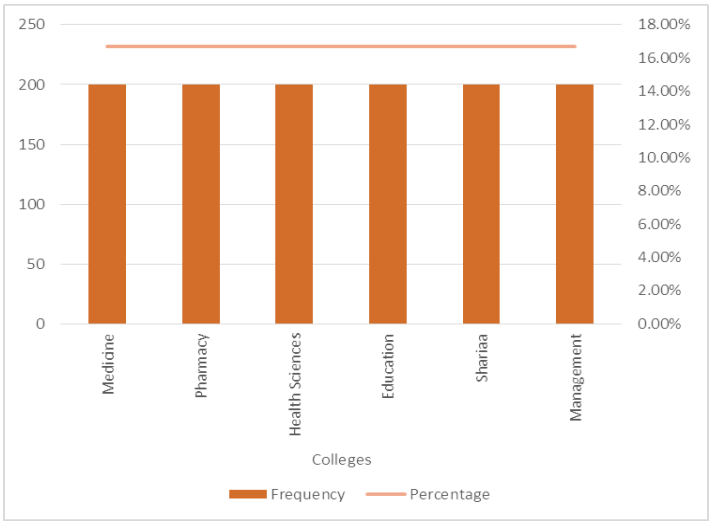

Fig. 3: (Demographic characters) 200 students (16.7%) from each colleges have taken part in their surveys

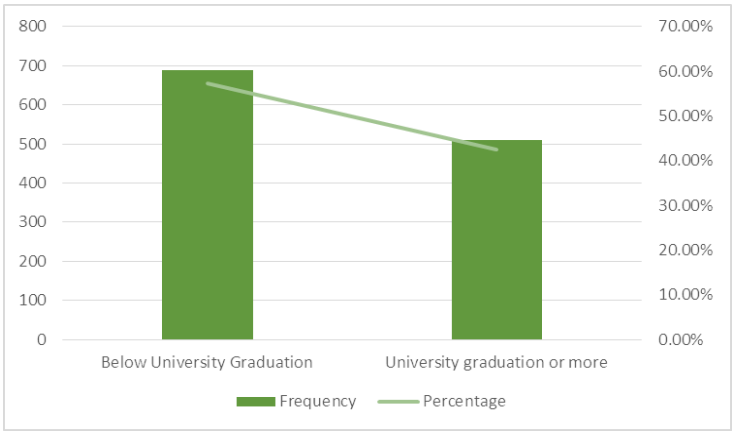

Fig. 3: Based on the education level 689 (57.4%) of student's parents were below the university graduation level and 511 (42.6%) were having gradation level.

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The first section had revealed the importance of establishing awareness workshops related to inherited genetic diseases and its etiology a number of 359 (59.8%) female students were strongly agreed in the establishment of awareness workshops whereas 330 (55 %) of male students were found to be strongly agreed. Although a statistical significance between male and female were not found due to alag of active participation of boys and girls in workshops and educational programs. Awareness aids via distributing the preventives, educational manuals and pamphlets a statistical significance between males 305 (50.8%) and females 353 (58.8%) students were found (P=0.195). A better Statistical significance between male 276 (46 %) and female 281 (46 %) students (P=0.143) were found in using the novel social medias such as Facebook, Twitter, Instagram and YouTube as a preferred tool inawareness towards inherited diseases and its etiology. On the other hand, the classical awareness instruments like TV, Radio were not appreciated much by both male and female. In total 376 (62.7%) of Medical colleges were using new Social media than non-medical student 322 (53.8%) (P<0.002). For the rest of questionnaire other data did not shown any significance between heath and non-health colleges.

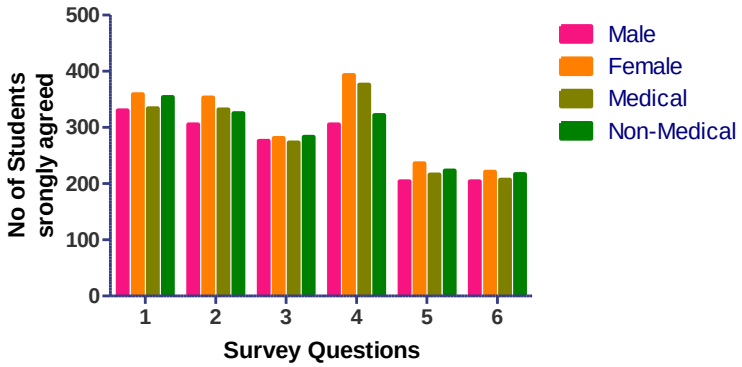

Fig. 4: A graph drawn between the Number of strongly agreed responses from all the four categories of Taif University Students i.e. Male, Female, Medical and Non Medical. The survey Questions were related to the awareness towards genetic disease and its etiology. 1. Need of preventive workshop and other measures 2. University establishing preventives educational program, 3. University distributing booklets and pamphlets, 4. Applications of novel Social media 5. Application of traditional Social media, 6. Using this questioner will enhance the knowledge.

Discussion:

Genetic disorder is a common disease in Saudi Arabia and held responsible for both morbidity and mortality. Present study done to know the level of awareness towards the consanguinity and the genetic diseases inherited among the population of Saudi Arabia.(Jastaniah, 2011) (Weatherall *et al.*, 2006) A royal decree was approved in 2003 for a mandatory premarital screening test followed by a nondirective genetic counseling for Hemoglobinopathies. The decision of marriage was then left to the couples but was applicable for only 2 genetic diseases i.e. sickle cell anemia and thalassemia. The hitch behind, that the hundreds of other existing hereditary diseases which were not included in the national screening program.(Memish and Saeedi, 2011) Taif University is the only institution responsible for higher education in the region and focusing its students towards consanguinity and related genetic diseases.

The data shown in both male and female students who were strongly agreed inneed of preventive workshop, educational Programs and distributing educational pamphlets which explain that the student are willing to know about consanguinity and related inherited disorders. Applications of novel Social media was found to be very effective medium among the male and females such as Facebook, Twitter, Instagram and YouTube both male and female student believed that is very good tool to increase the awareness about inherited diseases and their etiology. This better response is due to revolution of web social media among the adolescents within these recent years. On the other hand, both male and female student has shown a very little interest towards traditional Social media such as TV or Radio may be due to the reason of easily availability of novel social media handy in their mobiles and laptops.

In other correlation, medical students both male and female have shown a better interest in using novel social media as awareness tool in comparison with the non-medical student. This fact can be rationalized on the basis that the medical students have some knowledge towards the subject as their routine study.

Conclusion:

In Saudi Arabia Novel social media are recommended for the awareness of consanguinity and linked inherited diseases as it is highly assessed by the youngsters and appreciated by both the medical and non-medical students.

Conflict of Interests:

The author of the article declares no conflict of interest

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