



Knowledge and attitude on the effects of dermatoglyphics among dental students

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ABSTRACT

Dermatoglyphics is the scientific study of fingerprints, lines, mounts and shapes of hands, as distinct from the superficially similar pseudoscience of palmistry. Dermatoglyphics also refers to the making of naturally occurring ridges on specific body parts, namely palms, fingers, soles, and toes. These are areas where hair usually does not grow, and these ridges allow for increased leverage when picking up objects or walking barefoot. Learning new things and being an informative person have always been the goals of human beings, so coming to know about the human hand was also new information and created a great interest in individuals of various fields. Palms and soles of feet are covered with distinct classes of marks, So the study of fingerprints is called dermatoglyphics. Palmistry is called dermatoglyphics. The fingerprints patterns do not change throughout the lifetime. There are three types of significant fingerprints, Arches, loops, whorls. Dermatoglyphics is majorly used in an investigation. It also helps find a person's uniqueness and helps in personalised education. The study aimed to assess the knowledge about dermatoglyphics among dental students. A questionnaire was designed online using google docs which consisted of 15 questions eliciting knowledge on dermatoglyphics. The study population included dental students. The responses were collected and statistically analysed. The results were partly biased, but on the whole, the dental students were aware of the basic details of dermatoglyphics. The survey concluded the dental students were partly aware, but at the end of the survey, they had got a clear idea about dermatoglyphics and its uses in different fields.



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INTRODUCTION

Dermatoglyphics is the scientific study of fingerprints, lines, mounts and shapes of hands, as distinct from the superficially similar pseudoscience of palmistry. Dermatoglyphics also refers to the making of naturally occurring ridges on specific body parts, namely palms, fingers, soles, and toes. These are areas where hair usually does not grow, and these ridges allow for increased leverage when picking up objects or walking barefoot. Learning new things and being an informative person have always been the goals of human beings, so coming to know

about the human hand was also new information and created a great interest in individuals of various fields (Naffah, 1977). Dermatoglyphics is considered to be an indicator of severe disease. It is a sensitive indicator of intrauterine oddity all have known both dental as well as systemic and as the best available tool for diagnosis in genetic disorders (Natekar and DeSouza, 2006).

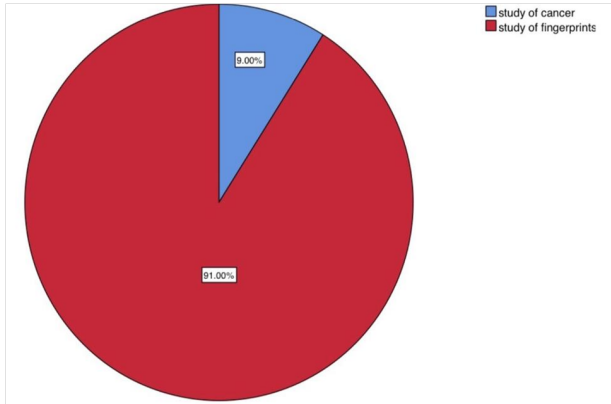


Figure 1: Knowledge among study participants about the term Dermatoglyphics

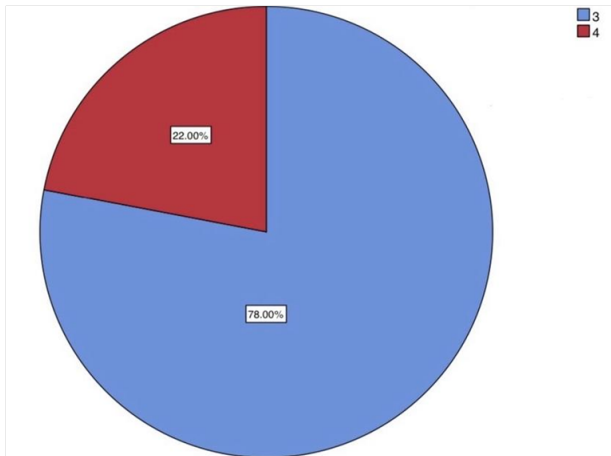


Figure 2: Knowledge among study participants about number of fingerprint patterns present

Genetics and environmental forces play an essential role in the formation and development of an individual's fingerprints. The development of Dermatoglyphic patterns begin to develop in the 6-7th week of pregnancy and is complete by the 20-24th week of gestation. The ridges, mounts are related to polar pads, which are formed by the 6th week of gestation and reaches a maximum size by 12th to 13th week. This means that the genetic message contained in the genome is normal or abnormal is deciphered during this period and is also reflected by Dermatoglyphics (Arora et al., 2015; Selvan and Ganapathy, 2016; Ganapathy, 2016). The analysis of dermatoglyphics is now beginning to prove itself as an

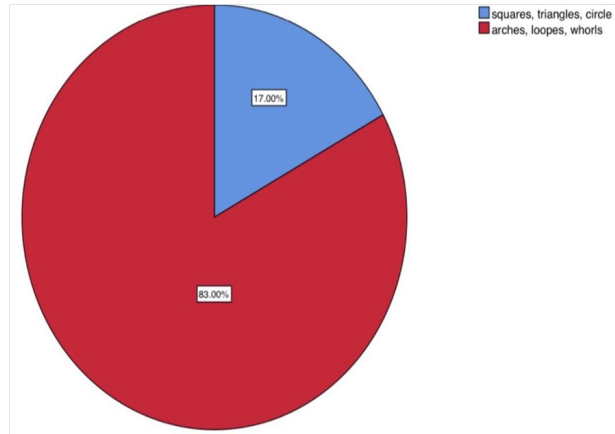


Figure 3: Knowledge of the study participants about the names of the fingerprint patterns

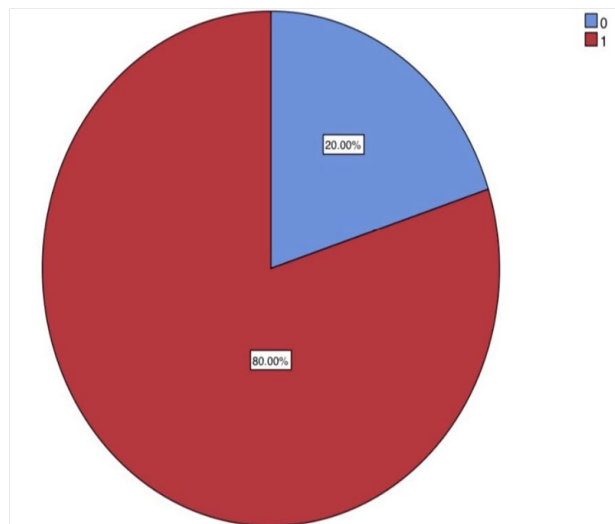


Figure 4: Knowledge among the study participants about the number of triradius present in arches

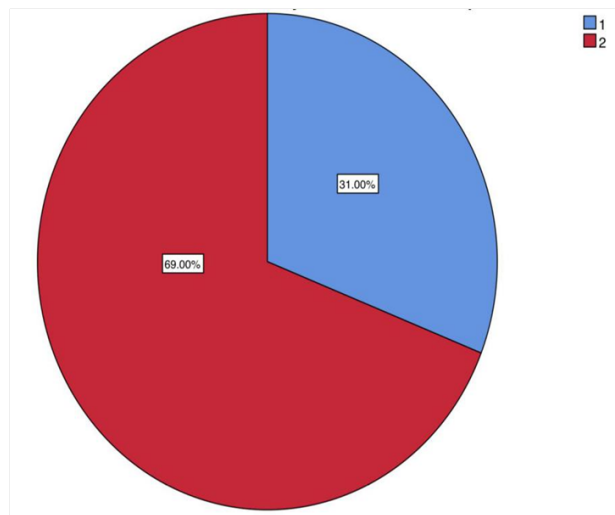


Figure 5: Knowledge among the study participants about the number of triradius present in loops

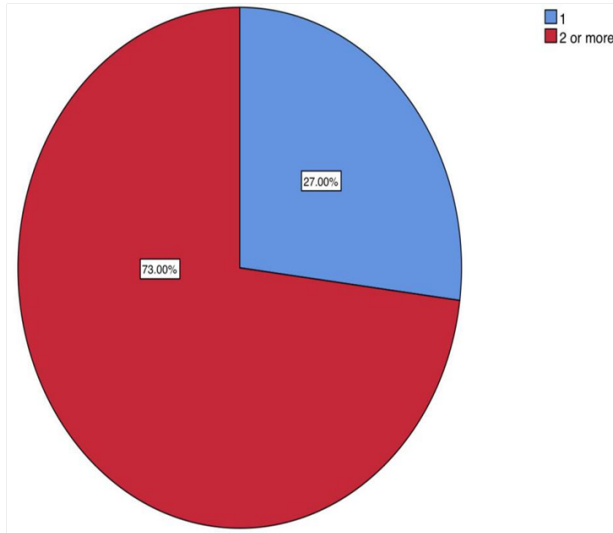


Figure 6: Knowledge among the study participants about the number of triradius present in whorls

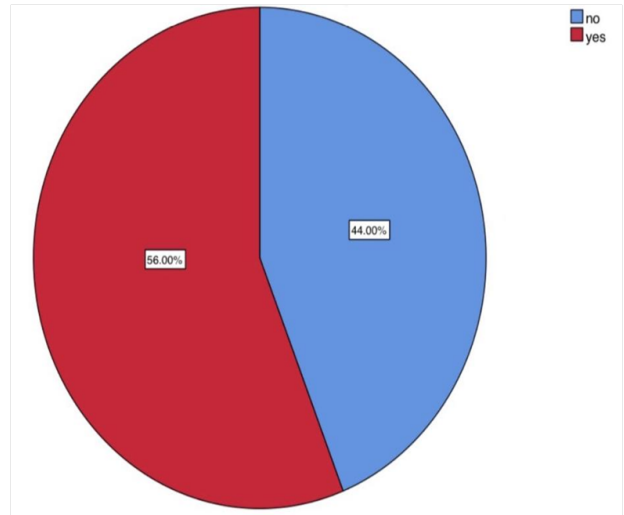


Figure 9: Perception about accurate predictions

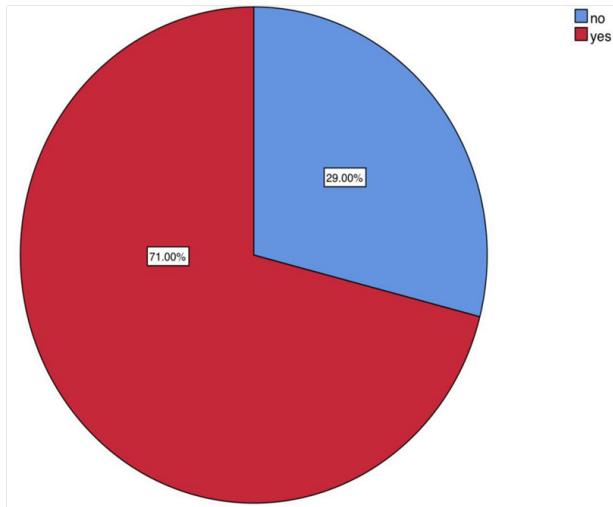


Figure 7: Awareness among study participants about Dermatoglyphics used in crime scenes

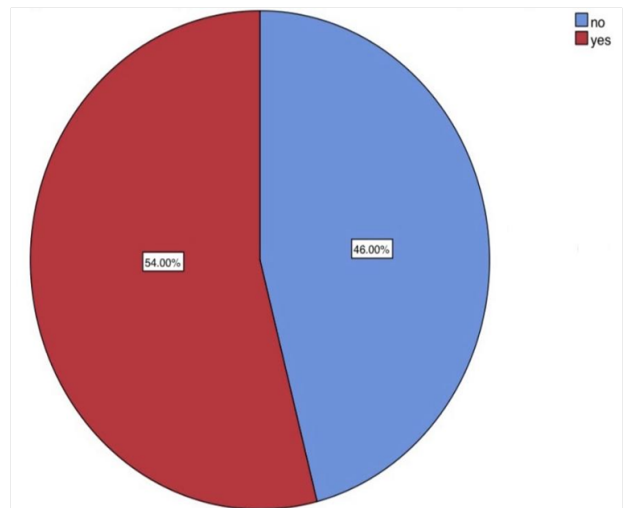


Figure 10: Awareness among study participants about Dermatoglyphics used for predicting the future malocclusion

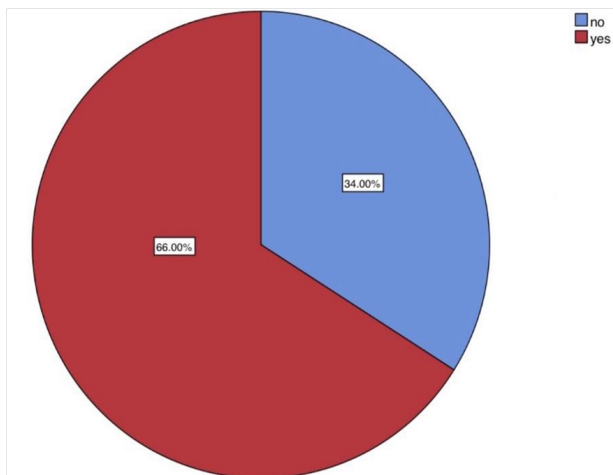


Figure 8: Awareness among study participants about use of Dermatoglyphics to predict disease

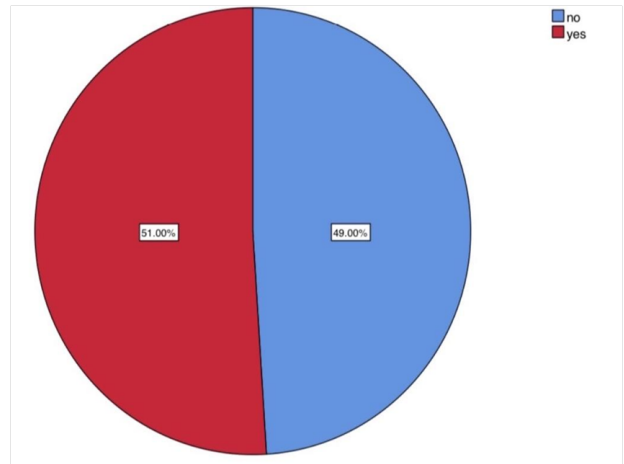


Figure 11: Knowledge about use of Dermatoglyphics by fortune tellers

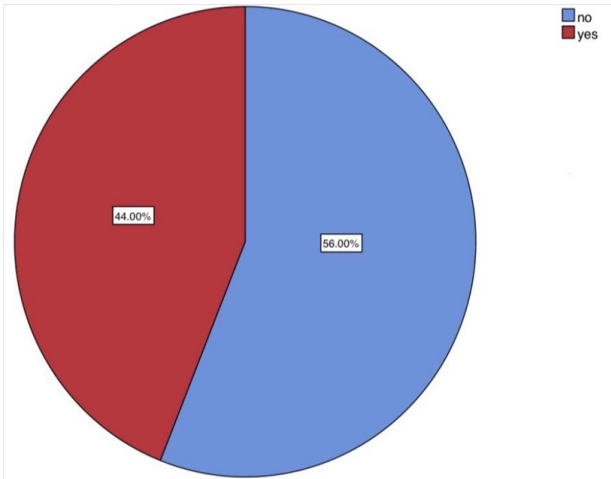


Figure 12: Awareness about Dermatoglyphics used in a child's personal growth

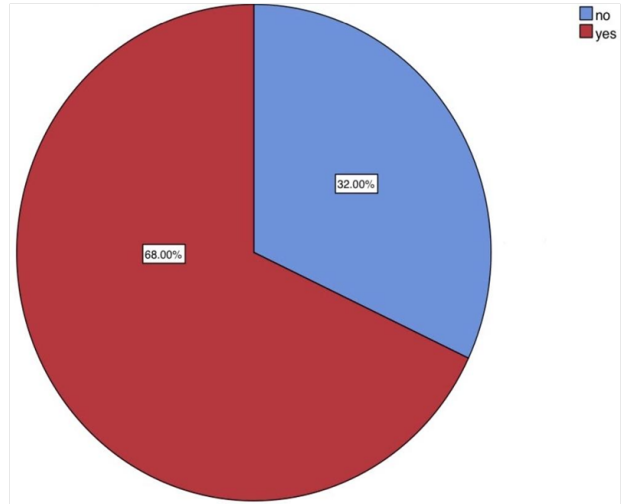


Figure 15: Suggestions about addition of concepts of Dermatoglyphics in our syllabus

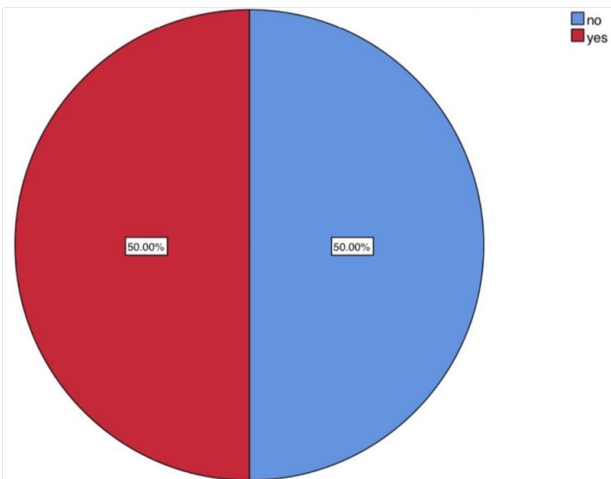


Figure 13: Perceptions of usage of Dermatoglyphics in treating the patients

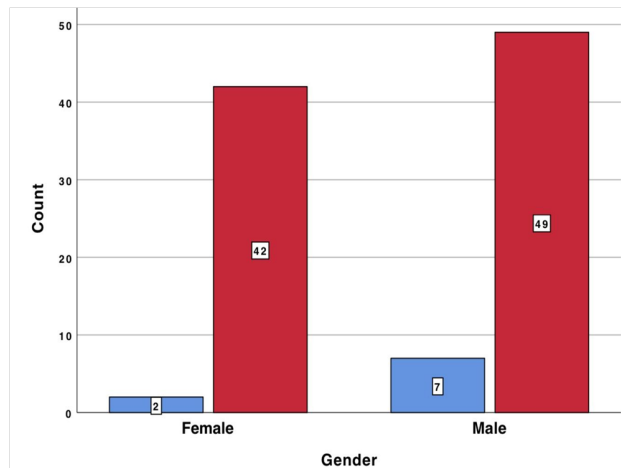


Figure 16: Bar chart represents the association between gender and knowledge about Dermatoglyphics

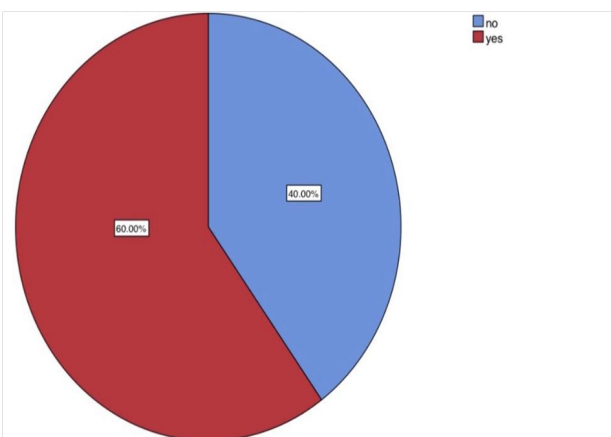


Figure 14: Perceptions about usage of Dermatoglyphics to predict disease which will attack in the future

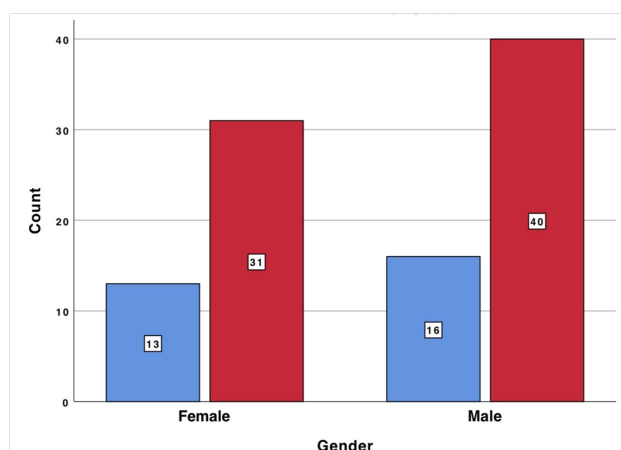


Figure 17: Bar chart represents the association between gender and knowledge about usage of Dermatoglyphics in crime scenes

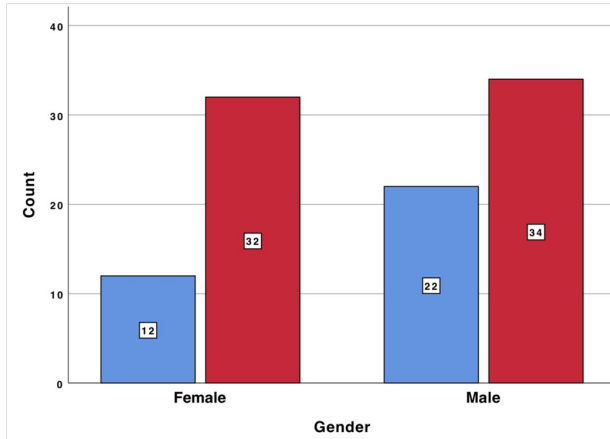


Figure 18: Bar chart represents the association between gender and knowledge about usage of Dermatoglyphics in predicting disease

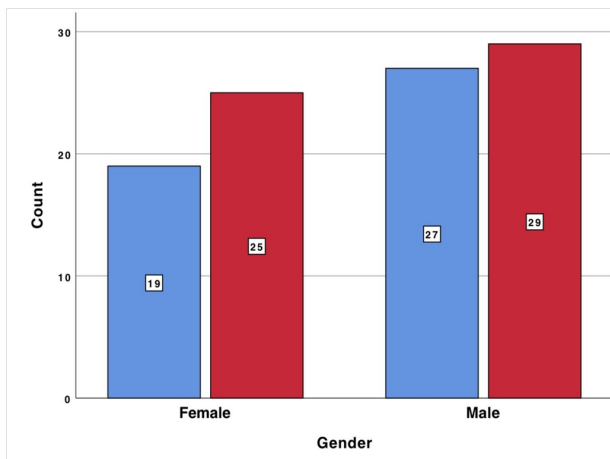


Figure 19: Bar chart represents the association between gender and knowledge about usage of Dermatoglyphics in predicting the future malocclusion

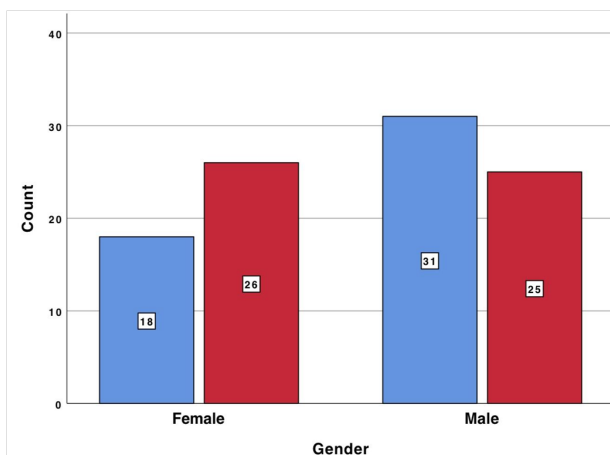


Figure 20: Bar chart represents the association between gender and knowledge and belief about Dermatoglyphics used by fortune tellers

extraordinarily useful tool for a preliminary investigation into condition with a suspected genetic basis. In many aspects, it has been used as a marker of disease and the prediction tool in many fields (Girish et al., 2013).

The basis of considering the dermatoglyphic pattern as an indicator of the upcoming fingerprints has a secure connection with the enamel and the palate present in the oral cavity, most susceptible tissues to dental caries all of which have the characteristics of forming at the same time during the beginning of life. Thus when an IU dermal damage an effect to any of the tooth will be seen eventually (Schaumann and Alter, 2012). As Dermatoglyphic prints or patterns do not change during the whole life, once it is formed it never changes at all which helps in the diagnosis of dental disease such as dental caries (Chinmaya et al., 2016).

Dermatoglyphics has drawn attention in the field of dentistry. It has come to unveil various pathological conditions and genetic abnormalities such as dental caries, periodontal disease, oral submucous fibrosis, cleft lip and palate, malocclusions, Down syndrome and Klinefelter’s syndrome (Balgir, 1993), Taking an instance of dental caries it is found that individuals with patterns such as plain loop, double loop, arch with a whorl, tented arch, central pocket loop have a high susceptibility to dental caries. Furthermore, since dermatoglyphics are generally controlled characteristics, any deviation from the regular feature indicates a genetic abnormality (Kumar et al., 2019). The study aimed to assess the knowledge about dermatoglyphics among dental students.

MATERIALS AND METHODS

The study setting is based on an online survey, and the dental students participated. Approval has been done through Institutional Review Board-SRB of Saveetha Dental College. Two people involved, one primary investigator and the guide. The sample size of this study is 100, which was based on power analysis. The Sampling method is randomised, and the measure taken to minimise bias is randomisation and running the review through a second reviewer. A questionnaire was designed online using google docs which consisted of 15 questions eliciting knowledge on dermatoglyphics. The study population included dental students. The responses were collected and statistically analysed.

RESULTS AND DISCUSSION

After the data was collected, it was statistically analysed, and the graphs obtained.

Figure 1 was about what is dermatoglyphics and 91% of the students answered that it is the study of fingerprints. 91% answered study of fingerprints (red) and 9% answered study of cancer (blue). Figure 2 was about how many fingerprint patterns are present, 78% of students answered as three types. 78% answered 3 (blue) and 22% answered 4 (red). Figure 3 was about what are the fingerprint patterns in particular 83% of the students answered that they are arches, loops, whorls. 83% answered as arches, loops, whorls are the fingerprint patterns (red), 17% answered as squares, triangles, circles (blue). Figure 4 about the no. of triradius present in the arch, 20% answered as 0, 80% answered 1 (red) and 20% answered 0 (blue). Figure 5 about triradius of loops, 31% answered as 1, 31% answered 1 (blue) and 69% answered 2 (red) and Figure 6 about triradius of whorl for which 73% answered 2 or more. 27% answered 1 (blue) and 73% answered 2 or more (red). So we came to know that the students weren't well aware of the triradius present in the fingerprint patterns. Figure 7 about the knowledge the students had about dermatoglyphics used in crime scenes, 71% of students were aware. 71% were aware (red) and 29% were unaware (blue). Figure 8 was about dermatoglyphics used in predicting disease; 66% of students were aware that dermatoglyphics is used to predict diseases. 66% were aware (red) and 34% were unaware (blue). Figure 9 shows the perception of accurate predictions. 56% responded yes, and 44% responded no. 56% responded yes (red) and 44% responded no (blue).

Figure 10 was about the knowledge that dermatoglyphics is used to predict the future malocclusion, and 54% of students were aware of it. 54% were aware (red) and 46% were unaware (blue). Figure 11 was about fortune-tellers predicting using Dermatoglyphics 51% of students believe and support it. 51% support and believe (red) and 49% do not believe (blue). Figure 12 was about the dermatoglyphics used in a child's personal growth; only 44% of the students agreed to it. 44% were aware (red) and 56% were unaware (blue). Figure 13 was about using dermatoglyphics to treat patients, so 50% of answers were the students use it to treat patients. 50% support (red) and 50% do not support. Figure 14 about the future use of dermatoglyphics to predict disease, 60% of the students answered that it should be used, 60% respondents support (red) whereas 40% respondents do not support (blue). Figure 15 about the inclusion of information about dermatoglyphics in our syllabus where 68% of the students agreed to it. 68% suggested yes (red) and 32% suggested a no (blue).

Figure 16 represents an association between gender and the knowledge about what is dermatoglyphics, and it was found statistically non-significant by chi-square test. Chi-square test was done, and the association was found not to be statistically significant. Pearson's Chi-square value: 0.305, DF:1, P-value: 0.58 (> 0.05) hence not significant.

Figure 17 represents an association between gender and knowledge about dermatoglyphics used in crime scenes, and it was found statistically significant by chi-square test. Chi-square test was done, and the association was found to be statistically significant. Pearson's Chi-square value: 4.632, DF:1, P-value: 0.031. Statistically significant.

Figure 18 is an association between gender and knowledge about dermatoglyphics used in prediction of disease; it was found statistically non-significant by chi-square test. Chi-square test was done, and the association was found to be statistically non-significant. Pearson's Chi-square value: 0.300, DF:1, P-value: 0.584. Statistically non-significant.

Figure 19 is an association between gender and knowledge about dermatoglyphics used in predicting future malocclusions, and it was found statistically non-significant by chi-square test. Chi-square test was done, and the association was found to be statistically non-significant. Pearson's Chi-square value: 0.076, DF:1, P-value: 0.782. Statistically non-significant.

Figure 20 represents an association between gender and knowledge about dermatoglyphics used by fortune-tellers, and it was found statistically non-significant by chi-square test. Chi-square test was done, and the association was found to be statistically non-significant. Pearson's Chi-square value: 1.093, DF:1, P-value: 0.296. Statistically non-significant.

Dermatoglyphics used in crime scenes was agreed, and 71% of students were aware of it, previous studies show that 64% of people only were aware of its use (Canter and Alison, 1997). Dermatoglyphics used to predict diseases, the students (66%) were aware it is used, and the previous studies done 56% of the people were only aware of it. (Cummins and Midlo, 1976). About predicting malocclusion, 54% were aware, according to a previous study, 40% only were aware (Eslami et al., 2016; Basha et al., 2018). About fortune tellers, 51% of the students supported it, and in the previous study, 77% of the people supported (Asif et al., 2017).

Dermatoglyphics can be used in all medical fields for predicting the disease. It also is used in vari-

ous places like crime scenes, by fortune tellers, for predicting a child's personality and in many other places. Though it is being used in many fields, the idea about dermatoglyphics has not reached the common people yet.

CONCLUSION

The survey concluded the dental students were partly aware, but at the end of the survey, they had got a clear idea about dermatoglyphics and its uses in different fields. More awareness programme and public opinion surveys can change this perspective so dermatoglyphics will be used by everyone in a wide range which will bring on positive effects among the people. So, at the end of this survey, the respondents become well aware of dermatoglyphics through this survey.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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