

Section

Pathology

Original

Article

Knowledge, Perception and Beliefs Regarding Androgenic alopecia among Young Adults in Karachi, Pakistan

Naseem Ahmed^{1*}, Bilal Ahmed Khan², Syed Wasif Bukhari², Khawaja Uzair Wasif², Kiran Shafiq Khan², Osama Shabbir², Maaz Bin Nazir², Ashar Shahid²

¹Department of Pathology, Dow Medical College, Dow University of Health Sciences, Karachi, Pakistan.

²Medical College, Dow University of Health Sciences, Karachi, Pakistan

ABSTRACT

Background: Our study aims to assess the knowledge, attitudes and practices regarding Male Pattern Baldness among young adults in Karachi, Pakistan.

Methods: A cross sectional study was conducted, using a self-administered questionnaire, finalized after a pilot study and after reviewing several articles on the topic. A random population of 673 young adult men, more than our target of 664, calculated through openepi.com with 99% confidence, from Karachi were involved. Convenient sampling technique was used. The participants were enquired regarding their general knowledge regarding MPB, the impact of male pattern baldness on psychosocial health and self-esteem of an individual, and their practices.

Results: Out of the 673 participants, there were 299 (44.45%) participants between the ages of 17-21 and 374 (55.5%) between the ages of 22-26. There was a slight gap of knowledge between the age groups. A majority of individuals [545 (80.9%)] from our study had heard of male pattern baldness before. More than half of the participants thought that people with MPB are considered unattractive [346 (51.4%)] and majority, 482 (71.6%) people thought that MPB causes depression and anxiety. A larger portion of the people that took part (71.9%) reported that they suffer from hair-fall problems. A majority of people [575 (85.4%)] felt that there is need for more awareness programs in Pakistan.

Conclusions: Majority of the partakers generally had poor knowledge regarding causes of MPB, affected age groups and the role of genetics. However, they recognized its negative impact on social, emotional and psychological health. More researches are needed to be conducted in Karachi on MPB.

Keywords: Alopecia, Depression, Dihydrotestosterone, Finasteride, Hair follicle, Minoxidil, Transplantation

Available Online: 30th March 2020

Received: 25.01.20

Accepted: 02.02.20

*Corresponding Author

Dr. Naseem Ahmed
Professor
Department of Pathology
Dow Medical College,
Dow University of Health Sciences,
Karachi, Pakistan
Email: dmasim@hotmail.com

Copyright: © the author(s). IABCR is an official publication of Ibn Sina Academy of Medieval Medicine & Sciences, registered in 2001 under Indian Trusts Act, 1882.




This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial

INTRODUCTION

Patterned hair loss, commonly referred to as androgenic alopecia (AGA), is a highly prevalent natural condition, and being easily noticeable, causes it to have a distinct association with psychosocial morbidity. It is the most common cause of hair-loss in both sexes.¹ In Caucasian males particularly, it may affect up-to one-third of the global population by the age of thirty, incrementally enveloping half of all males by the age of 50.² The incidence of early onset male pattern baldness (MPB) is also prominent: 20% of Caucasians aged 20 have noticeable amounts,³ with 16% of

the 18 to 29 age range having severe MPB (Norwood type III or greater).⁴ Southern Asia shows a familiar picture; in a study by Shankar et al.⁵ 58% of Indian males aged 30 to 50 (out of 105) showed MPB, predominantly of Norwood type II,⁶ (MPB is categorized most commonly by the Norwood Classification).⁷ AGA starts to be noticed clinically by the age of 17 in the normal male.⁸ A study in Singapore, Tang et al.⁹ showed an incidence of 63% amongst 254 males, of which

| Access this article online | |
|---------------------------------|--|
| Website: www.iabcr.org | Quick Response code  |
| DOI: 10.21276/iabcr.2020.6.1.16 | |

How to cite this article: Ahmed N, Khan BA, Bukhari SW, Wasif KU, Khan KS, et al. Knowledge, Perception and Beliefs Regarding Androgenic alopecia among Young Adults in Karachi, Pakistan. Int Arch BioMed Clin Res. 2020;6(1):PA1–PA6.

Source of Support: Nil, **Conflict of Interest:** None

32% was attributed to the 17-26 age group. Notably, there is a lack of such comprehensive figures for Pakistan.

MPB is physiological and a non-scarring hair loss follows; regression of hair follicles occurs due to the interaction of dihydro-testosterone with dermal papilla cells, but does not cause disappearance of follicular openings.¹⁰ Susceptibility to MPB is owed to polygenic inheritance, majorly involving the X¹¹ and 20th chromosome.¹² Factors such as stress¹³ and poor dietary intake of niacin, protein and soy¹⁴ are also known to aggravate the condition. The predominant Norwood-Hamilton grading scale describes the progressive hair loss as an initial hairline recession frontally coupled with temporo-parietal loss, which eventually converges with a thinning vertex, leading to follicles being retained only bi-temporally and occipitally. Diagnosis is exclusively clinical; an extensive history is taken to rule out other pathologies, as well as to commonly illustrate a positive familial history. Treatment options for MPB includes topical minoxidil (5% solution for men),¹⁵ and oral finasteride (1 mg),¹⁶ though surgical options such as follicular unit extraction¹⁷ and low-level laser therapy,¹⁸ are also preferable. Although, it seems harmless, MPB has been shown to be associated with Amyotrophic Lateral Sclerosis (ALS),¹⁹ colorectal carcinoma,²⁰ benign prostatic hyperplasia plus prostatic cancer.²¹ Patients of MPB suffer from decreased self-assurance and quality of life, which ultimately culminates in psychological issues such as depression; the earlier the onset the stronger the emotion.²² Despite the significance of this topic, very few researches have been published altogether and there is a severe paucity of literature regarding AGA in Pakistan, specially an understanding of where the population stands in regards to their knowledge and comprehension of the topic. Thus, the primary aim of this research is to provide insight into the knowledge, attitudes and practices of young males regarding AGA. Hopefully, this will also serve as both a stimulation and starting point for future studies on the subject and make the society realize of the connection between MPB and psychosocial conduct and well-being of a person.

METHODS

A cross sectional study, based in the city of Karachi, Pakistan, was conducted. Data was collected throughout a period of 3 months, between May 2018 and August 2018. The study aimed to evaluate the knowledge, attitude and practices of young-adult male students (aged 17 to 26), from multiple educational backgrounds, within the urban areas of Karachi, regarding the topic of Male Pattern Baldness (MPB). The target population was a random sample of 664 young-adult men, with 99% confidence, calculated through openepi.com, but due to an overwhelming response 725 questionnaires were collected. Convenient sampling technique was used to select the target population. This included (but was not limited to) universities of medicine, commerce, engineering, arts and media etc. Few people who had completed their education and were hired at various places, were also recruited. All were residents of the city of Karachi. 21 refused to participate while 31 left the questionnaire incomplete. Only 673 questionnaires were considered for the data analysis after removing the aforementioned 31 incomplete ones. Thus, the refusal rate was 2.89%, whereas the non-response rate was 4.27%. Verbal consent was taken from the participants before a one-on-one interview, and they were explicitly made aware of

their right to leave at any point, as per their will. Those who filled the forms digitally had to either fill them completely or ignore it altogether.

The data collection tool employed, was a self-administered questionnaire in English, which was designed by reviewing several relevant articles on the topic and was validated by conducting a pilot study and rectifying the flaws in it. Restrictions placed, included the fact that the participants had to be males, within an age range of 17 to 26 years, residents of one of the urban areas of Karachi for a minimum of 6 months, understood English, and were currently associated with a college/university within the city. All those who were studying outside Karachi, were under 17 or greater than 26 years of age, or female, were ruled out. To nullify interview bias, participants were asked identical questions during their interviews. The distribution of the questionnaires, as well as the conductance of the interviews, were done by each member of the research team, thereby eliminating interviewer bias. The questionnaire itself did not demand the names of the participants, and confidentiality of the data was strictly maintained, to make sure there was no response bias. Initially, a pilot study was conducted, and changes were made to the questionnaire accordingly. The final structured questionnaire had a total of 33 questions, divided under four headings, namely Bio-data, Knowledge, Attitude and Practices, hence focusing solely on the main aims and objectives of the research. Data regarding participants' age groups, marital status and names of associated institutes was extracted, followed by inquiries assessing knowledge about risk factors, causes, patterns, treatments and general facts regarding MPB. The questions under the heading of attitude emphasized on the psychosocial effects of MPB on young male adults, especially its impact on their self-esteem, confidence and overall lifestyle. Questions focusing on practices implemented by individuals in regard to prevention, treatments and medical interventions associated with MPB, were asked, and the level of satisfaction regarding them, assessed.

The questionnaires were manually and digitally checked to ensure accuracy and integrity. The sample size required for this study was 664, with 99% confidence, which was calculated using openepi.com. Data analysis was carried out using SPSS v.23.0. Frequencies and percentages were calculated for the categorical responses. Chi-square test was applied to evaluate the difference amid the categorical responses of the males fitting into two different age groups.

RESULTS

The study was confined to 673 participants; almost an equal number [299 (44.45%)] participants from the age group 17-21, while 374 (55.5%) from the age group 22-26 were included. Most of them [625 (92.5%)] were unmarried, while 50 (7.4%) were married. (Table no. 1)

128(19.1%) participants had never heard of male pattern baldness before, however, a majority of individuals [545 (80.9%)] demonstrated varying levels of awareness about the condition. Friends and family [274 (40.7%)], and the internet [261 (38.8%)], proved to be the most popular sources of their knowledge. In regard to the age group MPB effects the most, when given the choice to mark more than one option, nearly half of the sample [325(48.3%)], opted for the 31-50 age group. A large bulk of individuals [418 (62.1%)], thought increasing age to be a predisposing factor for MPB and 332 (49.3%) participants said that having an

immediate family member with MPB increases its risk; 206 (30.6%), however, had no knowledge about these factors. Furthermore, an overwhelming majority [508 (75.4%)] knew someone with excessive hair loss due to MPB and concurrently, 482 (71.6%) participants felt that the general public does not have sufficient awareness regarding MPB. A large portion [282 (41.9%)] either did not know whether hair loss is followed by scarring, while others [248 (36.8%)] responded that it was not. A great proportion of the participants [423 (62.8%)] were not aware that losing up to a 100 hair strands a day is a normal, physiological process. 405 (60.2%) participants believed hair transplants to be the treatment of choice for MPB, but alongside this, more than half of individuals [387 (57.5%)] held the view that any treatment of MPB is expensive. Most people stated that MPB mostly affects the top [322 (47.8%)] and front [250 (37.1%)] of the head. Regarding the causes of MPB, participants could choose more than one factor. A diverse outcome was seen with 345 people (51.3%) marking Genetics (Family History) to be the greatest cause, 280(41.6%) marking stress, while all other causes were marked by less than 30% people each. (Table no. 2)

An interesting extrapolation was that 442 (65.6%) individuals concurred that MPB has increased in prevalence amongst young adults in Pakistan. Additionally, 470 (69.8%) participants believed that MPB is associated with anxiety and depression in young people, and 482 (71.6%) felt that individuals with MPB looked older than their actual age. 439 (65.2%) considered going to a doctor if they observed hair-fall themselves, and almost half [364 (54%)] mentioned that they knew of MPB sufferers that avoided taking photographs, due to their increased self-consciousness regarding their appearances. Parallel to this, more than half of the participants agreed that those with MPB are often bullied 367 (54.5%), and 346 (51.4%) said that baldness is considered unattractive by the populace. Correspondingly, 427 (63.4%), felt people with MPB hide their scalps with caps, wigs etc. In almost half of the participant's viewpoints, MPB plays a negative role in the stability of relationships, but a sizable chunk [200(29.7%)] were uncertain regarding this viewpoint. It is to be noted that more than one third of individuals [259 (38.5%)] stated that they were likely to suffer from MPB at some point in the future, whereas 273 (40.6%) were unsure. When asked whether sufferers are reluctant to talk about their situation and if early diagnosis of MPB can result in effective management, half of the participants agreed, however, a moderately large population, 244 (36.3%) and 217(32.2%) respectively were unsure on the aforementioned topics. Nonetheless, a sizable majority of our participants [575 (85.4%)] felt that there is a need for more education and awareness programs in Pakistan regarding MPB. (Table no.3)

447 (66.4%) individuals had never visited a doctor for any sort of hair related problems, but 286 (42.5%) had. 387 (57.5%) people had not used any means to prevent hair fall, with all the stated justifications being almost equally important. Almost an equal number of participants [300 (44.6%)] cut their hair short in order to deal with MPB, while 373 (55.4%) did not do so. A greater number of people [451 (67.0%)] have never completely shaven their heads, as a means of looking attractive despite suffering from MPB. 235 (35%) participants have noticed clumps of hair breaking away, either in their hands or combs and 211 (31.4%) noticed fallen hair on towels when drying off after a bath. (Table no.4)

Males from the age group 22-26, significantly marked that MPB has an expensive treatment ($p=0.015$), its risk increases with age ($p < 0.001$) and that, they knew someone with excessive hair loss due to MPB ($p < 0.001$). Whereas more people from the age group 17-21 chose that having an immediate family member with MPB increases its risk ($p < 0.001$). Age was also positively associated with knowledge about causes, treatment options and the age group MPB effects ($p < 0.001$). Significantly more people from age group 22-26 years also practiced the modern day fashion of bald look, used different means to prevent hair loss and had visited the doctor for hair fall complains ($P < 0.001$), while significant individuals from age group 17-21 said they had cut their hair short, to prevent hair loss ($P < 0.001$). Age was also significantly associated for the responses that public don't have enough knowledge of MPB ($p=0.026$) and the hair loss is not followed by scarring and majority didn't knew that losing 100 strand of hair per day is a normal physiological response ($P=0.014$).

When their attitudes were compared with age groups, more individuals from the age group 22-26 thought: MPB have become prevalent among the young adults ($p < 0.001$), bald people are considered unattractive ($p=0.013$), are often bullied ($p=0.026$), suffer from depression ($p < 0.001$), look older than their real age ($p < 0.001$), avoid clicking photos of the fear of not coming good ($p=0.001$), hide their scalp by wearing a cap ($P=0.001$) and would consider of going to a doctor for hair fall complains ($p < 0.001$). Side by side, individuals from age group 17-21 significantly thought: MPB have a negative effect on relationships ($p=0.034$), sufferers are not willing to talk about their situation ($p < 0.001$) and early diagnosis of MPB may lead to effective management ($p < 0.001$).

Table: -1 Bio-data

| Age group | Frequency |
|----------------|--------------|
| 17-21 | 299 (44.45%) |
| 22-26 | 374 (55.5%) |
| Marital Status | |
| Unmarried | 623 (92.5%) |
| Married | 50 (7.4%) |

Table: -2 Knowledge regarding Male pattern baldness

| | | 17-21 | 22-26 | P-value |
|---|--------------------|-------------|-------------|---------|
| Have you heard of male pattern baldness? | Yes | 277 (50.8%) | 268 (49.2%) | <0.001 |
| | No | 22 (17.2%) | 106 (82.8%) | |
| Does age increase the risk of MPB | Yes | 167 (40%) | 251 (60%) | <0.001 |
| | No | 33 (55%) | 27 (45%) | |
| | Don't know | 99 (50.8%) | 96 (49.2%) | |
| From where you heard of male pattern baldness | | | | 0.056 |
| | Internet | 179 | 82 | |
| | TV | 82 | 99 | |
| | Books | 85 | 50 | |
| | Friends and family | 156 | 118 | |
| | School and college | 99 | 36 | |
| | Other | 35 | 39 | |
| What age group does MPB affect | | | | 0.017 |

| | | | | |
|--|--|-------------|-------------|--------|
| | Above 50 | 111 | 87 | |
| | 31-50 | 125 | 200 | |
| | 17-30 | 84 | 84 | |
| | Below 17 | 20 | 26 | |
| | Don't know | 77 | 28 | |
| Cause of MPB | | | | |
| | Genetic / family history | 125 | 220 | |
| | Stress | 195 | 85 | |
| | Poor diet | 99 | 87 | |
| | Medicine/ drug intake | 36 | 99 | |
| | Excessive use of shampoo, hair spray and gel | | | |
| | Lack of sleep | 95 | 90 | |
| | Hormones | 87 | 100 | |
| | Dandruff | 76 | 91 | |
| | Masturbation | 33 | 63 | |
| | All of the above | 24 | 84 | |
| Which part of scalp is more effected | | | | |
| | Sides | 55 | 71 | |
| | Top | 214 | 108 | |
| | Front | 158 | 92 | |
| | Back | 55 | 36 | |
| | Don't know | 70 | 65 | |
| Do you know anyone with excessive hair loss due to MPB | Yes | 184 (36.2%) | 324 (63.8%) | <0.001 |
| | No | 115 (69.7%) | 50 (30.3%) | |
| What are the treatment options for MPB | | | | 0.045 |
| | Hair Transplant | 212 | 193 | |
| | Topical Minoxidil | 94 | 45 | |
| | Oral Finasteride | 44 | 42 | |
| | Vitamin Supplements | 66 | 151 | |
| | Use of oils | 96 | 139 | |
| | Low level laser therapy | 33 | 24 | |
| | Cultural remedies (use of aloe vera, onion juice, ginger garlic paste etc) | 94 | 54 | |
| Do you think treatment for MPB is expensive | Yes | 122 (31.5%) | 265 (68.5%) | 0.015 |
| | No | 43 (53.8%) | 37 (46.3%) | |
| | Don't know | 134 (65%) | 72 (35%) | |
| Do you feel that public has enough knowledge on MPB | Yes | 15 (14.7%) | 87 (85.3%) | 0.026 |
| | No | 254 (52.7%) | 228 (47.3%) | |
| | Don't know | 30 (33.7%) | 59 (66.3%) | |
| Is the hair loss followed by scarring | Yes | 21 (14.7%) | 122 (85.3%) | <0.001 |
| | No | 125 (50.4%) | 123 (49.6%) | |
| | Don't know | 153 (54.3%) | 129 (45.7%) | |
| Do you think having an immediate family member with MPB increases its risk? | Yes | 223 (67.2%) | 109 (32.8%) | <0.001 |
| | No | 28 (20.7%) | 107 (79.3%) | |
| | Don't know | 48 (23.3%) | 158 (76.7%) | |
| Did you know losing up-to 100 hairs strands a day is normal and not indicative of any hair disease | Yes | 130 (52%) | 120 (48%) | 0.014 |
| | No | 169 (40%) | 254 (60%) | |

Table: -3 Perception regarding male pattern baldness

| | | 17-21 | 22-26 | p-value |
|---|-------|-------------|-------------|---------|
| Do you think you are likely to suffer from MPB in future | Yes | 115 (44.4%) | 144 (55.6%) | <0.001 |
| | No | 23 (16.3%) | 118 (83.7%) | |
| | Maybe | 161 (59%) | 112 (41%) | |
| Do you think MPB have become prevalent amongst the young adults? | Yes | 185 (41.9%) | 257 (58.1%) | <0.001 |
| | No | 21 (21.6%) | 76 (78.4%) | |
| | Maybe | 93 (69.4%) | 41 (30.6%) | |
| Do you think bald people are consider unattractive | Yes | 80 (23.1%) | 266 (76.9%) | 0.013 |
| | No | 140 (82.8%) | 29 (17.2%) | |
| | Maybe | 79 (50%) | 79 (50%) | |
| Do you think people with MPB are often bullied | Yes | 98 (26.7%) | 269 (73.3%) | 0.026 |
| | No | 87 (69%) | 39 (31%) | |
| | Maybe | 114 (63.3%) | 66 (36.7%) | |
| Do you think people with MPB are not willing to talk about their situation | Yes | 189 (64.1%) | 106 (35.9%) | 0.002 |
| | No | 18 (13.4%) | 116 (86.6%) | |
| | Maybe | 92 (37.7%) | 152 (62.3%) | |
| Do you think MPB leads to anxiety and depression in young people | Yes | 252 (53.6%) | 218 (46.4%) | <0.001 |
| | No | 19 (24.4%) | 59 (75.6%) | |
| | Maybe | 28 (22.4%) | 97 (77.6%) | |
| Do you feel there should be more education and awareness programs regarding MPB in Pakistan | Yes | 281 (48.9%) | 294 (51.1%) | <0.001 |
| | No | 9 (23.1%) | 30 (76.9%) | |
| | Maybe | 9 (15.3%) | 50 (84.7%) | |
| Do you think MPB has a negative effect on relationships | Yes | 176 (52.7%) | 158 (47.3%) | 0.034 |
| | No | 104 (74.8%) | 35 (25.2%) | |
| | Maybe | 19 (9.5%) | 181 (90.5%) | |
| Do you think people with MPB look older than our real age Do you think people with MPB look older than our real age | Yes | 207 (42.9%) | 275 (57.1%) | <0.001 |
| | No | 47 (56%) | 37 (44%) | |
| | Maybe | 45 (42.1%) | 62 (57.9%) | |
| Do you think early diagnosis of MPB can result in effective management | Yes | 241 (63.9%) | 136 (36.1%) | <0.001 |
| | No | 18 (22.8%) | 61 (77.2%) | |
| | Maybe | 40 (18.4%) | 177 (81.6%) | |
| Would you consider going to a doctor if you see visible signs of MPB | Yes | 192 (43.7%) | 247 (56.3%) | <0.001 |
| | No | 39 (40.2%) | 58 (59.8%) | |
| | Maybe | 68 (49.6%) | 69 (50.4%) | |
| Do people with MPB avoid clicking photos due to fear of not coming good | Yes | 180 (49.5%) | 184 (50.5%) | 0.001 |
| | No | 89 (69%) | 40 (31%) | |
| | Maybe | 30 (16.7%) | 150 (83.3%) | |
| Do people with MPB hide their scalp by wearing a cap/ wig/ Bandana etc | Yes | 189 (44.3%) | 238 (55.7%) | 0.001 |
| | No | 13 (16.5%) | 66 (83.5%) | |
| | Maybe | 97 (58.1%) | 70 (41.9%) | |

Table: 4 (Beliefs regarding Androgenic alopecia)

| | | 17-21 | 22-26 | P-value |
|---|--|-------------|-------------|---------|
| Have you ever visited a doctor for any sort of hair problem | Yes | 34 (15%) | 192 (85%) | 0.02 |
| | No | 265 (59.3%) | 182(40.7%) | |
| Have you ever used any means to prevent hair loss | Yes | 82 (28.75) | 204 (71.3%) | <0.001 |
| | No | 217 (56.1%) | 170 (43.9%) | |
| Not use any mean to prevent hair loss because | | | | 0.021 |
| | Not old enough to be consider at the risk for MPB | 55 | 80 | |
| | Do not have enough knowledge on MPB | 44 | 109 | |
| | No family history | 88 | 72 | |
| | Expensive treatment | 54 | 49 | |
| | No hair fall complaint | 75 | 122 | |
| Have you ever noticed | | | | 0.045 |
| | A bunch of hair coming in your hand or comb while setting your hairs | 112 | 99 | |
| | Hairs on your towel when drying your head after bath | 85 | 75 | |
| | Hairs on the pillow after sleeping | 98 | 47 | |
| | All of the above | 67 | 47 | |
| | Never notice any major kind of hair fall | 110 | 125 | |
| | | | | |
| Do you cut your hair short to prevent hair loss | Yes | 158 (52.7%) | 142 (47.3%) | <0.001 |
| | No | 141 (37.8%) | 232 (62.2%) | |
| Have you tried the complete bald look (a modern day fashion) to look attractive | Yes | 85 (38.3%) | 137 (61.7%) | <0.001 |
| | No | 214 (47.5%) | 237 (52.5%) | |

DISCUSSION

This study illustrates that a sizable majority of people had heard about male pattern baldness (MPB) (80.9%), however they demonstrated limited knowledge regarding the topic in general. While most were able to identify the causes of MPB, with the most popular choices in the questionnaire being an amalgamation of multiple factors (36.3%) genetics, hormones, diet etc. followed by sleep (33%), a sizable portion did not know that losing hundred strands of hair per day is considered normal. The fact that most people had reported that they had gained knowledge about MPB through the internet (62.1%) rather than a healthcare professional, this could explain this observable gap in knowledge. The participants were able to identify that age increases the risk of MPB (62.1%), nevertheless 47.8% did not know which part of the scalp was most affected, and 50.6% were unaware regarding the detail that having a family member with MPB increases the risk of incidence in oneself. The fact that 71.6% of the participating population felt that the public at large is nescient regarding MPB, provides a clear image as to why such ambiguous responses were recorded.

Hair is seen as an integral and defining part of the human appearance, thus losing it has a major impact on the psychosocial well-being of a person. The results of our study confirmed this belief, as the majority of participants believed that MPB strongly affects the lives of individuals suffering from it. Similar findings were also reported in study

conducted in Pakistan by Rafique et al.²³ and in India by Al-Mutairi et al.²⁴ 69.8% of people believed that MPB leads to anxiety and depression, which could eventually lead to social isolation. A compelling figure, worth mentioning, is that 51.4% of the populace considered baldness an unattractive trait, giving us insight regarding how bald individuals are generally perceived in society. Unattractiveness leads to a lack of social acceptance,²⁵ which paves the way for low self-esteem among sufferers of MPB, which not only damages their self-confidence, but also makes social interactions and the search for meaningful relationships, a severely arduous task. A study in Korea,²⁶ provided similar results: a large majority of the participants considered bald people unattractive.

This study also highlighted a common practice, although people believed that early diagnosis of MPB results in effective management (56%), and that they would consider going to a doctor if they showed any early signs of MPB (65.2%), only (33.5%) have visited a physician for any sort of hair related problems. Lack of knowledge, and assumed costliness of treatment for MPB, were identified as the more prominent reasons for this behavior. Hair transplant was identified by the populace as being the more common treatment option for MPB, the expensive nature of which puts it out of the reach of many. Cultural remedies were also seen as another treatment option for MPB, the growing popularity of which could be due to poor doctor-patient communication and not enough time being spent with physicians.^{27,28} The use of such cultural remedies could be identified as one of the reasons, due to which patients avoid seeking medical care.²⁹ Juxtaposed to all this, it was also observed that many participants were taking measures to prevent further hair loss, or outright hiding it, such as by cutting their hair short. This indicates that people are well aware that they have a problem and are ready to take measures to prevent and/or deal with it. A better comprehension of the details regarding MPB will not only better allow the afflicted to deal with this issue but will also help them to cope better with the psychosocial aspects of this condition. 70.9% of the participants had hair fall complaints, which indicates the high prevalence of hair loss in adolescents.

With the rise of MPB it is important that there should be a greater number of awareness programs in order to educate people regarding their condition. Lack of knowledge not only delays sufferers from approaching a doctor, which in turn leads to a worsening of the condition, but also makes them more susceptible to negative emotions and thoughts. Such feelings eventually cause social withdrawal, especially without a support structure.³⁰ Therefore, with better education, not only will people resort to early treatment programs but will also be able to cope better with this affliction. 85.4% of the participants felt that there should be more awareness programs regarding MPB in Pakistan, which shows that the general public is willing to learn more about this condition, not only due to its staggering prevalence, but also in order to learn of effective methods to tackle it properly. This, along with the fact that the majority of the people in this survey did not know whether they were at risk of developing MPB, further highlights the need for such programs.

This article lays the groundwork for future research regarding this matter in Pakistan; there are a few limitations that need to be considered. Firstly, the sample size was small, therefore, it should be noted that the data is applicable only

to the population studied. Secondly, the number of married and unmarried participants was unequal. Thirdly, only the literate and educated were approached for this study, hence the awareness level can be expected to be higher. Moreover, mostly individuals that belonged to medical institutes took part in the survey, which suggests that they might have had greater prior knowledge regarding the disease.

CONCLUSION

Majority of the partakers generally had poor knowledge regarding causes of MPB, affected age groups and the role of genetics. However, they recognized its negative impact on social, emotional and psychological health. This article lays the groundwork for future research regarding this matter in Pakistan. More researches are needed to be conducted in Karachi on MPB.

REFERENCES

- Blume-Peytavi U, Blumeyer A, Tosti A, Finner A, Marmol V, Trakatelli M, et al. S1 guideline for diagnostic evaluation in androgenetic alopecia in men, women and adolescents. *British Journal of Dermatology*. 2010Aug;164(1):5-15. Doi: 10.1111/j.1365-2133.2010.10011.x
- Hamilton JB. Patterned Loss Of Hair In Man: Types And Incidence. *Annals of the New York Academy of Sciences*. 1951;53(3):708-28. doi.org/10.1111/j.1749-6632.1951.tb31971.x
- Heath AC, Nyholt DR, Gillespie NA, Martin NG. Genetic Basis of Male Pattern Baldness. *Journal of Investigative Dermatology*. 2003;121(6):1561-4. Doi: http://10.1111/j.1523-1747.2003.12615.x
- Rhodes T, Girman CJ, Savin RC, Kaufman KD, Guo S, Lilly FRW, et al. Prevalence of Male Pattern Hair Loss in 18-49 Year Old Men. *Dermatologic Surgery*. 1998;24(12):1330-2. doi.org/10.1111/j.1524-4725.1998.tb00009.x
- Shankar K, Chakravarthi M, Shilpakar R. Male androgenetic alopecia: Population-based study in 1,005 subjects. *International Journal of Trichology*. 2009;1(2):131. doi: 10.4103/0974-7753.58556
- Grover S. A study of patterns of androgenetic alopecia in men: an Indian perspective. *British Journal of Dermatology*. 2005;152(3):572-4. doi.org/10.1111/j.1365-2133.2005.06442.x
- Norwood OT. Male Pattern Baldness: classification and Incidence. *Southern Medical Journal*. 1975;68(11):1359-65. DOI: 10.1097/00007611-197511000-00009
- Sinclair RD, Dawber RP. Androgenetic alopecia in men and women. *Clinics in dermatology*. 2001 Mar 1;19(2):167-78. doi.org/10.1016/S0738-081X(00)00128-0
- Tang PH, Chia HP, Cheong LL, Koh D. A community study of male androgenetic alopecia in Bishan, Singapore. *Singapore Med J*. 2000 May;41(5):202-5. Available at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.571.8614&rep=rep1&type=pdf
- Kaufman KD. Androgen Metabolism As It Affects Hair Growth In Androgenetic Alopecia. *Dermatologic Clinics*. 1996;14(4):697-711. doi.org/10.1016/S0733-8635(05)70396-X
- Prodi DA, Pirastu N, Maninchedda G, Sassu A, Picciau A, Palmas MA, et al. EDAR2R Is Associated with Androgenetic Alopecia. *Journal of Investigative Dermatology*. 2008;128(9):2268-70. doi.org/10.1038/jid.2008.60
- Richards JB, Yuan X, Geller F, et al. Male-pattern baldness susceptibility locus at 20p11. *Nature genetics*. 2008;40(11):1282-1284. doi:10.1038/ng.255.
- Tellez-Segura R. Involvement of mechanical stress in androgenetic alopecia. *International journal of trichology*. 2015 Jul;7(3):95. doi: 10.4103/0974-7753.167468
- Guo EL, Katta R. Diet and hair loss: effects of nutrient deficiency and supplement use. *Dermatol Pract Concept*. 2017;7(1):1. doi: 10.5826/dpc.0701a01
- Olsen EA, Dunlap FE, Funicella T, Koperski JA, Swinehart JM, Tschen EH, et al. A randomized clinical trial of 5% topical minoxidil versus 2% topical minoxidil and placebo in the treatment of androgenetic alopecia in men. *Journal of the American Academy of Dermatology*. 2002;47(3):377-85. doi.org/10.1067/mjd.2002.124088
- Leyden J, Dunlap F, Miller B, Winters P, Lebwohl M, Hecker D, Kraus S, Baldwin H, Shalita A, Draelos Z, Markou M. Finasteride in the treatment of men with frontal male pattern hair loss. *Journal of the American Academy of Dermatology*. 1999 Jun 1;40(6):930-7. doi.org/10.1016/S0190-9622(99)70081-2
- Dua A, Dua K. Follicular Unit Extraction Hair Transplant. *Journal of Cutaneous and Aesthetic Surgery*. 2010;3(2):76-81. doi:10.4103/0974-2077.69015.
- Affifi L, Maranda EL, Zarei M, Delcanto GM, Falto-Aizpurua L, Kluijfhout WP, et al. Low-level laser therapy as a treatment for androgenetic alopecia. *Lasers in Surgery and Medicine*. 2016;49(1):27-39. doi.org/10.1002/lsm.22512
- Elinor Fondell, Kathryn C. Fitzgerald, Guido J. Falcone, Éilis J. O'Reilly, Alberto Ascherio; Early-Onset Alopecia and Amyotrophic Lateral Sclerosis: A Cohort Study. *American Journal of Epidemiology*, Volume 178, Issue 7, 1 October 2013, Pages 1146-1149. doi.org/10.1093/aje/kwt096
- Keum N, Cao Y, Lee DH, et al. Male pattern baldness and risk of colorectal neoplasia. *British Journal of Cancer*. 2016;114(1):110-117. doi:10.1038/bjc.2015.438.
- Hawk E, Breslow RA, Graubard BI. Male pattern baldness and clinical prostate cancer in the epidemiologic follow-up of the first National Health and Nutrition Examination Survey. *Cancer Epidemiol Biomarkers Prev*. 2000 May;9(5):523-7. PubMed PMID: 10815699. Available at http://cebp.aacrjournals.org/content/9/5/523
- Han SH, Byun JW, Lee WS et al. Quality of Life Assessment in Male Patients with Androgenetic Alopecia: Result of a Prospective, Multicenter Study. *Ann Dermatol*. 2012 Aug;24(3):311-318. doi.org/10.5021/ad.2012.24.3.311
- Rafique R, Hunt N. Experiences and coping behaviours of adolescents in Pakistan with alopecia areata: An interpretative phenomenological analysis. *International Journal of Qualitative Studies on Health and Well-being*. 2015;10(1):26039. doi.org/10.3402/qhw.v10.26039
- Al-Mutairi N, Eldin O. Clinical profile and impact on quality of life: Seven years experience with patients of alopecia areata. *Indian Journal of Dermatology, Venereology, and Leprology*. 2011;77(4):489. DOI: 10.4103/0378-6323.82411
- Salvia J, Sheare JB, Algozzine B. Facial attractiveness and personal-social development. *Journal of Abnormal Child Psychology*. 1976; 3(3):171-8. doi.org/10.1007/BF00916748
- Lee H-J, Ha S-J, Kim D, Kim H-O, Kim J-W. Perception of men with androgenetic alopecia by women and nonbalding men in Korea: how the nonbald regard the bald. *International Journal of Dermatology*. 2002; 41(12):867-9. doi.org/10.1046/j.1365-4362.2002.01446.x
- Sirois FM, Gick ML. An investigation of the health beliefs and motivations of complementary medicine clients. *Social Science & Medicine*. 2002; 55(6):1025-37. doi.org/10.1016/S0277-9536(01)00229-5
- Furnham A, Smith C. Choosing alternative medicine: A comparison of the beliefs of patients visiting a general practitioner and a homoeopath. *Social Science & Medicine*. 1988; 26(7):685-9. doi.org/10.1016/0277-9536(88)90060-3
- Taber JM, Leyva B, Persoskie A. Why do People Avoid Medical Care? A Qualitative Study Using National Data. *Journal of General Internal Medicine*. 2014Dec; 30(3):290-7. doi.org/10.1007/s11606-014-3089-1
- Newell RJ. Altered body image: a fear-avoidance model of psycho-social difficulties following disfigurement. *Journal of Advanced Nursing*. 1999; 30(5):1230-8. doi.org/10.1046/j.1365-2648.1999.01185.x