Original Article

Middle Easterns' Knowledge about Bat Blood Use and Effectiveness in Preventing Hair Growth: A Questionnaire Survey

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Abstract

In Middle Eastern countries such as Egypt, Lebanon, Syria, and Jordan, anointing girls' body with bat's blood is an option to reduce body hair growth. This study aimed to investigate the prevalence and people's opinions about the effectiveness of using bat's blood in preventing hair growth. A manual and online survey with closed-ended questions was distributed among 120 participants to examine the steps of bating procedure and associated disease risks. Among the participants, 90 were regular people and 30 were dermatologists and virologists.
97% of the samples had heard about the process and 71% had experienced it on themselves. Most of the study samples were familiar with the procedures and steps of bating (3.69), and they agreed with three essential procedures, namely; the blood should be warm and fresh, the operation takes place immediately after birth, and olive oil or saline should be used in the body bath. Also, there was a strong belief among the sample members about the effectiveness of this process (3.86) according to their age, gender, and educational level in favor of the less educated and older females. Furthermore, there was an agreement among specialists about the possibility that this process could be risky and leads to infection or skin allergies (4.34). Traditional practice in the Middle East area indicates the usefulness of bating process; however, laboratory and clinical studies are needed to illustrate any disease risks.

Keywords: Bating Process, Bat's Blood, Middle East, Hair growth reduction

Introduction

Despite the lack of proven scientific research on its effectiveness, many women, especially in the Middle East region, use bat blood to rub their daughters' bodies immediately after birth, which is known as the "bating process". [1] Although some people believe that the bating process is superstitious and ineffective, others still consider this method ideal and effective through the experiences of many people who have applied them at the present time. [2] This study aimed to measure the extent of people's knowledge of the procedures and use of the bating method according to their age, gender, and educational level in addition to their opinion on its effectiveness to prevent hair growth in girls for the residents of Jordan, Egypt, Lebanon, and Syria. Moreover, this survey provides a glimpse from the point of view of dermatologists and virologists on this topic in terms of effectiveness and its expected risks. Also, this study will be a good reference for future laboratory studies as it will provide researchers with a preview of this habit and the belief of people about it.

Materials and Methods

The descriptive quantitative approach was designed according to Saunders, et al. [3] to achieve the objectives of the study. A questionnaire was distributed online and manually among a random sample of people from the Middle East in Jordan, Syria, Lebanon, and Egypt. Data collected were analyzed on the SPSS 24 with the use of arithmetic means, percentages, and frequencies, as well as the T-test and One-way ANOVA to verify the statistical differences between sample members according to socio-demographic variables.

A random representative sample was chosen from this group consisting of 120 participants, 90 of them represented regular people from different community classes, and 30 were medical doctors in dermatology and virology. The

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questionnaire consists of a set of closed statements directed towards collecting data on the different study variables.

The reliability of the questionnaire and its elements were determined by Cronbach's Alpha Test by SPSS prior to the questionnaire being distributed among the study sample members. Cronbach's alpha for items of the first, second, and third scale was determined to be (0.891), (0.889), and (0.853), respectively. However, it was (0.887) for the overall tool items, which means that the reliability of the questionnaire is acceptable as long as Cronbach's Alpha value is higher than (0.7). On the other hand, the validity of this questionnaire was confirmed by presenting it to a group of academic referees specialized in the field of clinical pharmacology and toxicology.

Results and Discussion

Socio-demographic statistics

The questionnaire was filled out by 90 respondents from Egypt, Jordan, Syria, and Lebanon from all community classes, in addition to 30 dermatologists and virologists. A descriptive statistical analysis was implemented to identify the socio-demographic characteristics of the sample members as shown in **Table 1** below:

Table 1. The Socio-demographic and general information of the study samples

Variable	Categories	Frequency	Percentages
Gender	Male	35	29.2%
	Female	85	70.8%
Age	Less than 20 years	15	12.5%
	20-30 years	18	15.0%
	31-40 years	37	30.8%
	More than 40	50	41.7%
Education level	Illiterate	42	35.0%
	High school or less	35	29.2%
	Bachelor's Degree	25	20.8%
	Master's or Doctoral degree	18	15.0%
Country	Egypt	37	30.8%
	Syria	32	26.7%
	Lebanon	40	33.3%
	Jordan	11	9.2%
The source of knowledge about bating process	From my family	43	35.8%
	From my friends	35	29.2%
	From the Internet	15	12.5%
	Other sources	27	22.5%
Are you a physician (dermatologist or virologist)	Yes	30	25.0%
	No	90	75.0%

The descriptive statistics of the socio-demographic and general data of the study sample showed that the majority of the respondents were females (70.8%) while only (29.2%) were males, and this is logical given that women are more interested in issues of cosmetics and looking less hairy. The age group that highly participated in this survey was "more than 40 years" with a percentage of (41.7%), followed by (30.8%) of individuals between the ages of 31 to 40 years **(Table 1)**. This also gives the impression that those interested in this ancient habit (bating) are the elderly who believe in traditional medicine and the effectiveness of using animals and plants as a treatment [4-6]. Most of the study sample individuals were not educated or had only "high school degree or less" (35.0% were illiterate). On the other hand, the percentage of the participants with high school or less was 29.2%, whereas for those of bachelor's degree, and Master's or Doctoral degree was 20.8% and 15%, respectively. This gives an impression that the study was attended by people of various educational level but the vast majority were uneducated people who are more interested in ancient medical habits and the so-called traditional medicine. [7]

It should be noted that the bating habit is more prevalent in Egypt and Lebanon, due to the fact that Egypt has known this habit since the Pharaohs where the first appearance of using bat's blood in treatment was in the Ebers Papyrus. [8] Moreover, the majority of the respondents with a percentage of (35.8%) knew about this process or heard about it from their families, while the rest knew it from their friends, internet, or other sources.

Regarding the extent of the spread of this phenomenon in the Middle East, the sample members were asked whether they had experienced the bating process or had heard of it before. The following **Figures 1 and 2** illustrate the extent of knowledge and usage of this habit in Jordan, Syria, Lebanon, and Egypt.

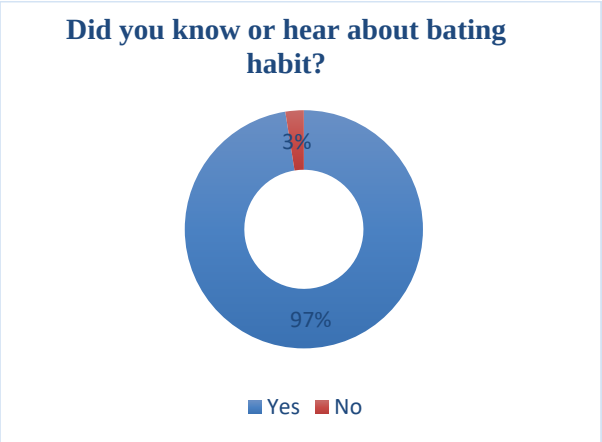

Figure 1. Participants' distribution chart according to their knowledge about bating process

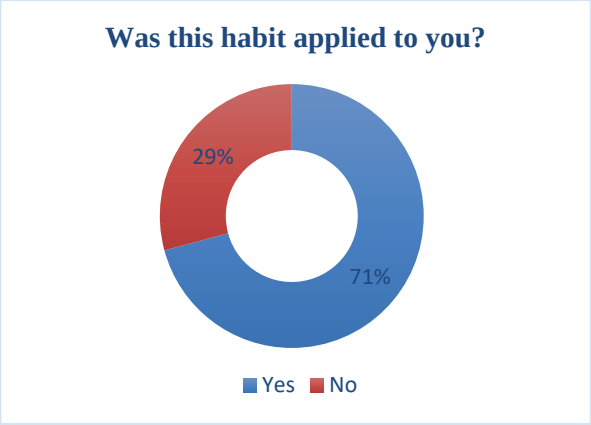

Figure 2. Participants' distribution chart according to their experience of bating

Through **Figure 1** and **Figure 2**, it can be seen that there is widespread knowledge of this habit among the inhabitants of the Middle East, as it can be said that most of the respondents were aware or knowledgeable about the bating process. Those who experienced the bating process exceeded half of the sample by (71%). This also gives an impression that the respondents were well versed in this process, and therefore they were able to answer the research questions credibly and with high efficiency.

Investigating the Extent of Respondents' Knowledge about the Steps and Procedures of Bating Process

In order to identify the most important steps and procedures followed in the bating process and the extent of the study samples' knowledge about it, a set of questions were asked about the appropriate time for the bat blood operation, the duration for which the bat blood should remain on the child's body, and how the child's body is washed after completion of the process. The five-point Likert scale was used in grading the responses of the respondents from (1), which represents a complete lack of knowledge of the process to (5), which represents complete knowledge about it. The results of the descriptive statistics came through this part as it is shown in **Table 2**, where averages ranging (1-1.80), (1.81 to 2.60), (2.61-3.40), (3.41-4.20), and (4.21-5.00) were considered very low, low, moderate, high, and very high, respectively.

Table 2. Summary of participants' responses to items measuring the steps and procedures for bating

Statement	Mean	Std. Deviation	Rank	Level
1) The process is performed using warm bat blood and before it clots.	4.0000	0.92582	3	High
2) The process usually takes place at night because bats have warm blood at night	3.8500	1.07414	4	High
3) Girls are painted with bats' blood immediately after giving birth	4.0750	0.936312	1	High
4) Girls' bat blood painting is completed 40 days after birth.	3.5833	1.11207	7	High
5) Bat's blood must be kept on the child's body for approximately 4-8 hours until the body absorbs it.	3.7750	0.94791	5	High
6) It is better to keep the bat blood on the child's body overnight so that her body can absorb it more.	3.4750	1.21588	9	High
7) The girl's body is completely painted by bat blood, with emphasis on sensitive areas such as the face and armpits.	3.7250	0.98700	6	High
8) After finishing, the child's body is washed with olive oil or saline solution.	4.0500	1.03591	2	High
9) The child's body is washed with soap and water.	3.1833	1.25010	11	Moderate
10) The process is applied to different skin colors.	3.5167	1.20909	8	High
11) The process can be applied to both males and females.	3.3583	1.34599	10	Moderate
Overall	**3.6902**	**1.05508**	**High**	

Investigating the Extent of Respondents' Knowledge about the Effectiveness of the Bating Process

In order to identify the respondents' awareness of the effectiveness of the bating process in hair removal, a set of questions were asked whether the respondents were aware of previous successful bating experiences applied to them or to people close to them. The descriptive analysis is as shown in **Table 3**.

Table 3. Summary of participants' responses to items measuring the effectiveness of bating process

Statement	Mean	Std. Deviation	Rank	Level
1) I know many people who have applied this habit, and it worked.	3.8083	1.14713	6	High
2) The bat's blood painting process is effective in preventing hair growth or at least making it smooth.	3.9083	0.99575	2	High
3) The effectiveness of applying this process at birth directly is greater than its application after 40 days of birth.	3.8750	0.96635	3	High
4) The effectiveness of applying the process to white skin is greater than it is on dark skin.	3.8167	1.07675	5	High
5) The effectiveness of the application of this process differ between females and males.	3.9250	1.02213	1	High
6) I believe in this habit's effectiveness and I am ready to apply it to my family.	3.8333	0.96435	4	High
Overall	**3.8611**	**1.00427**	**High**	

The overall mean for this part was high (3.8611) and all of its statements are highly agreed upon by sample members. These results are in line with the studies of [1, 2, 9] who have shown in their studies that bat's blood contains all the benefits of depilatory and hair removal has been proven since ancient times. It is important to consider its effectiveness as indicated by Pliny *et al* [9] study that specifically showed that if it is applied to cheeks of young men, it will not be effective sufficiently unless directly followed by application of grease or hemlock seeds.

Age, Gender, and Educational Level have an Effect on Respondent's Belief of Bat's Blood efficiency

The results were analysed through the independent sample T-test, to verify whether the respondent's gender played a role in their conviction in the effectiveness of bating process. Female respondents were significantly more convinced ($P < 0.05$) about the effects of this process than males. This result can be explained by the fact that females are more obsessed with seeking to experiment and discover all ways to get rid of excess hair in a permanent way compared to males, which was confirmed by a study by Barrionuevo [10].

The one-way ANOVA test was conducted on different age groups, as well as educational levels are shown in **Table 1** to find out which of them has more belief in the effects of anointing newborns with bat's blood. The analysis showed that people above 40 years old, as well as illiterate and those with "high school or less" education level who took part in the survey, had significantly ($P < 0.05$) higher acceptance about this process compared to other groups, respectively. This also goes in line with Schefft test results for the responses of participants in favor of elderly individuals of more than 40 years of age and low educated and illiterate people. This can also be explained by the fact that the elderly and less educated participants are more clung to ancient traditional medicine, and animal-derived ones, as well as their safety profile, is yet to be established. [1, 10-13]

The Potential Risks of Bating Process

The potential effectiveness of the bat in hair removal does not negate its health and medical risks. According to many studies, [14, 15] bats represent an appropriate reservoir and a vector for viruses. Therefore, in order to identify the potential risks of the bating process from a medical point of view, this part of the questionnaire was directed to 30 physicians specialized in viral diseases and dermatology, and the results of the descriptive analysis are as shown in **Table 4**.

Table 4. Summary of physicians' responses to items measuring the potential medical risks of bating process

Statement	Mean	Std. Deviation	Rank	Level
1) The process is dangerous and causes fatal viral diseases in the long term.	4.5333	0.62881	2	Very High
2) Anointing a girl's body with bats' blood may lead to irritation, dryness, and itching.	4.6333	0.55605	1	Very High
3) Coating a girl's body with bat blood may cause skin spots and discoloration.	4.3000	0.53498	4	Very High
4) This process may cause dermatological and gynecological diseases.	4.3667	0.61495	3	Very High
5) It may cause the death of the newborn in some cases.	4.1667	0.74664	5	High
6) The anointing of a girl with bat blood may lead to psychological illness, stress, and fear to her later on.	4.0667	0.73968	6	High
Overall	**4.3444**	**0.57724**	**Very High**	

The overall mean for this part was very high (4.3444) and all of its statements are highly agreed upon by the participated physicians, which indicates that despite the bating process effectiveness, it may be risky and lead to the infection of girls with many fatal viral diseases, or at least, may cause their skin to be dry, allergic, and blemished. These results are consistent with other studies [15-18], which showed that despite the various advantages attributed to bats since ancient times, bats pose a danger to humans. This is because they host many microorganisms that can cause severe human infections that are fatally infectious to humans, such as Ebola and Marburg, SARS and MERS, and coronaviruses. Moreover, what increases its risk is also what recent research and the World Health Organization have shown in its report in 2020 that bats are the repository of the recently spread global Coronavirus. Studies indicated more than 500 Coronavirus have been identified in bats in China, indicating that these organisms are dangerous and that precautions must be taken into consideration [19].

Conclusion

Removing unwanted hair has always been an obsession for females from ancient times to the present day. Although most females in the modern era adopt hair removal in various painful methods, there are many women in the Middle East region, who still resort to rubbing the skin of their daughters' bodies with bat blood. The results showed that most of the study samples were familiar with the procedures and steps of bating, such as the operation should take place immediately after the birth with warm and fresh bat blood in addition to using olive oil or saline solution on the body bath after completing the procedure.

Moreover, the study also indicated that there is a strong belief among the study sample about the effectiveness of this method in preventing hair growth permanently or at least making it smooth, and this conviction was connected with their age, gender, and educational level in favor of the less educated and older respondents. Furthermore, the results showed that there is an agreement among the medical doctors in dermatology and virology about the possibility that this process could be risky and lead to the infection of girls with many fatal viral diseases, or at the very least, it may cause dry skin, allergies, and defects.

Accordingly, the study concluded that even if this study showed the effectiveness of this process in hair removal, this does not mean the validity of this belief, rather it may be appropriate or harmful to babies. Therefore, the study recommends the need to conduct more laboratory studies in this field to identify the suitability of using bat blood from the medical point of view.

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References

1. Ohrstrom L. [Daily Star] Bat's blood: Hair removal potion or old wives' tale [Internet]. 2013 Sep [Cited 2020 Aug 16] [about 1 p.]. Available from: https://www.dailystar.com.lb/Culture/Lifestyle/2013/Sep-13/231063-bats-blood-hair-removal-potion-or-old-wives-tale.ashx
2. Riccucci M. Bats as materia medica: an ethnomedical review and implications for conservation. Vespertillio. 2012;16(16):249-70.
3. Saunders M, Lewis P, Thornhill A. Research Methods for Business Students. 5th edn. UK: Pearson Education Ltd, 2012.
4. Al-Shukri AF, Al-Marzook FA, Al-Hammadi NA, Mutlag IH. Antitumor Activity of Alkaloids Extract From Opuntia Polyacantha Plant Using High Content Screening Technique (Hcs). Pharmacophore. 2020;11(1):129-35.
5. Morilla LJ, Demayo CG. Medicinal plants used by traditional practitioners in two selected villages of Ramon Magsaysay, Zamboanga del Sur. Pharmacophore. 2019;10(1):84-92.
6. Alshehri KM. Anticancer Plants Naturally Growing in Al-Baha Region, Saudi Arabia. Int J Pharm Res Allied Sci. 2020;9(4):92-101.
7. Aragaw TJ, Afework DT, Getahun KA. Assessment of knowledge, attitude, and utilization of traditional medicine among the communities of Debre Tabor Town, Amhara Regional State, North Central Ethiopia: A cross-sectional study. Evid Based Complement Alternat Med. 2020 Mar 10;2020.
8. Sharfeldean RM. Coptic Medicine And Monastic Health Care System In The Early Centuries Of Coptic Christianity. Int J Tour Hosp Manag. 2019 Dec 1;2(2):72-97.
9. Pliny Bostock J, Riley HT, editor. The natural history of pliny, 4th edn. London: Henry G. Bohn; 1856.
10. Barrionuevo P, Nabhan M, Altayar O, Wang Z, Erwin PJ, Asi N, et al. Treatment options for hirsutism: a systematic review and network meta-analysis. J Clin Endocrinol Metab. 2018 Apr;103(4):1258-64.
11. Abi-Najem N. [Vice] My Mom Wanted to Anoint Me with Bat's Blood to Make Me Hairless [Internet]. 2015 Sep [cited 2020 August 25th]. Available from: https://www.vice.com/en_us/article/d3ggb7/my-mom-wanted-to-anoint-me-with-bats-blood-to-make-me-hairless
12. Lee CM. Laser-assisted hair removal for facial hirsutism in women: A review of evidence. J Cosmet Laser Ther. 2018;20(3):140-4.
13. Benzineb E, Kambouche N, Hamiani A, Bellahouel S, Zitouni H, Toumi H. Phenolics Compounds and Biological Activity of Leaves of Anabasis Articulata, an Algerian Medicinal Plant. Int J Pharm Res Allied Sci. 2019;8(4):1-5.
14. Hayman DT, Bowen RA, Cryan PM, McCracken GF, O'shea TJ, Peel AJ, et al. Ecology of zoonotic infectious diseases in bats: current knowledge and future directions. Zoonoses Public Health. 2013 Feb;60(1):2-21.
15. Barclay WS. Receptor for bat influenza virus uncovers potential risk to humans. Nature. 2019: 35-6.
16. Allocati N, Petrucci AG, Di Giovanni P, Masulli M, Di Ilio C, De Laurenzi V. Bat–man disease transmission: zoonotic pathogens from wildlife reservoirs to human populations. Cell Death Discov. 2016;2(1):1-8.
17. Letko M, Seifert SN, Olival KJ, Plowright RK, Munster VJ. Bat-borne virus diversity, spillover and emergence. Nat Rev Microbiol. 2020 Aug;18(8):461-71.
18. Moratelli R, Calisher CH. Bats and zoonotic viruses: can we confidently link bats with emerging deadly viruses?. Mem Inst Oswaldo Cruz. 2015 Feb;110(1):1-22.
19. World Health Organization. Novel Coronavirus (n-COVID 2019): situation report [Internet]. 2020 Aug [Cited 2020 Aug 26th]. Available from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200211-sitrep-22-ncov.pdf?sfvrsn=fb6d49b1_2.