fortune Journals

Research Article

JOURNAL OF PSYCHIATRY AND PSYCHIATRIC DISORDERS

ISSN: 2572-519X

ABO Blood Groups Associated with Aggression Personality Trait

Donna K Hobgood*

Abstract

An intrigueing and fruitful way of looking at human behavior is not just the psychological but also the physiologic and genetic approach. The autonomic nervous system carrying impulses from the central nervous system may be a basic part of this endeavor. Research on personality trait genetics is ongoing. Many researchers have seen some advantage to exploring the ABO gene in this connection since this gene was the first one known and has much antecedent work to draw on. Previous findings include such traits as tender-mindedness and persistence associated with ABO A blood type.A data collection in an OBGYN office practice yielded a hypothesis that ABO A gene may be associated with Aggression trait. Based on Karen Horney's writings where she posited that human attitudes can be shown to reflect efforts to move toward others, against others or away from others, Benis's NPA online personality test was offered to patients in an OBGYN office as a way to better understand personality, behavior and medical status. All 4028 patients were offered the test, and of 1228 patients who took the test, 369 had ABO blood type available from a pregnancy on record.The conclusion that ABO A correlates with personality features related to autonomic nervous system correlates is based on that data collection as well as on a clinical impression that ABO A seems more correlated with evidence of sympathetic nervous system dominance in behavior, i.e. more "fight or flight" baseline anxiety and excitability, ABO A plus AB reflecting ABO A gene appear to show higher Aggression trait than ABO O plus B. And the test data does support the hypothesis that higher Aggression trait and thus sympathetic nervous system effects are more prevalent in ABO A gene carriers. Previous research on ABO A and personality is consistent with this as well although no consensus has been reached. The finding of ABO A gene associated with Aggression trait from sympathetic nervous system should be further evaluated.

Keywords: Genetics; ABO blood groups; Personality traits; Aggression; Women

Introduction

The ABO blood groups and their genetic underpinnings have been studied for over one hundred years. Initially, the studies focused on gathering data on geographic distribution. Then correlations with illnesses and with personality traits were observed.Geographic data revealed prominent differences in ABO frequencies among populations thus allowing conclusions such as the origin of ABO B in Mongolian populations and the evolution of ABO gene from the ancestral gene ABO A to current world distributions of highest frequency of ABO O blood type with moderate frequency of ABO A and lower frequency of ABO B and lowest frequency of ABO AB types. The

Affiliation:
University of Tennessee College of Medicine, Chattanooga Unit, Erlanger East Hospital, 1751 Gunbarrel Road, Chattanooga TN 37421, United States

***Corresponding author:**
Donna K Hobgood, University of Tennessee College of Medicine, Chattanooga Unit, Erlanger East Hospital, 1751 Gunbarrel Road, Chattanooga TN 37421, United States

Citation: : Donna K Hobgood. ABO Blood Groups Associated with Aggression Personality Trait. Journal of Psychiatry and Psychiatric Disorders 7 (2023): 01-05.

Received: December 31, 2022
Accepted: January 06, 2022
Published: January 12, 2023

Hobgood DK., J Psychiatry Psychiatric Disord 2023
DOI:10.26502/jppd.2572-519X0176

geographic distribution of the ABO gene is such that ABO O is very widespread while ABO B trends eastward and ABO A trends westward.The explanation for the widely differing but stable frequency distribution of the ABO blood types throughout the world is considered to relate partly to differential susceptibilities to infections such as malaria [1]. But personality and behavior differences in the ABO genes is an intriguing area for speculation as well. Do populations with high Aggression trait engage in more wars? Do political philosophies differ in Aggression trait high populations. Some data suggests that liberal political philosophy is more prevalent in areas where populations have higher Aggression trait and ABO A gene [2].Research in many health effects of ABO gene is ongoing and consensus exists for many conclusions. Gastric cancer appears more likely in ABO A as does pancreatic cancer. Peptic ulcer disease is more common in ABO O. Thrombosis is more common in non-O blood groups. Many infections such as malaria, small pox and tuberculosis have shown reproducible associations with ABO blood groups [3].Research in personality has been done from earliest times of the discovery of ABO blood groups as well. No consensus has been reached in this gene nor for any other gene in reference to personality though elegant research including twin research has shown personality to be at least 50% heritable. In fact in identical twins, nurture is assignable as causation in only 10% proportion of personality traits. Unshared environmental effects are the term in twin research that expresses the unknown causation of personality, and perhaps that can translate to randomness. So the heritability of personality is the consensus but the genes involved are not proven [4].Genes correlate with personality features related to autonomic nervous system correlates. Based on a clinical impression that ABO A seems more correlated with evidence of sympathetic nervous system dominance in behavior, i.e. more “fight or flight” baseline anxiety and excitability, ABO A and AB reflecting ABO A gene show higher Aggression trait when compared to ABO O plus ABO B.

Materials and Methods

Psychologist Karen Horney posited that human attitudes can be viewed as reflecting efforts to move toward others, against others or away from others [5]. When Benis’s [6] NPA online personality test based on Horney’s work was offered to patients in an obstetrics gynecology office as a way to understand personality and illness, pilot study results were suggestive of many correlates of personality and illness. This database was used to generate hypotheses. The online test used to assess patients was at the following web site:https://www.npatheory.com/etest0/NPAtestxx.htm

Test answers were answerable on a 5-point scale. There were 50 total questions regarding all personality traits. Twelve questions queried aggression trait and are listed below:

1. Is this you: talkative, impatient, much sex appeal, smiles and laughs easily, having a sharp-edged personality?
2. When things must get done, are you liable to push people aside and ask questions later?
3. At a quiet party, would you welcome a newcomer with a hearty yell across the room?
4. Do you tend to be suspicious and confrontational, rather than accepting other people’s motives and actions?
5. In relaxed social situations, do you speak with a loud, carefully-controlled voice and make intense eye contact with others?
6. Could you be described as hyperactive, unembarrassable, and attracted to good food, sex, travel and excitement?
7. Is this you: sociable but not sexy, rather loud voice, conventional lifestyle, maternalistic or paternalistic, dynamic, a managerial outlook on life, a bulldog?
8. When excited does your voice easily become piercing (male) or shrill (female)?
9. When angered, could you be described as tearful, hysterical, and liable to lash out with talons bared?
10. If someone were slow at doing something, would you immediately intervene and say with a forceful voice, Let me help you with that!
11. Are you rather likely to have many short-lived love affairs in which you treat your weaker partner rather cruelly?
12. Are you more hyperactive and sexually provocative than other people, a vampire in your dreams?

Results

There was seen a significant increase in Aggression trait in the cohort of women with ABO A blood type plus those with ABO AB blood type when compared with ABO O plus ABO B cohort.In a database of OBGYN office patients, percent Aggression trait in those with known blood type (pregnant or recently pregnant) was 5%. Percent Aggression trait in all testtakers was 8%. Percent of Aggression trait in ABO A plus AB was 10% compared to 3% in ABO O plus B.The difference was significantly higher in ABO A plus AB compared with ABO O plus B at p=<.04 (Table 1).

Discussion

ABO groups A plus AB evidenced in this large database a modestly significantly higher aggression trait incidence when compared to ABO O plus ABO B blood groups. Previous research on ABO A blood groups and personality traits is extensive and ongoing. The most widespread theory of ABO blood group in personality is in Japanese Personality Theory [7]. ABO A in this system shows seriousness and enthusiasm,

Hobgood DK., J Psychiatry Psychiatric Disord 2023
DOI:10.26502/jppd.2572-519X0176

Table 1: Showing that difference was significantly higher in ABO A plus AB compared with ABO O plus B at p=<.04.

ABO type	Total # testakers with blood type known (all with current or recent pregnancy)	Aggression trait# count A+AB significantly higher p=<.04	Aggression trait # expected
A+AB	142(129A+13AB)	10(8A+2AB)	6
Non-A or AB	227(177O+50B)	7(6 O+1B)	11
Total	369	17	17
"Aggression" result from NPA online test Aggression trait # expected if Aggression equally distributed in population without regard to ABO type			

Table 2: Kanazawa's ABO traits of personality.

O	Purpose oriented. Head straight for a target. Great achievement power. However, do not endure meaninglessness. Give up early if no good. Weigh losses against gains correctly. Hold a belief. Articulate and logical, but somewhat straight. Simple minded in part. Emotions are usually stable and do not linger. Deeply moved. Lose heart when cornered.
A	Cautious about new actions, also pursue stability, but sometimes obsessed and burst into a rage. Desire for molting. Always try to improve. Take a brave action in an emergency. Go step by step after convinced. Formula-like. Prudent judgement, although draw the clear line. Strongly suppressive outside vs violent inside. Recover slowly after got hurt. Concentrate on one at a time.
B	Look for a life with much freedom. Particularly dislike rules or formulas. Do not hesitate to take new actions. Tend to be absorbed in strongly interested things. Multitasking and go overboard. Quick and flexible judgements. Pragmatic and do not draw the line. Emphasize scientific accuracy and validity. Feelings sway, moody. Frankly express anger or sorrow.
AB	Good reflexes, business-like efficiency. Quick and easy understanding. Rationality itself. Good critic and analyst, multi-angle interpretation. Duality with a calm, cool stable side and an easily disturbed side with sentimental fragility. Able to do everything accurately. Good at designing but not cleaning up. Smiling and soft, but keep a certain distance from others.
This Table 2 is from reference #7	

Japanese ABO blood group personality theory proposes that blood types A, B, O, and AB are associated with personality traits related to seriousness and enthusiasm, being easily bored, mildness, and individualism, respectively [8] (Table 2).

Though many studies validate the Japanese Personality Theory, the theory has been questioned as allowing validation on the basis of a self-fulfilling prophesy, but this explanation for the positive correlations of traits with ABO blood groups has not been proven. And the theory continues to be used and studied.One may wonder if ABO gene is correlated with personality why is there yet no consensus about the precise traits that associate with each blood type.Though ABO A types may be AO or AA genetically and B types may be BO or BB genetically, ABO AB and ABO O are genetically the same as they are phenotypically so descriptors may be more reproducible in AB and O compared to the other blood types. So the difference in genotype and phenotype of blood groups may underlie some imprecision in testing the hypothesis that ABO A gene is associated with aggression trait since ABO A blood types could be ABO AA or ABO AO. This description of Japanese Personality Theory appears consistent with clinical observations in an OBGYN office. ABO A types in an OBGYN clinical population appear to be more intense people emotionally with the descriptor of strongly suppressed outside but violent inside making sense with observation and with this hypothesis of ABO A association with Aggression trait.Linkage disequilibrium may be the cause of the hypothesized association of ABO blood groups with personality as an upstream catecholamine gene, DBH (Dopamine Beta Hydroxylase) is linked with ABO blood group on chromosome 9q34.Higher DBH has been found with ABO A, this correlated with traits like sensation- seeking and Cloninger traits of novelty seeking and persistence [8]. ABO gene is in linkage disequilibrium with Dopamine Beta Hydroxylase gene (DBH), a gene that is associated with many health issues and personality traits [9]. ABO A has been found linked with high activity DBH thus a high norepinephrine−dopamine ratio. So ABO A possible association with personality traits like 'sensation-seeking' and with increased activity DBH is consistent with increased sympathetic nervous system effects as well as aggression in both animal and human studies [10-15].ABO gene is a pleiotropic gene having effects on coagulation and on neoplasia both benign and malignant and on infection related morbidities. In research over many years, ABO gene has been shown to have associations with behavior though no consensus exists. In this hypothesis, with Horney's trait of 'moving against others' this also envisioned as Aggression trait, patients in an OBGYN office with ABO A gene (ABO A or ABO AB) have a significantly higher Aggression trait score when compared with ABO O plus ABO B. ABO A gene may be connected to liberal political ideology via such traits as empathy. The sympathetic nervous system can be seen at work with empathy trait as well as with aggression trait [16]. Aggression here is not used as necessarily a pejorative term so besides negative connotations of doing harm, there are possible positive connotations as with

Hobgood DK., J Psychiatry Psychiatric Disord 2023
DOI:10.26502/jppd.2572-519X0176

being aggressive in athletic endeavors or other contests. As such, aggressiveness increases ones chance of winning and success at achieving thus a possible positive connotation. The online test is not a validated instrument. According to the theory of the test, the prevalence of Aggression trait in some population is moderately high, much higher than the 8% result in this total population of OBGYN office patients and 5% in pregnant office patients. However, the test results do show this imprecision by giving a wide range of possible results in each patient's score. For this article, to achieve high specificity, only those patients scoring Aggression trait only without other options were counted as having Aggression trait (total 5%), this a much lower number than the theorized. So the total low number of Aggression results reflects an effort to achieve specificity over sensitivity instead of a true paucity of Aggression trait presence in the total population. Although ABO A plus AB compared with ABO O plus B evidenced higher Aggression trait, pregnant women who took the NPA test evidenced lower Aggression trait (5%) compared to all testtakers (8%). Since not all pregnant women chose to take the test, the results could be skewed by a difference in personality in those who chose not to take this online test. The non-testtakers who were pregnancy were not expected to differ from those who took the test. Sympathetic tone in pregnancy is not well agreed upon but has been found higher in pregnant women in that norepinephrine level is higher though vascular effects don't evidence that as clearly [17]. Consistent with this, women in labor with Aggression trait on the NPA test evidenced higher heart rate tracing in labor and a tendancy to ABO A blood type consistent with the research finding of higher norepinephrine levels. So there may be variation in whether sympathetic tone is increased in the pregnancy state.Aggression trait like much of personality research is limited by imprecise variables. The term 'aggression' has etymology of Latin roots meaning to step toward, to attack. Here the effort is to use this term to describe behaviors of adrenergic correlates, the 'fight or flight' behaviors vs. the parasympathetic 'rest and refresh' behaviors. And the Horney theory as expressed in Benis's NPA online test addressed these. Yet no consensus exists in this trait research. Our approach of equating aggression trait with sympathetic nervous system has the benefit of allowing correlation with genes that directly related to sympathetic nervous system, norepinephrine but also genes suspected of having linkages such as the ABO blood group genes. If this association of ABO A gene with Aggression trait is validated by further studies, given the varying geographic frequencies of gene A, genetically based cultural differences in populations may be better understood to be related to this gene. And given the pleotropy of ABO gene, variations in sympathetic tone and medical ramifications of that among individuals may be correlated with ABO blood group. And many studies have shown these findings.

Conflicts of Interest

None

Funding

There is no funding received for the study

Consent statement

Ethical approval not required.

References

1. Cserti CM, Dzik WH. The ABO blood group system and Plasmodium falciparum malaria. Blood 110 (2002): 2250-2258.
2. Chirumbolo A, Leone L. Personality and politics: The role of the HEXACO model of personality in predicting ideology and voting. Personality and Individual Differences 49 (2010): 43-48.
3. Garratty GÊ. Association of blood groups and disease: do blood group antigens and antibodies have a biological role? Hist Philos Life Sci 18 (1996): 321-344.
4. Turakulov R. Jorm A Jacomb P, et al. Association of dopamine-β-hydroxylase and androgen receptor polymorphisms with Eysenck's P and other personality traits. Personality and Individual Differences 37 (2004): 191-202.
5. Coolidge FL, Moor CJ, Yamazaki TG, et al. On the relationship between Karen Horney's tripartite neurotic type theory and personality disorder features. Personality and Individual Differences 30 (2001): 1387-1400.
6. The Benis NPA online personality test. https://www.npatheory.com/etest0/NPAtestxx.htm
7. Kanazawa M. Relationship between ABO Blood Type and Personality in a Large-scale Survey in Japan International Journal of Psychology and Behavioral Sciences 11 (2021): 6-12.
8. Tsuchimine S, Saruwatari J, Kaneda A, et al. ABO blood type and personality traits in healthy Japanese subjects. PloS one 10 (2015): e0126983.
9. AF Wilson, RC Elston, RM Siervogel. Linkage of a gene regulating dopamine-beta-hydroxylase activity and the ABO blood group locus. Am J Hum Genet 42 (1988): 160-166.
10. Cattell RB, Young HB, Hundleby JD. Blood groups and personality tests. - Am J Hum Genet 16 (1984): 397-402.
11. Polasik D, Konieczna A, Terman A, et al. The association of C789A polymorphism in the dopamine beta-hydroxylase gene (DBH) and aggressive behaviour in dogs. Acta Vet Brno 90 (2021): 295-299.

Hobgood DK., J Psychiatry Psychiatric Disord 2023
DOI:10.26502/jppd.2572-519X0176

12. Lamprecht F, Eichelman B, Thoa NB, et al. Rat fighting behavior: serum dopamine-hydroxylase and hypothalamic tyrosine hydroxylase. Science 177 (1972): 1214-1215.

13. Marino MD, BourdŽlat-Parks BN, Liles LC, et al. Genetic reduction of noradrenergic function alters social memory and reduces aggression in mice. Behav Brain Res 161 (2005): 197-203.

14. Kamata M, Suzuki A, Matsumoto Y, et al. Association study between the? 1021C/T polymorphism of the dopamine-hydroxylase gene promoter and personality traits in healthy subjects. Neurosci Lett 462 (2009): 54-57.

15. Hess C, Reif A, Strobel A, et al. A functional dopamine-beta-hydroxylase gene promoter polymorphism is associated with impulsive personality styles, but not with affective disorders. J Neural Transm 116 (2009): 121-130.

16. Gong P, Liu J, Li S, et al. Dopamine beta-hydroxylase gene modulates individuals' empathic ability. Soc Cogn Affect Neurosci 9 (2014): 1341-1345.

17. Reyes LM, Usselman CW, Davenport MH. Sympathetic nervous system regulation in human normotensive and hypertensive pregnancies. Hypertension American Heart Association 71 (2018): 793-803.