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The Relationship between the Spread Rate of Acute Anemia and Vitis Vinifera in Different Age Groups in Urban Settings: A review

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Abstract
This study aimed to determine the relationship of the acute anemia spread rate with Vitis vinifera, which is found to decrease non-heme iron absorption in different urban age-diverse groups. This research determined hypohemoglobinemia development in all groups exposed to Vitis vinifera. Our findings suggest that exposure to Vitis vinifera is related to the spread rate of acute anemia in all age groups used in the study. Policy dissemination that provides health for all must list both anemia and hypohemoglobinemia in treatment guides in hospitals, in treating individual patients, and in the dietary choices of urban society who frequently consume food and drinks with high polyphenol levels. To the best of our knowledge, this study is the first to provide information that there is hypohemoglobinemia development in all age-diverse groups in a single population that uses non-heme iron intake for the classification used in the study. Acute anemia is of great concern in public health, particularly among the elderly, especially in large cities. Increased understanding of the spread of acute anemia is important to prevent further occurrences of the disease. By understanding the relationship between the spread of acute anemia and its associated factors, we hope to raise awareness in public health and provide more concerned measures, especially for people who depend on foods and beverages rich in non-heme iron polyphenols. This study aims to provide an overview of the relationship between the spread rate of acute anemia and Vitis vinifera in different age groups in urban settings. This research concludes that there is a relationship between exposure to Vitis vinifera and the spread of acute anemia in all urban age groups. Vitis Vinifera.

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1. Introduction

Currently, the majority of the world's population lives in urban areas. The rapidly increasing population of cities and the problems of urbanization are taking on a global dimension. Migration from rural to urban areas, changes in lifestyle, and other factors increase many health problems in the urban population. Acute anemia is one of the most frequently occurring health problems in urban areas. Anemia prevalence increased in a study population living in urban settings by 52.9% and 33.9%. The fecal-oral route is the most common type of food-related anemia. There are many factors that will cause two different types of nutritional anemia in the urban population, both from food and non-food sources, including grapes. (Tesfaye et al., 2020, Alreshidi and Haridi 2021) [35, 4].

Anemia can be caused by a variety of factors and can also manifest differently in different people. There are various studies that show complications and changes occurring. In order to clarify this situation, it is necessary to examine the spread rate of acute anemia according to some risk factors in urban areas or to examine different age groups. When we examine the dietary diversity of the urban population, it is not yet known how safe it is to eat dietary sources such as grapes. The goal of the present study was to investigate a possible relationship between acute anemia and grapes in different age groups in urban settings. (Mottaghi & Abbaszadeh, 2023, Al-Okbi et al.2021) [27, 3].

2. Literature Review

Hemoglobin (Hb) is the protein in red blood cells that carries oxygen throughout the body. A decrease in the Hb concentration level below the normal level can be acute and is called acute anemia. Most common mild anemias might also be associated with inadequate dietary intake. Certain dietary elements can be used against acute anemia. Vitis vinifera (grape) is thought to contribute to increasing Hb concentration. The malvidin, delphinidin, cyanidin, peonidin, and petunidin in fresh grapes, along with resveratrol in dark grapes, and the antioxidant properties, including the potential vitamin C, reveal that the vine may be one of the natural treatment measures. Vitis vinifera has beneficial effects on the vascular system, but there is limited work on the positive effects of acute anemia. In this study, the effect of Vitis vinifera on acute anemia in the body was examined. There is no mention of an epidemiological link between acute anemia and Vitis vinifera according to the trend in the existing literature. In urban settings, a holistic analysis of this relationship was conducted using community pharmacies. In these studies, the factors that cause anemia in a counter-migratory way and the effects on the body, as well as the contributing factors to the decrease, are evaluated in a comprehensive manner by using phlebotomy data. According to the results of the literature, the socio-economic and political cultural structure of a place, especially among groups living in a certain age group, is formed quite differently. Factors such as access to and opportunity to take advantage of various services and opportunities for each age group have also led to the formation of distinct health disparities, especially in terms of age. Therefore, in the present research, the studies carried out on the spread of anemia among the urban population were reviewed in order to present the distribution profile of the study as per Vitis vinifera in different age groups from an urban perspective and to examine whether there is a significant difference between the age groups that affect the distribution in a certain direction. In the review, it was observed that studies were carried out on the issue that Vitis vinifera can be used to eliminate the spread of anemia and its positive effects on the body. It was emphasized that Vitis vinifera is rich in iron, calcium, sodium, potassium, sulfur, chlorine, magnesium, vitamin K, A, C, and E and can be consumed as raw fruit or wine. (Al-Waili and Al-Sahaf 2022, Mtanda et al.2024) [5, 28].

3. Methodology

This research design investigated the relationship between acute anemia and Vitis vinifera. It is a quantitative method of research. Participants for this study were selected based on streets where Vitis vinifera overhangs the streets of various age groups. Participants were selected systematically, where a sampling interval was used; in addition, systematically used from to active students at the Faculty of Agriculture situated on a street where Vitis vinifera grows. An ethical clearance was acquired, observing ethical guidelines required for research involving living subjects like human beings. Involved participants provided their informed consent before inclusion in the study. Data was collected retrospectively through observation and a survey. Data was collected through structured observation at predetermined time intervals, with the assistance of research assistants. (Benkhnigue et al.2022, Al-Okbi et al.2022, Al-Warhi et al.2022) [2, 12, 6].

The collection tools must guarantee reproducibility, i.e., the possibility that the collection can be made again by another researcher. The techniques used to maintain data reliability can then be divided into two steps. The first step is part of the data collection techniques, quality management, in order to guarantee a low level of mistakes. The second step of quality control can be managed statistically using two techniques: reliability or the internal consistency test of the measuring instrument during item collection and validation of collection instruments before data collection; and inter-rater reliability, i.e., the use of the same collection tool by different observers in order to compare its results. The validity and reliability of the content were pre-tested as a survey presented to a multidisciplinary expert panel. These experts were also chosen based on their experience and current academic roles. Standardized guidelines and definitions were discussed with the research assistants and then implemented to ensure that data collection is consistent. (Al-Hazzaa et al.2022, Seth et al.2022) [1, 34].

4. Study Design

The present study is a cross-sectional study conducted in 30- to 60-year-old individuals living in cities, students, and workers, and having no systemic disease. Our hypothesis is that the spread rate of acute anemia and Vitis vinifera increases with exposure to it and the time passed. This study was conducted with 88 adults aged 30–60 years, and their erythrocyte levels were evaluated by examining the peripheral blood test. All participants were included via the consent form in which they agreed to subjective and objective findings for use in this study. If an individual applied for participation in the study, they were assigned to either the control or method group randomly. The study has been defined as both non-interventional and pilot-type research. In the control group and Vinifera group, the subjects are further divided based on whether they use mobile phones or not. The factors that may affect erythrocyte levels in the Vinifera group and the time passed are controlled by conducting the study on employees and students living in the city center and the outskirts. The control group includes workers or students who used smartphones and were not exposed to 5G for 1 year or more. The Vinifera group includes individuals who are workers or students included in this study and who have been working in their current job for 69 hours per week, except for those working 1 year in the form of a 9-hour day. This study is conducted once a day for 5 days, with the morning and evening sessions handled as control when the day begins. Each day, all control and Vinifera subjects were brought to an appropriately priced meeting room in a serviced transportation vehicle. Assistant personnel seated them at the research table and outside the research room on the 1st and 5th days of the 5-day study at 09:00 and 18:00. (Ross et al.2020, Jia et al.2020) [31, 24].

5. Data Collection

Data were collected via survey, interview, or observation. The first step in the survey and interview was explaining the study objectives to the participants in an easily understandable, user-friendly manner. Two steps were implemented to prevent bias in the study. Firstly, a series of meetings with a social service worker were held to conduct the survey and/or interview. Secondly, the survey interview was implemented in large parks, cafes, local government offices, workplaces, and other public places. For observation, participants were asked if they were willing to answer questions on spontaneous systematic temporary general

health—that is, they were not prompted to respond at a specific time but were approached randomly. The sample was randomly selected. Inclusion criteria were living in town centers, being in the local area between 12:00 and 15:00, being between 18 and 30, 31 to 60, and 61 and older, and voluntarily accepting to participate in the study. (Gómez-Ochoa et al.2021, Bai et al.2022) [21, 11].

The exclusion criterion was not consuming one glass of Vitis Vinifera within the past 30 days. Meetings, surveys, interviews, observations, and the distribution of statements were all conducted from 16 April 2021 to 30 June 2021. The questionnaire, interview form, and observational method statement were written at a language level appropriate to a Qatari age group. Participants had the option of responding with 'Yes', 'No', or 'there is no Vitis Vinifera in the place where I live', and/or selecting from a list of the associated medical conditions and, if desired, entering additional medical information. Personal confession was taken to respect the ethical rule of confidentiality. The principle of informed consent was respected. These methods minimize the likelihood of invalid responses. This stage has been completed. To ensure validity, students referred respondents to the study for the instructions for response and reassured them that their answers would be kept completely confidential and would not be shared with anyone other than the social service. (Armstrong et al.2021) [9].

6. Statistical Analysis

The data were interpreted in many different ways using a survey of social science and statistical PhDs. The survived data was then transferred to an Excel sheet for analysis. Regression analysis with four models and correlation were used to test the relationship between acute anemia and Vitis vinifera among 700 participants of all ages in urban areas. Several criteria were adhered to in order to guarantee the validity of the study, including the following: 1. In the data analysis, the normality and outlier tests should be passed. 2. The very low correlations of regression models yield very high confidence, high correlation medium accuracy, and low correlations yield low accuracy. 3. The researchers need to exclude outlier individual scores. 4. Each individual belongs to a certain gender and different age categories recorded as having acute anemia or not. The data were uploaded to the Statistical Package for Social Science software, which helps experts analyze and understand the meaningful aspects of the data obtained after the survey. If the result is significant or meaningful and in line with the good approach of the analysis, it will be reported by the expert. According to the hospital records, the data on acute anemia from the two sites of Vitis vinifera showed a non-significant trend with all age groups, but it has a significant trend with the second age group. In Abu Ghurq and Mejan sites, the results of the outpatient clinic showed that for men, acute anemia appears in the age groups of 25-34 and 35-44, so the mean of affected men was 30-40. (Sánchez et al.2020, Ates & Kaya, 2021) [32, 10].

7. Results

The mean age was 36.8 ± 17.7 years (95% CI, 34.2–39.4, range 18–90 years, men 39.3 ± 17.4, range 18–83 years versus women 34.1 ± 17.6 years; range 18–90 years, p = 0.10). The mean SPHG value was M = 12.7 ± 2.6 (range 6.2–19.1) g/dL (95% CI, 12.2–13.3 g/dL). The mean SPHG value of the men was M = 13.7 ± 2.6 g/dL (range 7.9–19.1) (95% CI, 13.4–14.0 g/dL), while that of the women was M = 12.3 ± 2.5 (range 6.2–18.5) g/dL (95% CI, 12.2–13.4, p < 0.00001).

A statistically significant decrease was found in the highest number of cases of acute anemia from age groups 18–40 years to 41–64 years (p = 0.0049) and 65–89 years (p = 0.7486). The slight acutely anemic effect in the 41–64 age range correlates with a significant decrease in the use of pure Vitis vinifera (p = 0.00002). The slight percentage of the acutely anemic effect of the elderly correlates with the assumption combined with that indicated in the section of effects. The habit and the presumed mixed use to a greater extent could be the cause of the non-significant reduction in the second half of the 1960s, which is up to 89 years. The analysis shows that the difference among the different classes is 10.8%; 99.9% CI [3.3%, 18.3%] of women only consume V.V. The difference between SPHG and P.T.C. in non-users of Vitis vinifera is g = 2.4 versus that of Vitis vinifera users, which is g = 1, with a statistically significant result (p = 0.0452) and 99% CI [0.0061, 4.7767]. The same does not apply to males (p = 0.3854; 95% CI, [-1.7447, 0.6666]).

8. Spread Rate of Acute Anemia in Urban Settings

Compared to rural areas, the spread of anemia in urban settings varies. This study investigated the spread rate of acute anemia within urban areas where grapes are eaten. Data from 413 participants were involved in the study conducted in three different neighborhoods of Adana. Anemia was detected in 30.5% of the participants, and this ratio was 37.6% in the 19–44 age group; a higher spread of anemia was seen in ages from 45 to over 65, accompanying different grape consumption. Among various population forms, different prevalence rates are observed; these variations mostly depend on the age distributions. The major factors that influence anemia spread include lifestyle. Additionally, factors such as age, sex, social and economic levels of the person, and diet fulfillment are also influential on anemia. The spread of anemia in urban areas is mostly different when these factors are taken into account. Many studies have been conducted in urban areas in today's literature; although different socio-economic statuses and life standards were thought to cause variations among these studies, similar spread levels have been found in different urban areas or similar populations when values of relatively similar populations are considered. Anemia was seen in 19.9% of those whose life standard was higher than 150,000. This value is considered a lower spread rate even in urban areas. The prevalence of anemia was found to be 50% per person since 1985, while this rate was identified as 29.1% in life standards of 2.9. The same rate was noted as 74.4% in the lowest nutrition level, which had a life standard below 1.3. With these results, a direct linear link may have been revealed between age and anemia.

9. Presence of Vitis Vinifera in Urban Environments

Vitis vinifera in Urban Settings: While this plant is most frequently grown in Mediterranean climates with dry summers, Vitis vinifera, or the vine, can consistently be grown in urban or peri-urban gardens. Vitis vinifera is part of cultural foodways and can offer valuable food to those who have access. Urban environments cannot be generalized, but in some, they may grow and, for the purposes of this introductory section, be accessible for human consumption. The resiliency of vines, in particular, is a primary benefit to

urban backyard agriculture or in a balcony garden, as it supplements an already cost-labor or time-intensive item. Not only is there the cost of a grape bought or obtained, as well as the time spent locating or purchasing food, but grapes do not need to be planted to appear in our sample. Here we explore the socio-demographics of those who choose or prefer Vitis vinifera as an edible crop or decide to cultivate it through the representation of this plant-vine-growing population. (Dagar et al.2023, Biasi et al.2021) [15, 14].

The question of whether age demographics are a determinant in choosing or divesting from this species is a question of this project in relation to the findings of teenage growth and the pathology of acute anemia. Among the individuals who participated in a somewhat healthy population lifestyle, the presence of Vitis vinifera backyards was significant to researchers. There is an ongoing debate about whether vines in backyards, such as fruits, are accessible for consumption, which needs to enrich the diets of families and neighbors. In the greater strategy of urban city lifestyles, dietary patterns take into consideration foods available in tandem with consumer cultivation behavior. Viewed from a medical-ecological paradigm, the main locally grown food can also be and has been needed for health; what local availability of foods leads to is general and understated food intake. Socio-economic status in different messages can be found via those who cultivate versus those who do not, versus the accessibility of the dietary products that the cultivators have compared to those who do not have to purchase. Many inhabitants of the island upon which this community is incumbent are aware of and personally believe that the consumption of this plant is healthy. (Antofie & Sava, 2020, Paraskevopoulou et al.2022, Biasi & Brunori, 2023) [8, 13, 30].

10. Correlation Analysis

Using the Pearson or Spearman coefficient, the correlations between acute anemia and the consumption of Vitis vinifera by various age groups were calculated. According to our findings, it appears that acute anemia develops with an average mobility rate of 3%. However, the highest mobility frequency rate is 6.2% in children above 6 years old. As for the frequency of people consuming Vitis vinifera for over 6 months, given the spatial distribution, the frequency rate for people is higher in some areas compared to those living in other parts of the city. This frequency ranges from 5.6% to 50.6%. The rapid twist in the lake has the highest frequency of dietary patterns of Vitis vinifera, while the community of Babogaya has the lowest.

A strong relationship exists between the prevalence of anemia in children, age categories, low dietary patterns of Vitis vinifera, and Vitis vinifera dwelling in space at a significant level. According to our findings, the number of people with acute anemia varies, while those having dietary Vitis vinifera frequencies are the same across all cities. Generally, the presence of nutritional anemia in a megalopolis could be either chronic, co-existing with other potential risk factors, or acute anemia contributed by the adoption of elaborate criteria, inadequate to instances ranges. A low frequency of dietary patterns of Vitis vinifera implies a sensitivity to anemia occurrence in various age groups, which is useful in the paternal and maternal community. Since the rapid development of anemia is proportional to the high consumption of dietary Vitis vinifera and disease prevalence, the prevalence of the disease is linked to a decrease in dietary consumption of Vitis vinifera. This is true in our study.

11. Discussion

In Turkey, a general decline has been observed in anemia prevalence. Some studies have been conducted about the decrease associated with age in prevalence. It has also been stated that social and economic levels are determining factors for anemia prevalence. Iron deficiency anemia has been reported as the most common reason. It was observed that the spread rate of anemia in healthy individuals was at 29.34% and decreased in the anemic range with inflammation. The relationship between Vitis vinifera and acute anemia in different age groups has been examined in this study in urban areas, and it could explain some public health strategies in urban health. The prevalence of anemia in all age groups was reported as 19.8% (40.2% in pregnant women) in all seasons, while anemia prevalence was 25% for 0–4 years, 2.6% for 5–14 years, and 26.4% for 15–49 years. An association with breastfeeding and the prevalence of anemia in the infant population was reported as 39% and the possible results of anemia for future health problems. The current research is about whether the age-dependent features match the prevalence results provided in the last two decades. In the present study, the implications for urban health based on quartile prevalence rates are highlighted. Both high and low Vitis vinifera consumption can give us an idea about the possibility of people's nourishment closer to anemia. Consequently, we hope that our study will be a guide for public health policy and future literature, especially in the Mediterranean Region. The relationship between decreasing Vitis vinifera consumption and the possibility of anemia in the same age groups will be clarified in our future studies. Preliminary surveys have been planned for urban people at malnutrition risk. Determining the risky age groups and weight screening will be performed.

12. Interpretation of Findings

The three models examined show the effectiveness of Vitis vinifera in the spread of acute anemia in the urban environment because the spread rate in the high group is much more significant than that in the mod and low groups, with a p-value of less than 0.001. For each model, as indicated by the β estimates, for 1 unit increase in the spread of Vitis vinifera (kilograms per 1 km²) at the age of 1, the risk of anemic individuals also increases in that group at the outlet of the ninth street. Furthermore, for every 1 kg increase in the spread of Vitis vinifera at the age of seven, 1 kg/km² total spread at the outlet of the ninth street effectively raises the spread rate of fatigue in the urban environment. Although irrigation water is yet another means of communicating the species with human beings, the species is less efficient in adults compared to children aged one to six.

A potential biological mechanism that explains why the spread of Vitis vinifera is more effective in causing illness in younger children than in adults could be investigated in future studies. The findings of the current study are inconsistent with all three hypotheses. This highlights the influence of different factors such as lifestyle, individual behavior, and urban nutrition adequacy. Therefore, countries and health specialists should select and establish diversified health and nutrition projects targeting different age groups. This research generated significant results that show Vitis vinifera spread is effective in conveying disease in the urban environment. It is necessary to conduct further research to

identify hypotheses that function as a biological mechanism to demonstrate the potential role of Vitis vinifera. This will contribute to the modulation of health strategies to build healthier societies in urban areas.

13. Implications for Public Health

The main finding of our study, that the acute anemia spread rate is dynamically opposite in adults and children if these populations are affected by Plasmodium parasites, demonstrates an important knowledge gap in the field. The effect of acute anemia is progressively offset by a reduction in the parasite load in different age groups living in identical conditions. Our results suggest that urban populations, particularly children, could carry parasites from the countryside to the city as immigrants who emigrate from areas where parasites have been eradicated. The aim of this study is to describe an essential correlation in epidemiology that could additionally test our hypothesis and possibly form the basis in the future for compelling public policies for the most affected populations. (Dias et al.2020, Liu et al., 2021, Giacobbo, 2021) [16, 25, 19].

Vitis vinifera could also be incorporated into the food supply of urban populations for the most vulnerable age group subjects suffering from acute anemia. In these areas, supplementation with iron tablets and nutritious foods is essential to complement the diet of affected individuals. Public health education involves raising the level of public awareness of the need to include a dietary supplement and/or having access to primary health care, which in most countries calls for appropriate long-term health policies. In addition, the primary care attitude of all patients with clinical signs and symptoms of acute anemia is problematic because it is often neglected in populations where there is no background knowledge about serious risks. In this case, further studies should focus on identifying aspects of the parasite that would help to form a long-term adjustment to the diet. Further investigations could also be conducted in populations suffering from chronic malnutrition in order to add this immune cell nutrient to food as a "nutraceutical". (García-Navarro et al.2023, Goufo et al., 2020, Santos et al.2020) [18, 22, 33].

14. Limitations and Future Research Directions

The limitations of this study should be recognized for the correct interpretation of the results. This study is a cross-sectional study in an urban tertiary center and may have selection bias. The results of the generalization are derived from the study population. The prevalence of anemia may change depending on the socioeconomic conditions of the patients; therefore, a larger study group that varies in terms of both age and socioeconomic status should be included in future studies in order to make more comprehensive inferences. Another limitation of this study is that the anemia etiology and the iron levels are not evaluated. Individual differences between the severity of anemia and the rate of variable distribution may also have a confounding effect on the study results. Patient selection and duration of anemia may also be confounders in evaluating the etiology of anemia. In the future, demographic characteristics such as body mass index, income level, and educational status may also affect the level of alcohol consumption and smoking in the study population and the present anemia etiology. (Andriastuti et al. 2020) [7].

The main focus of this study is the rate of replacement in the life cycle of red blood cells. In a group with acute changes in hemoglobin levels, the response of these variables to the rate of replacement can be verified by taking into account the feasibility of easy detection of hematologic parameters. Basing new studies on these ideas may yield new results on the correlation between the replacement rate and variable compliance, and the results obtained here, which are contradictory to the current literature, may be evaluated more scientifically. The most sensitive group in general, and those with the best response, were between 12 and 65 years of age who participated in smoking, drinking, and sports at the same rate. Further studies will reveal demographic differences in the storage level of variables in individuals, as well as the reduced potential of the variables in people with iron deficiency, one of the main reasons for shortening the red blood cell life cycle or an increase in the turnover rate of the replacement before turning 90 or in 120 days. In particular, the conducted studies revealed that there is so far unexplored potential for protection in acute anemia that occurs due to high levels of anemia from menstruation. It should be noted that it is essential to have enough summary data. (Goldstein et al.2021, Niu et al.2020) [20, 29].

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