Research trend of Medical Anthropology Quarterly Journal

Primary research of the journal profile is helpful for us to conduct a simple research review to obtain a basic understanding of the related field. The journal profiles include research themes and trends, changing keywords, theories, methods, techniques, and author profiles. Medical Anthropology Quarterly is an international journal that publishes research and theory in all areas of medical anthropology and is one of the very few journals devoted to publishing anthropological work on health, illness, and health care. Its goal is to stimulate the development of essential theories, methods, and debates in medical anthropology and to explore the links between medical anthropology, the broader field of anthropology, and neighboring fields in the humanities, social sciences, and health-related disciplines, including public health and clinical practice (Medical Anthropology Quarterly, 2022).

The datasets I will use for this project are acknowledged from the UBC library. The collected datasets between 1995 and 2022 consist of authors’ nationalities, research domain, number of citations, research areas, document types, and MeSH. Medical Subject Headings, or MeSH, is a controlled vocabulary thesaurus used by PubMed to index articles in the scientific literature (NCBI, 2022).

I collect and summarize data every five years and analyze each year's data with SPSS and statistical techniques. The key questions that we need to solve are as follows:

1: *How do these variables change over time?* *2. Whether are these variables normally distributed or not?* 3: *Are these variables related or different from each other?*

1. *How do these variables change over time?*

Number of Citations

The number of citations for different year periods is independent of each other. The bar chart shows that older papers are cited more often, and the citation rate has decreased quickly over the recent five years. This phenomenon indicates that those time-tested papers are more easily convinced in the medical anthropology.

Research Domain

From the first following bar chart, we could find that most papers in the Medical Anthropology Quarterly journal are about life science biomedicine, indicating that mainly published works are under the category of life science biomedicine. However, other domains have started to be paid attention to.

From the second bar chart, we could find that the number of papers in the physical science domain is less than the number of papers in the arts humanities domain. The arts humanity domain gets more attention from scholars between 2008 and 2017 and gets much attention between 1998 and 2002. However, fewer scholars have focused on the arts humanity domain in recent five years. And the physical science domain has gotten more and more attention from scholars over the past few years.

Physical anthropology examines the origin, development, and diversity of humans. It is now possible to examine the composition of human populations and formulate hypotheses concerning their future by using objective methods of analyzing various kinds of traits, including their frequency, function, or phylogenetic significance mathematically (Tuttle, 2018). The development of anthropology gradually began to draw on the power of science to achieve a new fusion of humanity and science

Countries

From the bar chart, we can find that articles written by scholars from the United States occupy a significant part of the journal. In contrast, those written by scholars from Britain and other countries only occupy a small part. With the change of years, the number of articles is increasing. The gap between the number of articles published by American scholars and the number of articles published by scholars from other countries is also increasing.

Discipline

From the bar chart, we could find that most papers published in this journal are about psychology, behavioral science, and health care sciences services among the five selected research areas. There has been no significant change in the number of papers in medical ethics and family study areas over the past 20 years. However, the number of papers in health care science service is still increasing under the covid epidemic, which indicates that healthcare science service is getting more and more attention from scholars.

According to Adams and Nading (2020), the editors at Medical Anthropology Quarterly recognized the need for an online space for anthropologists to capture and think about the pandemic events. In response, medical anthropologists shared dozens of insights and reflections in the COVID-19 Responses blog series. They also shared the conduct of the code of anthropologists during the pandemic: “we observe. We experience. We participate. We write.” Moreover, we embed critical insights into situations that seem evident and implicit.

Document type

From the first following bar chart, we can find that the number of articles has gradually increased over time, and the number of papers available for reference has also increased. As a result, there is an upward trend of academic articles ready for reference.

From the second following bar chart, we can find that the types of articles are more diversified over time. The works published in the Medical Anthropology Quarterly journal are no longer limited to articles. At the same time, the proportion of articles and other types of works are gradually balanced. We can use multiple types of work to illustrate our idea or findings.

Keywords and topics

I collect some medical articles focusing on male and female topics. As shown in the first following bar chart, there are relatively more medical articles on female topics than on male topics. This shows that women, as a vulnerable group, receive more attention and face more medical problems. Overall, the number of articles on gender has remained relatively flat over the past 20 years but has increased dramatically from 2013 to 2017.

I also collect some medical articles focusing on adult and child topics. As shown in the second following bar chart, there are relatively more medical articles on adult topics than on child topics. This shows that adults, as a larger group, involve more and more complex medical anthropological problems. Overall, with the development of the economy and medicine, the number of articles on the adult topic has decreased gradually over the past 20 years but has increased dramatically from 2013 to 2017. The number of articles on child-topics has also decreased slowly over the past few years.

1. *Whether these variables normally distributed or not?*

Exploratory Data Analysis

The preliminary analysis of the data is the basis of the study. Exploratory data analysis (EDA) refers to all the ways we have to explore or summarize our data at an initial "glance". The primary use of EDA is to help understand data before making any assumptions. It helps to find apparent errors, better understand patterns in data, detect outliers or outlier events, and analyze data distribution with some statistic indices such as count, mean, median, max, upper and lower quartiles, and variance.

Mean is used to describe the average level of the data set, but it is not sensitive to abnormal data and cannot reflect the actual situation of the data. Quartiles can solve the problem of insensitivity of outliers to the average value. The standard deviation tells how volatile the data is or how stable it is. Skewness measures the asymmetry of the probability distribution of a real-valued random variable about its mean. Kurtosis measures the "tailedness" of the probability distribution of a real-valued random variable.

I use descriptive statistics in SPSS to explore the data distribution of publications, works from the USA, the number of articles, a subfield of psychology, and citations over the years. The results are listed as follows. From the table, we can find about 47 publications each year; half of them are from the USA, half of them are articles, and one-third are about psychology. The number of publications and citations varies significantly by year.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Descriptive | | Publications | USA | Articles | Psychology | Citation |
| Mean |  | 46.93 | 34 | 28.26 | 18.926 | 584 |
| 95% Confidence | Lower Bound | 38.27 | 27.86 | 25.72 | 16.23 | 401.61 |
| Interval for Mean | Upper Bound | 55.58 | 40.14 | 30.8 | 21.622 | 766.39 |
| 5% Trimmed Mean |  | 46.19 | 33.43 | 27.91 | 18.693 | 569.7 |
| Median |  | 43 | 32 | 27 | 18 | 557 |
| Variance |  | 478.917 | 240.615 | 41.353 | 46.456 | 212569.308 |
| Std. Deviation |  | 21.884 | 15.512 | 6.431 | 6.8159 | 461.052 |
| Minimum |  | 20 | 14 | 20 | 0 | 8 |
| Maximum |  | 89 | 65 | 43 | 41 | 1419 |
| Range |  | 69 | 51 | 23 | 41 | 1411 |
| Interquartile Range |  | 43 | 24 | 9 | 7 | 863 |
| Skewness |  | 0.408 | 0.568 | 0.593 | 0.743 | 0.433 |
| Kurtosis |  | -1.165 | -0.757 | -0.044 | 5.287 | -1.157 |

Normal distribution test

From the Skewness and the Kurtosis, we could find that publications on psychology and citation are not very normally distributed. Then I use the Kolmogorov-Smirnova test and the Shapiro–Wilk test in SPSS to test these. The [null hypothesis](https://en.wikipedia.org/wiki/Statistical_hypothesis_testing) of this test is that the population is normally distributed.

The following table shows that the [p-value](https://en.wikipedia.org/wiki/P-value)s of publications psychology and citation are less than 0.05. The null hypothesis is rejected, and there is evidence that the data tested are not normally distributed.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tests of Normality | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| publications | .167 | 27 | .051 | .918 | 27 | .035 |
| USA | .119 | 27 | .200\* | .930 | 27 | .068 |
| Articles | .100 | 27 | .200\* | .937 | 27 | .104 |
| psychology | .245 | 27 | .000 | .814 | 27 | .000 |
| citation | .152 | 27 | .112 | .912 | 27 | .025 |
| \*. This is a lower bound of the true significance. | | | | | | |
| a. Lilliefors Significance Correction | | | | | | |

3: *Are these variables related or different from each other?*

Articles and review articles

I collect the number of articles and the number of review articles in different years. As shown in the bar mentioned above, the variation trend of the number of articles is inconsistent with that of the review articles. Thus, I use the paired sample T-test in SPSS to test the differences between the two variables. This test is also called the student's t-test and can be used to determine if the means of two sets of data are significantly different from each other.

As shown in the following table, the p-value is less than 0.05. Thus, the null hypothesis is rejected, and the differences between article and review articles are statistically significant.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Paired Samples Test | | | | | | | | | |
|  | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
| Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Pair 1 | Articles - Review Articles | 7.778 | 15.280 | 2.941 | 1.733 | 13.822 | 2.645 | 26 | .014 |

Female and male

Similarly, I collect the number of publications about females and males in different years. As shown in the bar above chart, the number of works about females is more significant than that of males. Then, I want to know whether the changing trend of the number of works about females is significantly different from that of males. Thus, I use the two related sample tests in SPSS to test the difference between the two variables.

|  |  |
| --- | --- |
| Test Statistics | |
|  | female - male |
| Z | -3.781b |
| Asymp. Sig. (2-tailed) | .000 |
| a. Wilcoxon Signed Ranks Test | |
| b. Based on negative ranks. | |

As shown in the table, the p-value is less than 0.05. Thus, the null hypothesis is rejected, and the differences between article and review articles are statistically significant.

4: *How do these variables change over time?*

Although we have grouped the data by year and compared the changes of different variables with years with a bar chart, whether the data is correlated with time remains to be analyzed and tested. If there is a correlation, figuring out how the relationship changes from year to year is an important question. Thus, I use the Pearson correlation test and Linear regression to test and model the correlation.

From the bar charts, I find that the number of articles in the health care science service area has increased over the years. Besides, I also find that the number of works from the USA has also increased over the years. In addition, the number of review articles has been increasing in the past few years. Thus, I would like to find the relationship between those variables over the years.

Correlation test：

The Pearson correlation coefficient measures the linear correlation between two sets of data. It is the ratio between the covariance of two variables and the product of their standard deviations; thus, it is a normalized measurement of the covariance. The result always has a value between −1 and 1. The correlation test seeks to find a type of dependency (here, a linear correlation) that may exist between two components, Xi and Xj.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Correlations | | | | | |
|  | | USA | Health Care Sciences Services | Review Articles | year |
| USA | Pearson Correlation | 1 | .413\* | .935\*\* | .745\*\* |
| Sig. (2-tailed) |  | .032 | .000 | .000 |
| N | 27 | 27 | 27 | 27 |
| Health Care Sciences Services | Pearson Correlation | .413\* | 1 | .259 | .175 |
| Sig. (2-tailed) | .032 |  | .193 | .383 |
| N | 27 | 27 | 27 | 27 |
| Review Articles | Pearson Correlation | .935\*\* | .259 | 1 | .843\*\* |
| Sig. (2-tailed) | .000 | .193 |  | .000 |
| N | 27 | 27 | 27 | 27 |
| year | Pearson Correlation | .745\*\* | .175 | .843\*\* | 1 |
| Sig. (2-tailed) | .000 | .383 | .000 |  |
| N | 27 | 27 | 27 | 27 |
| \*. Correlation is significant at the 0.05 level (2-tailed). | | | | | |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | | | |

The table shows that the Pearson correlation coefficient between years and work from the USA is 0.745, and the p-value is less than 0.05. The hypothesis is rejected, and there is a prominent correction in the number of works from USA and years. Moreover, the Pearson correlation coefficient between years and review articles is 0.843, and the p-value is less than 0.05. There is also a strong correlation between years and the number of review articles. However, there is no significant relationship between years and the work in the Health Care Sciences Services area.

Linear regression

I use linear regression since ability levels in similar subjects might also affect writing performance. I produced a scatterplot to investigate whether there is a relationship between the two variables of reading and writing scores. Linear regression is a linear approach for modeling the relationship between the dependent and independent variables. The simple linear regression model with only a reading score as a predictor for writing score captures the association between reading and writing scores.

The USA, with the year

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model Summary | | | | | | | | | |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
| R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .745a | .556 | .538 | 10.546 | .556 | 31.250 | 1 | 25 | .000 |
| a. Predictors: (Constant), year | | | | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ANOVA | | | | | | |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 3475.578 | 1 | 3475.578 | 31.250 | .000b |
| Residual | 2780.422 | 25 | 111.217 |  |  |
| Total | 6256.000 | 26 |  |  |  |
| a. Dependent Variable: USA | | | | | | |
| b. Predictors: (Constant), year | | | | | | |

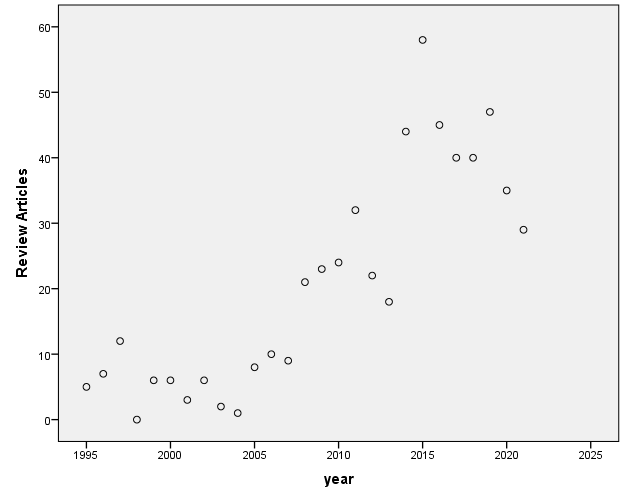
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Coefficients | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | -2890.962 | 523.233 |  | -5.525 | .000 |
| year | 1.457 | .261 | .745 | 5.590 | .000 |
| a. Dependent Variable: USA | | | | | | |

The ANOVA table shows that the p-value is less than 0.05, which indicates that the linear regression model is statistically significant. The Coefficients table shows that the regression model can be written as: y=1.457×x-2891.

Review articles with the year

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model Summary | | | | | | | | | | | | | | | | |
| Model | R | | R Square | | Adjusted R Square | Std. Error of the Estimate | | Change Statistics | | | | | | | | |
| R Square Change | | F Change | | df1 | df2 | | Sig. F Change | |
| 1 | .843a | | .711 | | .699 | 9.279 | | .711 | | 61.368 | | 1 | 25 | | .000 | |
| a. Predictors: (Constant), year | | | | | | | | | | | | | | | | |
| b. Dependent Variable: Review Articles | | | | | | | | | | | | | | | | |
| ANOVA | | | | | | | | | | | | | | | |
| Model | | | | Sum of Squares | | | df | | Mean Square | | F | | | Sig. | |
| 1 | | Regression | | 5284.105 | | | 1 | | 5284.105 | | 61.368 | | | .000b | |
| Residual | | 2152.636 | | | 25 | | 86.105 | |  | | |  | |
| Total | | 7436.741 | | | 26 | |  | |  | | |  | |
| a. Dependent Variable: Review Articles | | | | | | | | | | | | | | | |
| b. Predictors: (Constant), year | | | | | | | | | | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Coefficients | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | -3586.073 | 460.389 |  | -7.789 | .000 |
| year | 1.796 | .229 | .843 | 7.834 | .000 |
| 1. Dependent Variable: Review Articles | | | | | | |



Similarly, the linear regression model between the number of review articles and years is statistically significant. As shown in the Coefficients table, the regression model can be written as: y=1.796×x--3586

Conclusion:

This article aims to understand the research trends in Medical Anthropology Quarterly by querying data on author nationality, research area, citation frequency, research area, literature type, and grid title. First, I collect these data from the UBC Library. Second, I group these data every five years to get bar graphs and a visual display of the data. Then I use SPSS to understand the distribution of the data. Finally, I also use SPSS to analyze the relationship or differences between the variables. After these steps, I have a basic understanding of the research trends.

The data analysis gave me a basic understanding of the Quarterly Journal of Medical Anthropology. For the citation bibliography, the more distant the year, the more citations. In terms of research areas, physical science is coming to the forefront in anthropology, and more and more studies are reflecting this trend. For countries, the United States continues to be dominant, with the number one publication in the United States since 1998. Regarding discipline, psychology, and behavioral sciences, Healthcare Science services occupy the top three, and surprise, due to the covid pandemic, Healthcare Science services occupied the first place in 2018-2022. Comparing women and men in the MeSH title, I find that women want more topics than men. Similarly, for adults vs. children in MeSH, adults have more topics than children.

Despite the limitations of my methodology and classification, I think the data analyzed here provide helpful information for those wishing to summarize trends in medical anthropology in the United States.

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