

A RESEARCH INVESTIGATION OF HONG KONG CHINESE WOMEN: AN EXPLORATORY ANALYSIS OF HEADACHES AND THEIR CORRELATION WITH INSOMNIA, ANXIETY, AND DEPRESSION.

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**ABSTRACT**

Old senior female citizen tension headaches are a big concern for women, making the world's greatest headache problem even worse. Chinese women in Hong Kong often have trouble sleeping, feel worried, and have been depressed. The signs often make each other worse and talk to each other. This research examines the correlation between headache and sleeplessness among women in Hong Kong, China, and the mediating effects of sadness and anxiety on this association. A stratified random sample has been employed to distribute 850 questionnaires, resulting in the analysis of 646 valid responses. This study used a quantitative research methodology. The secondary analysis was augmented with knowledge extracted from relevant sources, while primary data was collected with standardised questionnaires addressing population and mental state factors. Probability ratio estimates with 95% CIs, descriptive statistics, as well as analysis of variance were all part of the statistical study that was conducted employing SPSS and Excel. Headaches are more common and more severe when there is a lack of sufficient sleep or cognitive strain, and the results show strong correlations between the two. There was a cycle association among depressive symptoms, headaches, and both disorders; the correlation was strong. A worse standard of life is compounded when women with chronic headaches additionally exhibit signs of sleeplessness and higher degrees of mental anguish. The research highlights the critical necessity of medical systems that work together to treat pain, emotional wellness, and sleeping issues all at once. The results fill a knowledge vacuum in Hong Kong and have real-world consequences for women's illness prevention, adapted treatments, and policymaking that is specific to the necessities of Chinese women in the city.

**Keywords:** Hong Kong Chinese Women; Headaches; Insomnia; Anxiety; Depression.

**INTRODUCTION**

Insomnia is when one has difficulties for slipping asleep or sleeping too much throughout the day or not getting enough restorative sleep. A headache that lasts for months or even years can be particularly distressing. People who have headaches all the time have relentless pain and trouble doing everyday things. Researchers have established a correlation between frequent headache symptoms and an increased susceptibility to mental health illnesses. Riemann et al.

(2022) observed that the intricate nature of the issue has precluded the inclusion of young individuals with chronic headaches in clinical research evaluating therapy for headache disorders (Riemann et al., 2022). Initial investigations in adults demonstrate that those with this form of headache may derive less benefit from conventional headache therapies compared to those with episodic headaches. As a result, doctors' grasp of the specific needs of this population and the standards for delivering appropriate therapy has significantly diminished. Headaches are quite common, and they impact women more than men, yet there are few good therapies for them. Multiple mental health conditions coexist in many persons and often interact with each other. Anxiety is one of the most frequent and significant mental disorders in the world, affecting one in five young women over their lifetime. It has not only harmed people's health and ability to function, but it has also made their lives worse. Migraine and tension-type headaches (TTH) are the worst of the three headache disorders. They make it hard to sleep, making individuals feel anxious and sad. They make it hard to have fun and go about one's regular life (Meng Wang, 2023). Thirteen percent of Chinese women in Hong Kong who were between the ages of 40 and 60 said they had headaches more than once in the past year (Tang et al., 2020). This study seeks to address the knowledge deficit by assessing the correlation between the frequency and severity of headaches in this demographic and mental health conditions such as depression, anxiety, and sleeplessness.

## **BACKGROUND OF THE STUDY**

Headaches are more common in women than in men during the perimenopausal and midlife years. It mostly affects women, but about 1.9 billion people around the world have it. People of Chinese origin in Hong Kong seem to have trouble sleeping all the time. 39.4% of people had trouble sleeping, and women said their sleep was far worse than men's. People with sleeplessness are also more likely to have anxiety or depression. In fact, about 25% of people with main headaches have anxiety, and 23% have depression (Xie et al., 2022). After controlling for anxiety and depression in a significant community-based study of Chinese women in Hong Kong aged 40 to 60 identified a strong correlation was identified: a 2.2-fold increase in the likelihood of recurrent headache, a 3.2-fold increase for migraine, and a 2.3-fold increase for headache were all linked to sleep disturbances (Yang et al., 2024). This adds to the evidence that not getting enough sleep is a major cause of headaches. Worries, sadness, trouble sleeping, and headaches can all make each other worse. Symptoms may come back in a bad cycle. Insomnia worsens symptoms of headaches and mood swings. There was no statistically significant difference in the prevalence of insomnia symptoms among women with migraine, TTH, or nonspecific headache (Wang et al., 2022). It is essential to conduct a comprehensive investigation on the prevalence and interactions of these elements among Chinese women in Hong Kong. particularly during the middle of life, when headaches and sleep disturbances are most common. The frequency of insomnia symptoms among women with headaches was markedly higher than that of women without headaches (Van Someren, 2021). The correlation among headaches, anxiety, insomnia, and depression in Chinese women from Hong Kong

remains little researched. This study primarily examines anxiety, melancholy, insomnia, and headaches among Chinese women from Hong Kong.

### **PURPOSE OF THE RESEARCH**

This study aims to investigate the correlation between headaches and anxiety, sadness, and insomnia among Hong Kong Chinese women. People know a lot about migraine headaches and tension headaches. It is a global public health issue that affects women more than men. More data show that mood disorders like sorrow and anxiety, as well as sleep problems like not being able to sleep, are frequent among women in Hong Kong and often make each other worse. There is a lack of research on how these elements combine in Hong Kong or how they negatively impact people's daily lives. This study aims to address the gap by examining the correlation among Chinese women in Hong Kong during midlife. The primary purpose of the study is to find out how these components work together to make individuals physically and mentally ill to makes it harder for them to do everyday things and driving their health worse. This research aims to enhance theoretical comprehension and to furnish practical information that can inform strategies for diagnosis to treatment with certainty. The study's primary objective is to improve health policies and culturally sensitive therapies for Chinese women in Hong Kong.

### **LITERATURE REVIEW**

A latest study found that 1.9 billion individuals throughout the world had headaches. Women in their final phases to menopause are more likely to have migraines. Women still have difficulty falling asleep and get headaches a lot. Depression, anxiety, and sleeplessness are all frequent problems that go along with persistent headaches. People in Hong Kong had trouble falling asleep, and women said their sleep quality was much worse than men's (around 39.4%). Individuals who do not take naps or drift off enough do not get the rest they need, and this is often linked to a higher risk of mental health issues and long-term suffering (Lu et al., 2023). additional study demonstrated a robust link among sleepiness and severe headaches within people of all ages. There is one strong link between severe headaches, psychological issues, and sleeping disorders in the majority of people. Women going through the phase of menopause have inclined than women who aren't to have neurological difficulties including headaches and trouble sleeping (Hoang Thi, 2020). The research's outcomes suggest that sociodemographic factors may have impacted the findings. People who have migraines have more probable to have problems, and the severity of these problems has an opposite relationship to the severity of the headaches. The symptoms of headaches have been more likely to happen if it have difficulties with one head and snore all the time. Older Chinese women whose snores at least three times in a row are five times more likely to have headaches of different intensities than women who don't snore. The findings indicate that middle-aged women experiencing sleeplessness, snorting, anxieties, or depressive disorder are at a higher risk of developing headaches. Investigators frequently deploy prospective series analyses to ascertain the aetiology of headaches. It is really important to do research with a lot of people (So et al., 2021). An previous

research aimed to unify internationally distribution figures for tension headaches (in general), chronic migraines (in particular), total headache frequency (THF), and severe headaches lasting more than 15 days in length in duration per month (H15+). Subsequently, such projections shall be juxtaposed to those pertaining to generic headache disorder (GBD), followed by an examination of regional and temporal trends. A secondary objective of this study was to analyse the impact of methodological factors on prevalence estimations (Stovner et al., 2022). There have not been many studies that look at specific areas, thus more study is required to come up with preventative and assistance strategies which work in different cultures.

## RESEARCH QUESTIONS

What is the impact of Anxiety on Hong Kong Chinese women? What is the effect of Depression on Headache?

## RESEARCH METHODOLOGY

**Research Design:** Quantitative data were examined utilising SPSS version 25. Descriptive statistics characterised the sample, while inferential associations were evaluated using odds ratios and 95% confidence intervals. A p-value threshold below 0.05 signifies statistical significance. Validity was assessed by factor analysis, and group differences were analysed using ANOVA. The results were examined utilising SPSS and Excel.

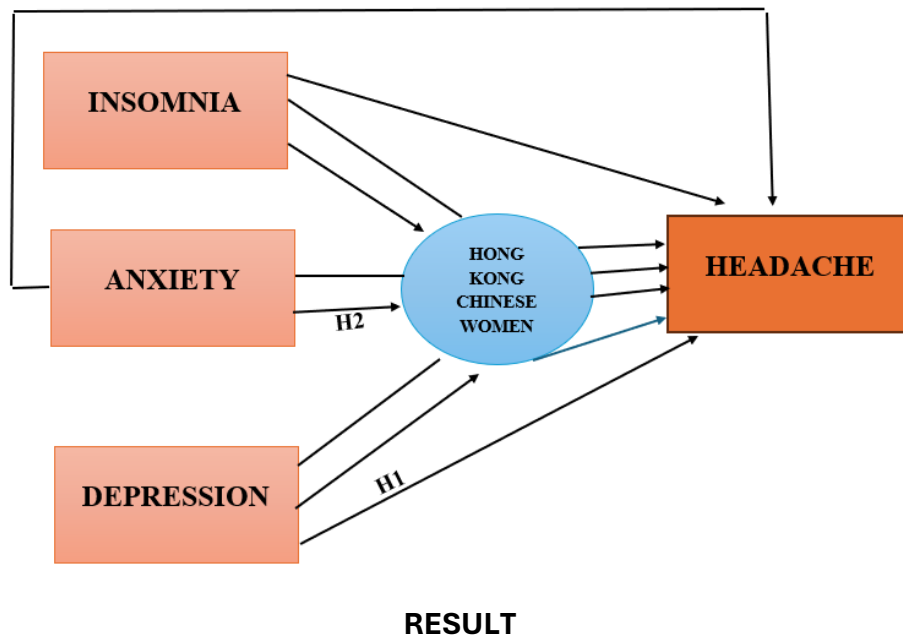
**Sampling:** A stratified random sampling technique was used. The population was divided into mutually exclusive strata (e.g., age, region). Sample sizes for each stratum were allocated in accordance with the population distribution, providing representativeness. Individuals were selected from each stratum with random sampling. RaoSoft suggested a sample size of 615. Out of 850 distributed questionnaires, 686 were completed and returned. In the study, 646 samples were used, with forty replies excluded due to incompleteness.

**Data and Measurement:** Data were collected using standardised questionnaires that documented (A) demographic information and (B) evaluations of online and offline channel attributes employing a 5-point Likert scale. Secondary quantitative data were obtained from online databases.

**Statistical Software:** The statistical analysis was conducted using SPSS 25 and MS Excel.

**Statistical Tools:** The sample's characteristics were determined by descriptive analysis. The constructs of the scale were found to be valid by factor analysis. ANOVA was used to gauge differences between categories. Researchers can measure the strength and direction of links using odds ratios and 95% confidence intervals. Statistical significance was granted to results where  $p < 0.05$ .

## CONCEPTUAL FRAMEWORK



**Factor Analysis:** Discovering previously unknown variables within publicly available data is the fundamental objective of Factor Analysis (FA). When there are no obvious symptoms, doctors often use regression coefficients to diagnose the problem. Finding observable patterns, violations, and defects is the main objective of modelling. For datasets derived from multiple regression analyses, the Kaiser-Meyer-Olkin (KMO) Test is a useful tool. Verification of the model and sample variables' inductiveness has been completed. According to the numbers, there appears to be duplication. The image is more legible as the dimensions are reduced. MO assigns a value between zero and one. The sample size is appropriate if the KMO value is between 0.8 and 1.

Here are the parameters that Kaiser has established: The following criteria have been established by Kaiser as acceptable:

The range is a dismal 0.050 to 0.059, much below the 60–069 average.

Middle grades often fall within the range of 0.70-0.79.

With a quality point score ranging from 0.80 to 0.89.

They marvel at the range of 0.90 to 1.00.

The results of Bartlett's test of Sphericity are as follows: approx. chi-square = 3252.968

df = 190

sig = .000

**Table 1.** Testing for KMO and Bartlett's Sampling Adequacy Measured by Kaiser-Meyer-Olkin 0.875.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.875
Bartlett's Test of Sphericity	Approx. Chi-Square	3252.968
	df	190
	Sig.	.000

Claims for samples are mostly made easier by this. The researchers used Bartlett's Test of Sphericity to determine if the correlation matrices were relevant. As the Kaiser-Meyer-Olkin score is 0.875, the sample is deemed sufficient. The results of Bartlett's sphericity test were negative, with a p-value of 0.00. Since Bartlett's sphericity test returned a positive result, researcher may conclude that the correlation matrix is not an identity matrix.

## INDEPENDENT VARIABLE

**Anxiety:** Anxiety disorders can cause panic attacks, social anxiety, deficient performance, anticipatory worry, and avoidance behaviours. Common anxiety disorders observed in primary care environments include social anxiety disorder (13% lifetime incidence) and generalised anxiety disorder (6.2% lifetime prevalence). These conditions may contribute to or occur without chaperoning anxieties. People with anxiety disorders often have physical symptoms such as palpitations to trouble breathing, and dizziness. Anxiety is a disorder that declines productivity (Sarkar, 2020). Anxiety is a medical condition that impacts various aspects of the body and mind. When someone is at their most anxious or mentally unwell. one can start to feel worried or anxious. A lot of folks find it beneficial when they are anxious. People with anxiety, which is a significant mental illness, may do things that affect other people in society (Szuhan & Simon, 2022).

**Depression:** Depression is a familiar mental state that causes individuals to feel unhappy to empty if they do not care about things they used to enjoy. It may have a big effect on a person's thoughts. It also includes feelings and the ability to do ordinary things with not simply their mood changes. This scientific and behavioural comprehension of depression resembles other medical disorders (Gaynes et al., 2020). Depressive disturbances are the most significant health problem in the world. Depression is not having normal mood swings and emotional reactions to everyday happenings. Everything in life may be affected. Problems at work or school may cause or add to this. Anyone may become depressed. People who have been through anything traumatic, to abuse or the death of a loved one, are more likely to become depressed. Women are more likely than men to be depressed (Depressive disorder (depression), 2025). A depression constitutes a neurological ailment that changes how one feel and think, and it

persists over no less than a two-week period. Symptoms of depression include trouble focussing, sadness, loss interest or enjoyment, trouble sleeping or eating, tiredness, shame or poor self-esteem may make the condition worse (Zhdanova et al., 2021).

### **MEDIATING VARIABLE**

**Hong Kong Chinese Women:** When people in the Hong Kong Special Administrative Region (HKSAR) say Hong Kong Chinese women they usually suggest women who are of Han Chinese descent. Most people in Hong Kong (91.6%) are of Chinese descent (Tang et al., 2020). Most of this group speaks Cantonese to Taishanese to Hakka with Hoklo or Tanka, while other Han subgroups in the area have also learnt Cantonese. There were 4.1 million women and 3.4 million men in Hong Kong (not counting foreign domestic workers) in 2021. This means that there were 834 men for every 1,000 women (Meng Wang, 2023). Most Chinese women in Hong Kong do not merely call themselves "Chinese." They do not identify with either one; instead, they identify with the local identity ("Hongkonger") or a mix of the two ("Hongkonger in China"). This offers a different view on civic and cultural issues.

### **DEPENDENT VARIABLE**

**Headache:** There are four main types of headaches: (i) ordinary headaches, (ii) unpleasant headaches induced by stress, and (iii) diseases that affect the head itself, including trigeminal autonomic cephalalgias. Secondary headache disorders are headaches that are caused by another medical condition. one may group these ailments by their underlying cause: vascular, neoplastic, infectious, or linked to intracranial pressure/volume. Most people have headaches at some point. Moderate analgesics to nonsteroidal anti-inflammatory drugs with triptans, and gepants with lasmiditan are all good short-term therapies for migraines which are the worst sort of headache (Robbins, 2021). The medical word for pain or discomfort that extends from the head to the neck is cephalalgia. A headache is another name for it. A variety of pressures from mild to acute to pulsating, may be felt by humans. It may be localised, affecting only one spot on the head, or unilateral to affecting both sides. It could be short-lived or last for days (Stovner et al., 2022).

**Relationship between Anxiety and Hong Kong Chinese women:** Intense fear and worry, along with physical symptoms, are common signs of the many different types of anxiety disorders. Most individuals who undergo surgery will probably feel anxious to some degree. Individuals who controlled therapy that wasn't too evident had more anxiety and behavioural problems (Tang et al., 2020). Women in Hong Kong today have more sumptuous schooling and are more likely to work than men. But women feel a lot of societal stress because of their responsibilities to themselves to their families, and their communities (Yang et al., 2024). According to national data, the total rate of generalised anxiety disorders in Hong Kong is 4.1% over 6 months. This shows that young women, particularly those in college, are more anxious than other groups (Sarkar, 2020). This is primarily because of gendered societal standards and academic



pressures. Females are expected to prioritize their academics and work with their caring duties more than men. People who are always anxious can't make good judgments to lead to dangerous behaviours like smoking to drinking, and not obtaining sufficient sleep. All of these things are bad for individual health (Xie et al., 2022). The COVID-19 pandemic made these problems even worse by closing schools and care services. People's anxieties may become worse even if they can get therapy if they feel like they have to preserve the peace and do their cultural duty.

*"H<sub>01</sub>: There is no significant relationship between Anxiety and Hong Kong Chinese women."*

*"H<sub>1</sub>: There is a significant relationship between Anxiety and Hong Kong Chinese women."*

**Table 2.** H1 ANOVA Test.

ANOVA					
Sum					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	38250.740	431	5665.134	1021.472	.000
Within Groups	501.620	214	5.270		
Total	38752.360	645			

Substantial findings are derived from this inquiry. A p-value of .000 and an F-value of 1021.472 indicate that there is statistical significance below the .05 alpha level. The results show that the null hypothesis is rejected, and *"There is a significant relationship between Anxiety and Hong Kong Chinese women"* is accepted.

**Relationship between Depression and Headache:** Each condition influences the difference in a complicated and back-and-forth way to create the interaction between depression and headache more complicated. Migraines and stress headaches are characteristic of bodily signs of sadness. People who have regular headaches are more likely to display signs of depression since they usually feel emotionally and physically fatigued due to their lower quality of life (Chai et al., 2020). The mechanisms of depression and migraine have parallels, such as serotonin system dysfunction, neuropeptides including CGRP and PACAP, neurogenic inflammation, and alterations in the HPA axis (Chan & Sun, 2021). When someone is sad, their headaches may become worse and last longer. Patients with chronic headaches often have anxiety and depression (64% of the time), and depression is believed to make it more likely that episodic migraines will turn into chronic migraines (Robbins, 2021). It appears that the best thing to do would be to treat both ailments at the same time, based on these connections. Therapeutic therapies, including psychological therapy, SSRIs/SNRIs, and tricyclic antidepressants, may help one feel better if one have both headaches and depression (World Health Organizations, 2025).

*"H<sub>02</sub>: There is no significant relationship between Depression and Headache."*



*"H<sub>2</sub>: There is a significant relationship between Depression and Headache."*

**Table 3.** H2 ANOVA Test.

ANOVA					
Sum					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	39520.860	419	5628.944	1068.215	.000
Within Groups	520.430	226	5.345		
Total	40041.290	645			

Substantial findings are derived from this inquiry. There is statistical significance below the .05 alpha level, as shown by the F value of 1068.215 and the p-value of .000. Accordingly, researcher accept the alternative hypothesis, *"There is a significant relationship between Depression and Headache"* and reject the null hypothesis.

## DISCUSSION

This study of Chinese women from Hong Kong found that headaches, insomnia, anxiety, and melancholy were all strongly linked. Statistical studies show that headaches are more likely to happen and hurt more when people are worried and cannot sleep. Depression makes things worse. This backs up what other studies have found: that sleep problems and mood disorders make each other worse, which makes headaches hurt more and makes people feel worse, which in turn makes it harder to sleep. Both anxiety and depression significantly affect headache sensations, as shown by the F values and p-values below 0.05. This affirms the rejection of the null hypothesis. Due to the intricate interactions of physical to psychological with social factors, these connections underscore the diverse nature of headache disorders. Hormonal changes, cultural expectations, and more caregiving tasks may make the stress and lack of coping tools that midlife women in Hong Kong feel even worse. This study manages a substantial gap in headache research by concentrating on Hong Kong Chinese women who have been mostly overlooked in previous studies. It is essential to delineate probable causal pathways to enhance the understanding of the cultural environment around women's health concerns and to develop intervention-based and longitudinal research designs.

## CONCLUSION

This research underscores the significant correlations between headaches, insomnia, anxiety, and depression in Chinese women from Hong Kong, particularly around midlife when these symptoms are most prevalent. The findings indicate that anxiety and depression are not only prevalent but also significantly influence the severity and duration of headache disorders. In the same way, not getting enough sleep makes disease worse by being both a cause and a symptom. Statistical evidence demonstrates strong links between psychological stress and sleep issues and the frequency and severity of headaches. These findings in Hong Kong raise significant public health and medical issues. Instead of only treating migraines with one kind of

therapy, it is important to use holistic techniques that mix psychiatric care with sleep therapies. Simultaneously addressing insomnia and mood disorders with headache management may lead to improved outcomes, enhanced quality of life, and decreased mobility. This research helps fill a major gap in the information about women's health in Hong Kong and adds to what researchers already know about the subject. Extending ongoing investigations might enhance future research's comprehension of fundamental processes and evaluate the effectiveness of integrated treatments.

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