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Original Article

# Navigating CAM: Motivations and Outcomes of Complementary and Alternative Medicine Use in Women with Breast Cancer

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## Abstract

This cross-sectional study investigates the prevalence, motivations, and perceived outcomes of complementary and alternative medicine (CAM) use among women with breast cancer. A sample of 200 women diagnosed with breast cancer within the last five years completed a structured online survey reporting on CAM usage patterns, motivations, and outcomes. Findings reveal a high prevalence of CAM use, with 70% of participants incorporating therapies such as herbal supplements, mind-body practices, and dietary supplements into their care. The primary motivations for CAM use included symptom relief (65%), emotional support (50%), and improvement in quality of life (40%). Participants reported significant physical and emotional benefits, with 60% citing improvements in physical symptoms and 50% in emotional well-being. Additionally, 45% perceived an enhanced quality of life through CAM use. Socioeconomic factors, such as higher income and education levels, were significant predictors of CAM adoption, suggesting disparities in access. These findings underscore the role of CAM as a supportive care strategy for symptom management and emotional support, highlighting the need for healthcare providers to discuss CAM options with patients to facilitate safe and informed integration with conventional treatments. Limitations include the cross-sectional design and reliance on self-reported data, which may influence accuracy. Future longitudinal research could explore long-term impacts and address barriers to access for lower-income populations. This study contributes to understanding CAM's role in breast cancer care and underscores the importance of patient-centered approaches to integrative oncology. While the findings offer valuable insights for patient-centered care, limitations include the reliance on self-reported data, which may introduce recall bias, and a sample limited to specific cultural and regional contexts.

***Keywords:*** *Breast Cancer, Complementary and Alternative Medicine (CAM), Cross-sectional Study, Emotional Well-being, Holistic Health, Integrative Oncology, Patient-centered Care, Quality of Life, Symptom Relief, Socioeconomic Factors,*

## Introduction

The experience of breast cancer doesn't carry the same immediate sense of life-threatening danger or physical harm typically associated with external trauma.(Alkhyatt *et al*., 2012). In recent decades, complementary and alternative medicine (CAM) has gained growing attention in Western countries.(Hammersen *et al*., 2020).The National Center for Complementary and Alternative Medicine (NCCAM) defines CAM therapies as healthcare systems, products, and practices that are not yet considered part of conventional medicine.(Akyuz *et al*., 2019; Taher & Ibrahim, 2023). A cancer diagnosis and treatment significantly affect women's functional, mental, and emotional well-being, as well as their overall quality of life.(Almutairi *et al*., 2016). Almutairi and colleagues emphasized that the psychological impact of breast cancer, including anxiety and depression, often leads patients to seek

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supportive interventions beyond conventional medicine. However, their study primarily focused on the psychological burden, leaving unexplored the specific role and outcomes of CAM in alleviating these challenges. Many women with breast cancer turn to complementary and alternative medicine (CAM), with an estimated 44.7% reporting CAM usage.(Molassiotis *et al*., 2005). CAM, as defined by the National Center for Complementary and Alternative Medicine (NCCAM), encompasses a wide range of medical and healthcare systems, practices, and products not currently considered part of conventional medicine (Christina *et al*., 2024; Erku, 2016; Ören, Dorukoğlu & Ertem, 2024).

A substantial body of literature(Chai *et al*., 2024; Kristoffersen *et al*., 2022; Kristoffersen *et al*., 2024) highlights cancer patients' widespread use of complementary and alternative medicine (CAM). Molassiotis *et al*. (2005) conducted foundational research identifying the prevalence of CAM use among cancer patients and the types of therapies commonly employed. While their findings highlighted those unmet needs in conventional care drive CAM adoption, they did not delve deeply into the motivations, sociocultural influences, or comprehensive outcomes associated with CAM usage.(Molassiotis *et al*., 2005). Similarly, a comprehensive review of studies conducted in Western countries indicated an overall CAM usage prevalence of approximately 40% among cancer patients.(Horneber *et al*., 2012) . In contrast, the prevalence of CAM use in Asia is notably higher, with studies showing that up to 98% of cancer patients in Asia and around 60% in Malaysia specifically reported using CAM to support their health and treatment outcomes. These findings underscore the global diversity in CAM utilisation, reflecting varying cultural approaches to integrative health and supportive care among cancer patients (Malak *et al*., 2009).

This study provides valuable insights into the motivations and outcomes of CAM usage among women with breast cancer, addressing several underexplored dimensions within the existing body of research. While previous studies have largely focused on the prevalence of CAM use and its efficacy in symptom management, they often overlook the deeper psychological, cultural, and social factors influencing patients' decisions to adopt these practices. Additionally, the nuanced outcomes of CAM usage—beyond immediate physical benefits—such as its impact on emotional resilience, coping mechanisms, and overall quality of life, remain insufficiently documented.

Existing literature highlights a growing interest in CAM among breast cancer patients; however, significant gaps persist. Many studies focus primarily on CAM's efficacy or prevalence of use, leaving critical questions about the psychological, cultural, and social drivers behind CAM adoption unanswered. Furthermore, the impact of CAM on health-related outcomes, such as symptom management, emotional resilience, and overall quality of life, remains underreported. This lack of clarity limits healthcare providers' ability to guide patients in making informed decisions about CAM.

The present study aims to address these gaps by exploring the motivations that lead women with breast cancer to utilize CAM, alongside the perceived and measurable outcomes of such practices. By examining these dimensions, the study seeks to provide a nuanced understanding of the role CAM plays in the lives of women with breast cancer, offering valuable insights for healthcare providers to support patient-centered care.

**Ethical Approval**

Ethical approval for this study was obtained from the Institutional Review Board (IRB) at the University of Mosul, Iraq (**No: 37, 28th October. 2024, CCMRE-Nur-24-8**).

## Method

### *Research Design*

This study utilised a cross-sectional design to examine the motivations for and outcomes of complementary and alternative medicine (CAM) use among women with breast cancer. A quantitative approach was used to collect data on CAM usage prevalence, therapy types, motivations for CAM adoption, and perceived outcomes. This design allowed for a snapshot of CAM practices and their associated impacts at a single point in time.

### *Study Population and Sample*

The study focused on women diagnosed with breast cancer within the last five years, aged 18 and older, residing in both urban and rural areas. Participants were recruited from oncology clinics, cancer support groups, and online breast cancer communities to ensure a diverse representation. The target sample size was 200 participants to provide adequate power for analysing CAM usage prevalence and motivations among breast cancer patients.

### *Data Collection*

Data was collected using a structured, self-administered online survey. The survey included sections on:

*Demographic Information:* Age, education level, income, and location.

*Clinical Background:* Details on breast cancer diagnosis, stage, and treatment history.

*CAM Usage Patterns:* Types of CAM therapies used, frequency, and duration.

*Motivations for CAM Use:* Multiple-choice and Likert-scale questions to capture reasons for CAM usage, such as symptom relief, emotional support, and quality of life improvement.

*Perceived Outcomes:* Self-reported outcomes related to CAM usage, including symptom management, psychological benefits, and impact on overall well-being.

The survey was based on validated instruments where possible, with additional items developed based on the literature to capture CAM-specific motivations and outcomes.

### *Survey Instrument*

The survey included questions on demographics (age, marital status, educational level), clinical information (cancer stage, treatment history), and CAM usage patterns (types of CAM used, frequency, and duration). Motivation scales were incorporated to assess factors such as physical symptom relief, emotional well-being, and lifestyle integration, using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Perceived outcomes of CAM usage, including improvements in quality of life and symptom management, were also evaluated on a 5-point Likert scale.

To ensure the instrument’s validity and reliability, a multi-step validation process was conducted:

1. **Content Validation**: The survey was reviewed by a panel of experts, including oncologists, psychologists, and CAM practitioners, to assess the relevance and clarity of the items. Feedback was used to refine the questions and ensure they comprehensively addressed the study's objectives.
2. **Pilot Testing**: A pilot study was conducted with a sample of 30 breast cancer patients to test the clarity, cultural appropriateness, and usability of the instrument. Participants provided feedback on any ambiguities, leading to minor revisions.
3. **Reliability Testing**: Internal consistency was assessed using Cronbach’s alpha, achieving a value of 0.85 for the motivation scales and 0.89 for the perceived outcomes scale, indicating high reliability.
4. **Construct Validation**: Exploratory factor analysis was performed to confirm that the survey items aligned with the intended constructs, such as motivations for CAM use and perceived outcomes.

### *Data Analysis*

Descriptive statistics summarised demographic information, CAM usage patterns, motivations, and outcomes. Inferential analyses, such as chi-square and independent-sample t-tests, examined associations between CAM use and demographic factors. Logistic regression analysis was used to

identify key predictors of CAM usage, adjusting for variables such as age, cancer stage, and socioeconomic factors.

### Limitations

As a cross-sectional study, the design captures data at a single point, limiting the ability to infer causation. Additionally, self-reported data may be subject to recall or social desirability bias, which could influence the accuracy of CAM usage and outcome reports.

### Results

The study sample comprised 200 women diagnosed with breast cancer within the last five years, with a mean age of 52 years (SD = 9.4); most participants (60%) were aged between 45 and 60. Education levels varied, with 68% of participants having completed at least some college education, while 32% held a high school diploma or less. Income distribution revealed that 56% of respondents reported a middle-income level, 30% a lower-income level, and 14% a higher income level. CAM use was prevalent among participants, with 70% reporting CAM as a supportive measure during their cancer treatment to alleviate symptoms. Commonly used CAM therapies included herbal supplements (42%), mind-body practices such as yoga and meditation (35%), dietary supplements (30%), acupuncture (15%), and aromatherapy (10%). Many participants used multiple CAM therapies, averaging 2.3 therapies per user (SD = 1.1). The primary motivations for CAM use included symptom relief (65%), emotional support and mental well-being (50%), improved quality of life (40%), and a preference for natural or holistic approaches to complement conventional treatments (35%). Regarding perceived outcomes, 60% reported physical symptom relief, with 25% describing these benefits as significant. Emotional benefits were noted by 50% of users, while 45% felt CAM positively impacted their overall quality of life; however, 20% noticed no change, and 5% remained uncertain. Logistic regression analysis indicated that middle- and higher-income participants, as well as those with a college education, were more likely to use CAM ($p < 0.05$ and $p < 0.01$, respectively). In contrast, younger participants (under 55) exhibited a slightly higher tendency toward CAM use, though this was not statistically significant ($p = 0.07$).

**Table 1:** Participant Demographics

| Category | Data |
|---|---|
| Age (mean ± SD) | 52 ± 9.4 |
| Education - College or Higher | 68% |
| Income - Middle | 56% |
| Income - Lower | 30% |
| Income - Higher | 14% |

**Table 2:** CAM Usage Patterns

| Category | Percentage |
|---|---|
| Prevalence of CAM Use | 70% |
| Herbal Supplements | 42% |
| Mind-Body Practices | 35% |
| Dietary Supplements | 30% |
| Acupuncture | 15% |
| Aromatherapy | 10% |

**Table 3:** Motivation to use CAM therapies

| Motivation to Use CAM Therapies | % |
|---|---|
| To reduce side effects of conventional treatment | 19.3 |
| To improve emotional well-being | 4.7 |
| To enhance physical well-being | 40.0 |
| A belief that CAM therapies can cure cancer | 30.7 |
| Encouraged by friends or family | 4.0 |
| Other (Please specify) | 1.3 |

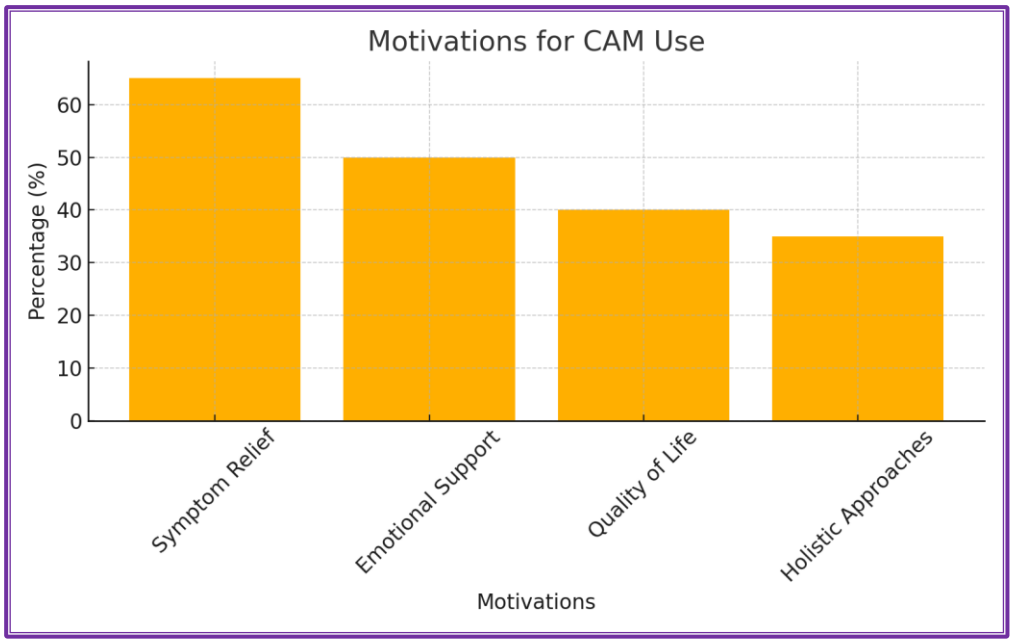


**Figure 1:** Motivations for CAM Use

This figure illustrates the primary motivations for CAM use among the participants, with symptom relief being the most cited reason.

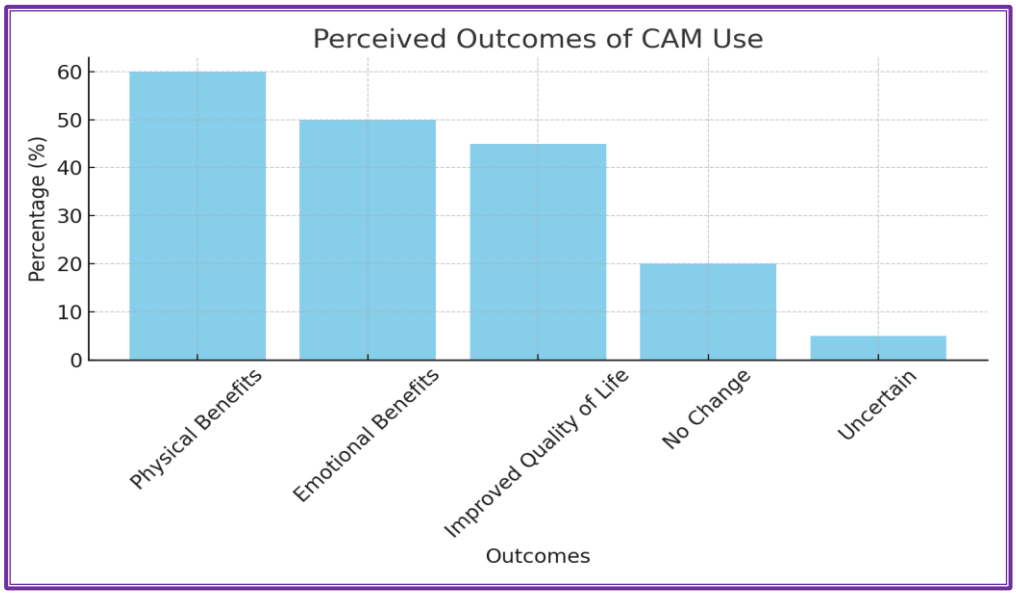


**Figure 2:** Perceived Outcomes of CAM Use

Figure 2 illustrates the perceived outcomes of Complementary and Alternative Medicine (CAM) use among women with breast cancer. The majority of respondents, over 50%, reported experiencing

physical benefits, highlighting CAM's role in alleviating symptoms such as pain, fatigue, and nausea associated with cancer or its treatments. Emotional benefits were the second most commonly reported outcome, with nearly half of the participants noting improvements in emotional well-being, such as reduced anxiety, enhanced relaxation, and greater resilience. Additionally, approximately 45% of respondents indicated an improved quality of life, suggesting that CAM addresses physical and psychosocial dimensions, contributing to holistic care. However, around 20% of participants observed no change in their condition, reflecting variability in CAM's perceived effectiveness, which may depend on individual factors, cancer stage, or specific CAM modalities. A small proportion, less than 10%, expressed uncertainty about the outcomes, possibly due to mixed experiences or a lack of clarity regarding CAM's impact. This variability emphasizes the importance of personalized approaches and further research to integrate CAM into cancer care better.

## Discussion

This study explored the prevalence, motivations, and perceived outcomes of complementary and alternative medicine (CAM) use among women with breast cancer, providing insights into how this population integrates CAM into their cancer care journey. The findings indicate a high prevalence of CAM usage (70%) in the sample, aligning with trends observed in similar studies conducted internationally, which report a CAM use prevalence ranging from 40% to nearly 98% in various regions (Molassiotis *et al*., 2005a; Molassiotis *et al*., 2005b). Such results underscore the substantial reliance on CAM as a supportive approach among breast cancer patients.

### *Motivations for CAM Use*

Integrating the provided insights with our findings, we observe a multifaceted motivation behind using Complementary and Alternative Medicine (CAM) among our participants. Our data reveal that CAM is not exclusively used for curative purposes but also serves broader roles, including preventive care, relaxation, and the pursuit of a feeling of "doing something" proactive in response to health challenges. This aligns with existing research indicating that CAM is more commonly used among patients with ambiguous health states, reflecting a coping mechanism in the face of uncertainty about their illness (Kemppainen *et al*., 2018). In our cohort, participants articulated similar motivations, with 35.4% expressing a desire to take active steps beyond conventional treatment.

In particular, young breast cancer (BC) patients in our study appear to experience a unique psychological struggle. For these individuals, CAM may provide a means of grappling with the dissonance of an illness typically uncommon in their age group, thus functioning as a way to regain some sense of control and agency over their health. This finding resonates with prior studies that have reported BC patients and their healthcare providers recognising CAM use as a way to "fight" the disease, helping patients feel empowered and actively involved in their care.(Fox *et al*., 2013; Lengacher *et al*., 2006).

Moreover, while CAM has been widely adopted as a supportive measure, our findings, in line with analyses from the U.S. National Cancer Database (Wildes *et al*., 2009), indicate that using CAM as a substitute for conventional medicine is exceedingly rare. This suggests that while patients incorporate CAM to fulfil psychological, preventive, and supplementary health needs, they still value and rely on conventional medical treatments as the foundation of their care.

These insights collectively position CAM as a holistic tool that complements conventional treatments, addressing physical health and psychological and emotional well-being. By providing patients with a sense of action and control, CAM helps them navigate the complexities of their health journeys, supporting their physiological and emotional resilience. This nuanced understanding of CAM use, grounded in our cohort's experiences and supported by existing literature, underscores CAM's broader purpose in holistic patient support. (Stöcker *et al*., 2023).

*Perceived Outcomes of CAM Use*

Participants reported notable physical and emotional benefits from CAM use, with 60% noting improvements in physical symptoms and 50% in emotional well-being. This outcome aligns with previous research suggesting that CAM therapies can help alleviate cancer-related symptoms, such as pain and fatigue, and contribute to emotional resilience. Furthermore, nearly half of the participants (45%) believed that CAM positively impacted their overall quality of life, indicating that these therapies may serve as valuable adjuncts to conventional treatments.

Interestingly, a small percentage of participants (20%) reported no perceived change in quality of life, and 5% were uncertain about the effects of CAM. These findings emphasise that while many participants experienced benefits, the effectiveness of CAM can vary widely based on individual needs, types of therapies used, and personal beliefs.

Our study corroborates previous findings that the use of Complementary and Alternative Medicine (CAM) often serves as a means for patients to regain control over their treatment journey (Holland, 1982; Zaloznik, 1994). Our cohort observed that diet and nutritional supplements were the most frequently used CAM methods for this purpose, closely followed by traditional and ethnic techniques—such as acupuncture, massage, metabolic therapy, and aromatherapy. These approaches are notably accessible outside conventional medical settings, providing patients with options that feel within their reach and control.

As Harpham (2001) noted, patients often feel a heightened need to "do something" to reassert control over their health, especially after completing intensive treatments like chemotherapy and entering the remission phase. This transitional period, marked by vigilance for signs of recurrence, can foster feelings of powerlessness. In our study, similar sentiments emerged, with patients turning to CAM as a way to actively participate in their own health maintenance. For many, engaging in these therapies creates a sense of agency, reinforcing the notion that they are taking steps to prevent potential relapse.

Likewise, Truant and Bottorff (1999) highlighted that choosing an alternative therapy may provide patients with a perceived sense of control. This sense of proactive involvement appears to mitigate feelings of helplessness, offering emotional comfort and reinforcing a sense of empowerment. Our findings align with these perspectives, as participants in our study expressed a need to actively engage with their health beyond conventional treatments, illustrating that CAM serves as a therapeutic option and a significant psychological support mechanism. This sense of control over one’s health, underscored by the accessibility of CAM options, enables patients to reclaim some degree of agency in their health journey, complementing conventional medical care with personalised, empowering choices.

*Socioeconomic and Demographic Predictors*

The study found that CAM use was significantly associated with higher income and educational levels, suggesting that socioeconomic factors may influence access to and adoption of CAM therapies. Women with higher incomes and education levels may have greater access to CAM resources and information and the financial means to afford treatments not typically covered by insurance. This finding has implications for healthcare providers, highlighting a potential disparity in access to supportive therapies, possibly leaving lower-income individuals underserved.

## Conclusion

The study revealed key demographic insights, showing that participants were predominantly middle-aged to older, unemployed, and held a diploma or bachelor's degree, highlighting disparities in health education and resources among unemployed individuals that require attention. Regarding treatment preferences, about one-third of respondents reported using unclassified or miscellaneous treatments for breast cancer, primarily relying on Complementary and Alternative Medicine (CAM) as a supplement rather than a replacement for conventional therapies. While most participants demonstrated extensive knowledge of CAM, critical gaps were identified, particularly concerning safety, medical supervision,

and interactions with conventional treatments. Misconceptions, such as the belief that CAM therapies are entirely harmless or curative, emphasize the need for targeted educational efforts. The main motivations for CAM use included improving physical conditions and alleviating side effects of conventional treatments, with reported benefits such as enhanced energy levels and pain reduction, underscoring its role in symptom management. Attitudes towards CAM were largely positive, reflecting its perceived benefits for symptom relief and quality of life, though concerns about potential risks and interference with standard treatments tempered this optimism. Statistical analysis revealed marginal associations between age, education level, and CAM knowledge and attitudes, suggesting these factors should be addressed in awareness campaigns, while occupation showed no significant influence, indicating consistent perceptions across employment statuses.

### Limitations

As a cross-sectional study, this research captures a single point in time, limiting the ability to conclude the long-term effects of CAM on health outcomes. Additionally, self-reporting bias may have influenced participants' responses regarding their CAM use and perceived benefits. Finally, the study's reliance on a purposive sample recruited from online and community support groups may not fully represent the broader population of breast cancer patients.

### Implications for Practice and Future Research

The findings suggest that healthcare providers should engage in open discussions about CAM with patients, particularly given the high prevalence of CAM use and the diversity of therapies available. Providers may need to offer guidance on safe and effective CAM options and ensure patients are well-informed to make choices that complement their conventional treatments.

Future research should consider longitudinal studies to understand better CAM's long-term impacts on health outcomes in breast cancer patients. Further studies could also explore the specific types of CAM therapies yielding the most significant benefits and investigate potential barriers to access among lower-income populations. By addressing these gaps, future research can provide a more nuanced understanding of CAM’s role in holistic cancer care.

In conclusion, CAM plays a prominent role in the supportive care of women with breast cancer, with most participants reporting benefits in physical and emotional well-being. Given these insights, it is essential to integrate discussions of CAM into standard cancer care to ensure that patients receive comprehensive and informed support throughout their treatment journey.

For healthcare providers, the variability in outcomes and the small proportion of patients expressing uncertainty highlight the need for comprehensive training on CAM practices. Providers should be equipped with up-to-date knowledge about commonly used CAM therapies, their mechanisms of action, and their integration into conventional care plans. Training should also address cultural competence, as cultural beliefs and preferences often influence CAM adoption. Providers need to develop communication skills that enable open, nonjudgmental discussions with patients about their CAM use, fostering trust and ensuring that patients feel supported in their choices.

### Conflict of Interest

The authors declare that they have no competing interests.

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