

# How safe is Autheem therapy for young Saudi infants? A question worth asking

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## ABSTRACT

**Background:** In Saudi Arabia, a traditional therapy for a folk labeled problem known as “Autheem - عظيم” is often offered to infants. The procedure involves manipulating an infant’s soft palate to alleviate pain associated with infant colic and poor feeding. However, concerns remain about this procedure’s impact on infant health and its potential to transmit infections. This study focused on perceptions that Saudi mothers hold about Autheem therapy. **Methods:** A descriptive, cross-sectional, community-based study was conducted via an online platform to reach Saudi mothers in the Riyadh region of Saudi Arabia. **Results:** Five hundred and thirty-six Saudi mothers participated; half were older than 30 years of age. Despite a high rate of college degree attainment, the majority of mothers relied on their elders as a source of information (88.4%). Autheem was viewed to be a stand-alone disease by 86.5% of respondents; 71.4% believed it could not be treated with modern medicine. Most infants were under six months of age when they received Autheem therapy (72%). Roughly 13% of mothers found that their infant had a fever after the therapy; we found an association between Autheem therapy and viral illnesses. About 13% of mothers altered their child’s vaccination schedule after Autheem therapy. **Conclusion:** Older mothers have more positive attitudes towards and stronger beliefs in Autheem therapy than younger mothers. The therapy’s strong association with viral illnesses and its negative impact on vaccination schedules are major public health concerns.

**Keywords:** Autheem therapy, infant colic, Saudi Arabia, soft palate

## Introduction

A person’s health beliefs and approaches to their health are shaped by the society in which they live. All cultures encompass beliefs about health, what causes illnesses, how illnesses can be cured or treated, and who should be involved in that process. Kleinman (1980) suggested that experiences around

an illness are embedded in social relationships and the cultural context in which they occur.<sup>[1]</sup> Throughout history, traditional medicine (TM) has been integral to human civilizations and cultures worldwide.<sup>[2]</sup>

The World Health Organization (WHO) defines TM as “the total of knowledge and practices, whether explicable or not, used in diagnosing, preventing, or eliminating physical, mental, and social diseases.” This knowledge or practice may rely exclusively on experience and observation handed down orally or in writing from generation to generation.”<sup>[3]</sup> Such practices are unique to each country.

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In Saudi Arabia, TM is firmly embedded in the culture. It is a legacy that has been handed down from one generation to the next and has earned a place of confidence in people's minds as a reliable source of healthcare. Multiple studies conducted in Saudi Arabia have shown that the prevalence of TM use is as high as 75% in the general population.<sup>[4]</sup> The most often utilized therapies include roquia, herbal medicine, cupping, cauterization, and therapeutic medical massages. Most people rely on their family and friends as a source of information. Visiting traditional healers is motivated by a variety of factors, including a belief in the efficacy of TM, a preference for natural materials, and nonresponse to medical treatments. Overall, people living in Saudi Arabia have a favorable perception of TM, and it is widely believed to be both safe and medically effective.<sup>[5]</sup>

Despite the long practice of Autheem therapy in Saudi Arabia, it has not yet been well studied. There is a lack of information as to why mothers seek this therapy. However, some Saudi child health experts have linked this therapy to infant colic or poor infant feeding. Given that many parents might not accept reassurance and conservative measures to manage infant colic or feeding issues, many unsatisfied parents often turn to TM. The role of alternative therapies in the management of infants' colic has been explored in other settings.<sup>[6]</sup> Despite conflicting data, most mothers employ traditional alternative methods such as herbal supplements, a manipulative approach, or behavioral interventions to resolve the stress and anxiety posed by the condition in their infants.<sup>[7]</sup> In Saudi Arabia, traditional healers have claimed to cure infant colic and poor feeding for decades. Soft palate manipulation (i.e., Autheem therapy) is a common practice offered to young infants in different regions of Saudi Arabia. This study aims to assess the safety of Autheem treatment and understand the factors that influence mothers to seek this therapy.

## Methods

### Study design

A descriptive, cross-sectional, community-based study design was adopted. This study targeted Saudi mothers of reproductive age living in the Riyadh region, which is home to over 10 million female residents. An additional inclusion criterion was that the respondent had to have a child who had received Autheem therapy.

### Participants recruitment

From October 2022 through June 2023, we recruited mothers via an internet-based survey to reach all mothers, regardless of their access to healthcare. Social media platforms were used to disseminate the survey given the high use of social media in Saudi Arabia. A sample size was calculated based on cluster sampling with the help of a contracted biostatistician.

### Survey development

The survey was based on the preliminary results of an ongoing study led by the principal investigator. A structured survey

was designed to fulfill the study objectives. It consisted of three sections: participants' sociodemographic characteristics, attitudes, and beliefs toward Autheem therapy and perceptions of the therapy's safety in terms of infectious diseases. The survey was assessed for clarity and quality by a pilot study that was included in the final analysis given that no concerns were raised.

### Statistical analysis

The data were analyzed using the Statistical Package for Social Sciences, version 28. Frequencies and percentages were used to express categorical variables, and numerical variables were presented as medians and interquartile ranges. Participants' perceptions were analyzed by querying the infections that occurred after soft palate manipulation; the respondents were instructed to select variables regarding bacterial infections and viral infections. A Wilcoxon rank-sum test was used to compare the scores of the participants' perceptions regarding viral and bacterial infections. Differences in the participants' perceptions of categorical variables were assessed using Fisher's exact test or Pearson's Chi-squared test, where applicable.

### Study ethics

The study received approval from the ethical committee of Majmaah University (number: 2022/13-3). Participants provided informed consent after they were explained the objectives and benefits of the study. All of the data were kept confidential and used for the purpose of this study only.

## Results

### Study participants

A total of 536 mothers participated in this study. Roughly half of the participating mothers were between 31 and 40 years old. The ages of the respondents' children ranged from less than one month to 12 months. More than 50% of the mothers held college degrees, and most of the mothers had fewer than three children at the time that Autheem therapy was provided [Table 1].

### Knowledge and source of information

Information about Autheem was obtained before pregnancy for 65% of mothers. The majority of the mothers reported gathering information from their mothers or other older women in their family (88.4% of respondents) or friends or other young mothers (6.9% of respondents). Less than 2% of mothers reported seeking Autheem treatment information from social media.

### Reason and timing of Autheem therapy

The main reason that participating mothers sought Autheem therapy was to alleviate poor feeding (44%). Inconsolable crying and poor weight gain were other reasons that the mothers decided to try Autheem therapy [Figure 1]. Most of the infants were under six months of age when they received

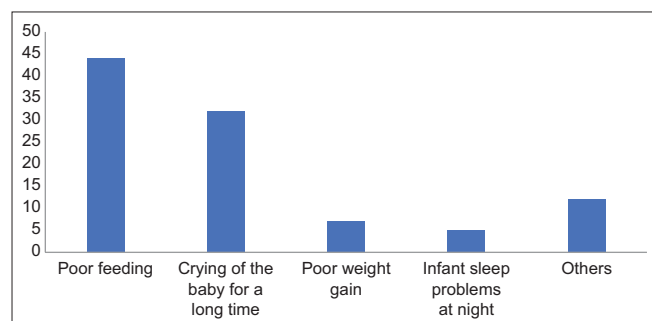
palatal manipulation (72%). Only 67 participants had exclusively breastfed their children (12.5%). Moreover, 38.2% used formulas alone and the remaining mothers used mixed feeding [Table 1].

### Attitudes and beliefs

The majority of mothers believe in Autheem disease as a well-defined and stand-alone illness (86.5%). Additionally, 71.4% of mothers believed that their child's condition could not be treated by modern medicine. Most mothers (85%) felt that their children improved after Autheem therapy; only 65%

**Table 1: Characteristics of mothers whose children received soft palate manipulation**

Variables	n	%
Mother's age		
18–24 years	29	5.4%
25–30 years	162	30.2%
31–40 years	255	47.6%
40+ years	90	16.8%
Mother's marital status		
Married	499	93.1%
Divorced	26	4.8%
Widowed	11	2.1%
Mother's highest level of education		
Middle school or less	51	9.5%
High school	141	26.3%
College degree	306	57.1%
Postgraduate degree	38	7.1%
Current residence ownership status		
Renter	175	32.6%
Owner	292	54.5%
Living with others (mother's or father's families)	69	12.9%
Number of children at the time of Autheem treatment		
One	242	45.1%
Two	152	28.4%
Three	85	15.9%
Four or more	57	10.6%
Child's age at the time of Autheem treatment		
<3 months	105	19.6%
3–6 months	281	52.4%
7–12 months	150	28.0%
Child's feeding practice before the Autheem treatment		
Breastfeeding only	67	12.5%
Breastfeeding and formula feeding	264	49.3%
Formula feeding only	205	38.2%

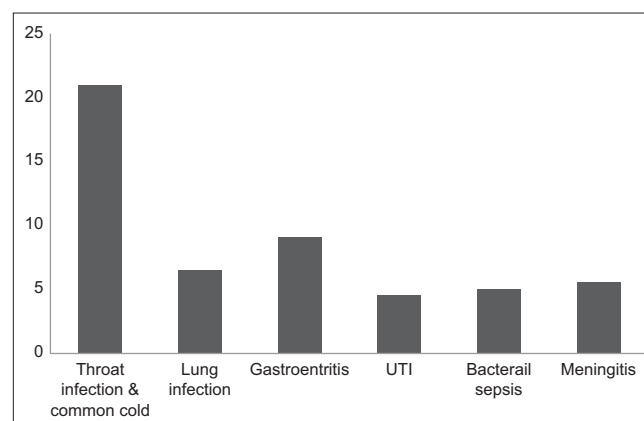


**Figure 1: Reasons for soft palate manipulation (as percentages)**

believed that the therapy was safe for their children. However, positive attitudes toward Autheem treatment were associated with the belief in Autheem as a well-defined disease ( $P < 0.001$ ), a lack of interest in modern medicine ( $P < 0.001$ ), the perception of improvement post-therapy ( $P < 0.001$ ), and the belief that Autheem treatment is safe ( $P < 0.001$ ). Advanced maternal age and a lower level of education were significantly associated with positive attitudes toward Autheem and stronger beliefs about the beneficial impacts of this therapy on a child's health. Conversely, negative attitudes were associated with a lack of improvement post-therapy ( $P = 0.026$ ) and the belief that Autheem posed a high risk in terms of transmitting infections ( $P < 0.001$ ). Surprisingly, breastfeeding women had more negative views of Autheem compared with women using formula or a mixed-feeding schedule ( $P = 0.001$ ). More mothers with a positive attitude toward Autheem therapy were likely to offer it to their next child if they believed in its existence as a well-defined disease ( $P < 0.001$ ), that modern medicine cannot treat it ( $P < 0.001$ ), that the child improved post therapy ( $P < 0.001$ ) and that Autheem treatment is safe ( $P < 0.001$ ) [Table 2].

### Hygiene and infection risk

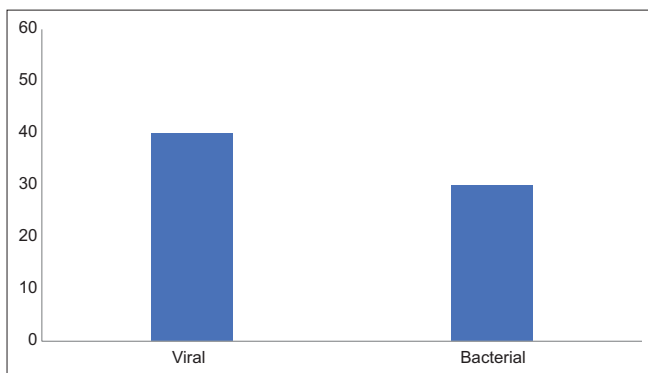
About 13% of mothers found that their infant developed a fever post-Autheem. Throat infections and common colds were also reported by 21%. In addition, 6.5% of mothers noted that pneumonia was diagnosed after palatal manipulation. Urinary tract infections, bacterial sepsis, and meningitis were reported post-Autheem at rates of 4.6%, 5.2%, and 5.6%, respectively [Figure 2]. The Wilcoxon rank sum test revealed that children who underwent Autheem therapy were more likely to develop viral infections rather than bacterial infections post-therapy ( $P < 0.001$ ) [Figure 3]. In general, 40% of mothers believed that Autheem increased their children's risk of infection. Almost three-quarters of the mothers (72.7%) confirmed that traditional healers washed their hands before palatal manipulation. However, less than half of the respondents (45.9%) reported that the traditional healers wore gloves [Figure 4].



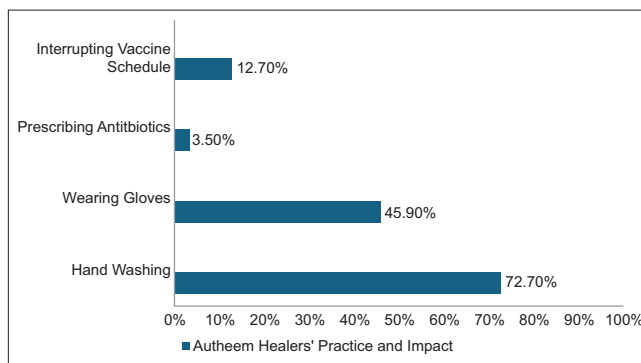
**Figure 2: Infections reported (as percentages) after soft palate manipulation**

**Table 2: Differences in participants’ perceptions based on their attitudes towards using Autheem treatment for their next child**

Parameter	Category	I will use Autheem treatment for my next child if needed			P
		Strongly agree/agree, n=390	Neutral, n=90	Disagree/strongly disagree, n=56	
I believe in the existence of Autheem disease	Strongly agree	303 (86.6%)	29 (8.3%)	18 (5.1%)	<0.001
	Agree	74 (64.9%)	27 (23.7%)	13 (11.4%)	
	Neutral	11 (18.3%)	31 (51.7%)	18 (30.0%)	
	Disagree	1 (16.7%)	2 (33.3%)	3 (50.0%)	
	Strongly disagreed	1 (16.7%)	1 (16.7%)	4 (66.7%)	
I would not use Autheem if my child improved with modern medicine	Strongly agree	205 (70.9%)	48 (16.6%)	36 (12.5%)	0.026
	Agree	116 (76.8%)	25 (16.6%)	10 (6.6%)	
	Neutral	40 (63.5%)	17 (27.0%)	6 (9.5%)	
	Disagree	19 (90.5%)	0 (0.0%)	2 (9.5%)	
	Strongly disagree	10 (83.3%)	0 (0.0%)	2 (16.7%)	
Modern medicine cannot treat Autheem	Strongly agree	212 (78.8%)	33 (12.3%)	24 (8.9%)	<0.001
	Agree	85 (74.6%)	20 (17.5%)	9 (7.9%)	
	Neutral	70 (63.1%)	28 (25.2%)	13 (11.7%)	
	Disagree	19 (59.4%)	9 (28.1%)	4 (12.5%)	
	Strongly disagree	4 (40.0%)	0 (0.0%)	6 (60.0%)	
My child improved significantly after Autheem treatment	Strongly agree	301 (86.5%)	34 (9.8%)	13 (3.7%)	<0.001
	Agree	72 (64.3%)	30 (26.8%)	10 (8.9%)	
	Neutral	11 (26.8%)	19 (46.3%)	11 (26.8%)	
	Disagree	4 (16.7%)	6 (25.0%)	14 (58.3%)	
	Strongly disagree	2 (18.2%)	1 (9.1%)	8 (72.7%)	
The traditional treatment of Autheem increase a child’s risk of infection	Strongly agree	68 (60.2%)	26 (23.0%)	19 (16.8%)	<0.001
	Agree	64 (61.0%)	25 (23.8%)	16 (15.2%)	
	Neutral	100 (71.9%)	26 (18.7%)	13 (9.4%)	
	Disagree	89 (84.8%)	11 (10.5%)	5 (4.8%)	
	Strongly disagree	69 (93.2%)	2 (2.7%)	3 (4.1%)	
I believe that Autheem therapy is safe for my child	Strongly agree	193 (95.5%)	5 (2.5%)	4 (2.0%)	<0.001
	Agree	132 (88.0%)	16 (10.7%)	2 (1.3%)	
	Neutral	43 (38.4%)	59 (52.7%)	10 (8.9%)	
	Disagree	10 (24.4%)	10 (24.4%)	21 (51.2%)	
	Strongly disagree	12 (38.7%)	0 (0.0%)	19 (61.3%)	



**Figure 3:** Bar chart depicting perceived risks of bacterial and viral infections after soft palate manipulation



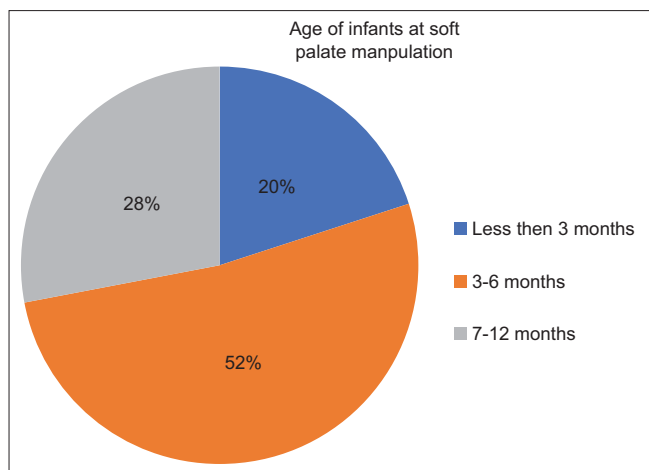
**Figure 4:** Autheem Therapy practitioners have a negative impact on vaccine schedule, antibiotic stewardship, and hygiene

### Impact on vaccine schedule

Most of the participants (>95%) reported that traditional healers did not advise delaying or stopping vaccinations. Furthermore, only a small percentage reported that a traditional healer advised that their child take antibiotics after the manipulation process (3.5%). Sixty-eight mothers (12.7%) either delayed vaccinations for over one month or stopped the schedule altogether after Autheem therapy.

### Discussion

Interest in TM is not new and will continue to grow globally.<sup>[8]</sup> The favorable public perception of TM derives from the inability of modern medicine to cure chronic illnesses and its perceived safety.<sup>[9]</sup> However, the safety of TM for children has not been established. The potential risks due to the lack of regulation and quality control associated with TM should be taken into account.



**Figure 5:** Age distribution of infants at the time of soft palate manipulation

Due to their smaller physical size and differing ability to detoxify chemicals, children are more susceptible to contamination and toxicity compared with adults.<sup>[10]</sup> Either ingested or applied, there are a lot of concerns about TM for infants and young children.

A recent study conducted in Saudi Arabia found that TM was used for only 12.97% of children under two years of age.<sup>[11]</sup> This is parallel to our findings, as Autheem therapy was offered for children six months of age and younger [Figure 5]. Seeking TM is very common in Saudi Arabia and is embodied in Saudi culture.<sup>[12]</sup> Additionally, some TM is supported by the religious beliefs of many Saudi families.<sup>[13]</sup> It can be used as adjunct therapy while receiving modern medicine or as an alternative to modern medicine.<sup>[14]</sup>

Poor feeding was found to be the leading cause of seeking Autheem therapy in this study. Given the low malnutrition rates in the Riyadh region,<sup>[15]</sup> we doubt that poor feeding truly explains the reliance on Autheem therapy. Instead, unrealistic maternal expectations and a lack of anticipatory guidance during well-baby clinic visits about infants' feeding might be driving TM usage.

Understanding the potential association between soft palate manipulation and acquired infections in infants is crucial for ensuring the safety of traditional healing practices and underscores the importance of appropriate infection-control measures taken by TM healers.

Despite the link with viral infections, it was surprising that many mothers believed that traditional healers washed their hands and that fewer than half of the mothers reported that healers wore gloves. If these results are true, they are a positive sign of the willingness of traditional healers to practice infection control; public health agencies in Saudi Arabia should continue encouraging traditional healers to improve their infection-control practices. Although the link between this therapy and meningitis was not statistically significant, it is clinically relevant. Having a 5% risk of meningitis is quite alarming and should be explored with more in-depth research in the future.

Even mothers with a high level of education still sought out Autheem therapy. This finding reflects the differences between educational attainment and health literacy. Poor health literacy has been reported in Saudi Arabia, which is consistent with our findings.<sup>[16]</sup> Nevertheless, the overwhelming consensus among Saudi mothers is a lack of interest in TM if there is an option in modern medicine that is just as effective. Given poor health literacy and the desire to find solutions in modern medicine, our findings are a call for action to practice anticipatory guidance in well-baby clinics and pediatric care in Saudi Arabia.

The negative impact of Autheem therapy is a worrisome finding. Changing the vaccine schedule or stopping vaccines altogether can put many children at risk of preventable diseases. This particular issue assumes even greater significance when considering the preexisting concern surrounding vaccine hesitancy in Saudi Arabia.<sup>[17]</sup> Combined with vaccine hesitancy, this traditional practice might put Saudi public health at risk of incoming outbreaks. Working with healers to address their negative impact on routine and seasonal vaccine schedules should be a public health priority in the Kingdom.

The role of grandmothers in the well-being and upbringing of their grandchildren is significant in Saudi Arabia.<sup>[18]</sup> Our study has brought to light the fact that young mothers often depend on their mothers for guidance. A recent study has underscored the importance of utilizing the vast stores of knowledge possessed by grandmothers.<sup>[19]</sup> While grandmothers can offer valuable guidance on various aspects of child well-being, including nutrition, health, and general care, it is crucial not to blindly accept their advice about outdated practices that do not align with current evidence-based recommendations.

The intersection of scientific research and our own culture holds great potential for the future of integrative medicine in Saudi Arabia. The rising hope among some of us for a holistic healthcare system and integrative health in our region comes at a time of healthcare transformation and privatization in Saudi Arabia. Our hope is tied to these scientific breakthroughs.

## Limitations

This cross-sectional study was able to establish an association between Autheem therapy, the mothers' characteristics, viral infections, and vaccine interruptions. However, this study cannot make claims about causation. Another limitation is the respondents' potential recall bias. Despite these limitations, this is the first published study examining this cultural practice in Saudi Arabia that has been employed for generations and raises public health concerns that highlight the need for more research about this common Saudi practice.

## Conclusion

The present study suggests that older mothers and grandmothers might have more positive attitudes toward Autheem therapy. Poor feeding is the leading cause of seeking Autheem therapy and

many children get exposed to it in their first six months of life. The strong association of Autheem therapy with viral illnesses and its negative impact on vaccination schedules are major public health concerns. Counseling, anticipatory guidance, and support can be effective in advocating for the unnecessary involvement of infants with traditional healers. Targeted awareness efforts concentrating on grandmothers and improving health literacy can present future solutions for the overuse of TM for infants and children in Saudi Arabia.

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### Conflicts of interest

There are no conflicts of interest.

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