



Health Care Seeking Behaviour of Patient Coming with Mumps in a Primary Care Unit of Assam

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ABSTRACT

Background: Mumps, or parotitis, is an acute viral infection that affects the parotid glands and is caused by the RNA virus Paramyxovirus. It primarily affects children and is characterized by notable symptoms, including swelling of the parotid glands, pain, and a mild fever.

Aim and objective: To assess the healthcare-seeking behaviour of patients coming with paramyxovirus (mumps) infection in a primary care unit of Assam.

Methods: From September 2023 to September 2024, all patients coming to the selected hospitals were included in our study, with 185 cases in total. Out of these cases, in-depth interviews were conducted with 30 patients aged over 18 years. A predesigned and pretested interview schedule was used, which were recorded by transcribed verbatim, and coded. The codes were organized into themes, followed by a thematic analysis.

Results: The result indicated that 40% belonged to the age group of 1-15 years with Males: Females ratio of 1:2. Over 95% of cases presented with swelling of the face and trismus with 65% being bilateral in presentation. Significant elevations were observed in various biomarkers, including serum amylase (100%), erythrocyte sedimentation rate (ESR) (89%), and C-reactive protein (CRP) (73%). Qualitative data revealed that cultural beliefs, dependence on traditional remedies, and insufficient awareness regarding the seriousness of the disease led to delays in seeking healthcare.

Conclusion: The importance of public health efforts to raise awareness about mumps, addressing misconceptions about traditional remedies, and promote timely access to critical medical care and vaccinations to reduce the burden of disease.

Keywords: Paramyxovirus (mumps), Serum amylase, Vaccination, Herbal medication, Assam

INTRODUCTION

Mumps also known as parotitis, is an acute viral infection caused by RNA virus (Paramyxovirus) of the genus Rubulavirus. It primarily affects the parotid glands, most commonly bilateral, which typically develop 16 to 18 days post-

exposure. The symptoms such as myalgia, anorexia, and malaise, including low-grade fever which may last three to four days, and nonspecific headache may precede parotitis. Mumps are highly contagious and spread through respiratory droplets [1].

In 1967, the mumps vaccine was introduced, decreasing reported mumps cases in the United States by more than 99%. However, in 2006, another spike in mumps cases was reported. The two doses of the measles-mumps-rubella (MMR) vaccination programs, decrease the incidence rates of mumps, though periodic outbreaks still occur [2].

Chikkahallivana village in Davangere district, Karnataka, had an outbreak among its unimmunized population, according to a 2014 study conducted in India. A vaccine-preventable disease that primarily affects children and can lead to complications like pancreatitis, meningitis, and encephalitis [3]. As per the Global Health Observatory (GHO) data, between 2021 and 2022 India reported 764 mumps cases, which is an alarming trend for Maharashtra, Uttar Pradesh, Odisha and Rajasthan of increasing mumps cases [4].

During the mumps outbreaks in the Northeast and Guam, third doses of the MMR vaccine were administered to the most impacted populations by Institutional Review Board protocols. Despite being a vaccine-preventable disease, recent studies indicate a global increase in mumps, even in countries with well-established National Immunization Programs (NIPs). This increase is partly attributed to the efficacy of the mumps vaccine and the genetic divergence between vaccine strains and circulating viral strains [5].

This study aims to assess the health care seeking behaviour of patients coming with paramyxovirus (mumps) infection in a primary care unit of Assam.

METHODOLOGY

This mixed-method study, conducted between September 2023 and September 2024, involved 185 patients presenting to selected hospitals with mumps-like symptoms, including parotid swelling, pain, and trismus. Patients who did not provide consent and those with other causes of parotitis, such as bacterial infections or autoimmune conditions, were excluded. Data collected included demographics, clinical presentation, lab results, vaccination history, and traditional practices. Ethical clearance was obtained from IEC(H) of Assam Medical College and Hospital. Descriptive statistics were employed to summarize the data, using frequencies and percentages using Microsoft Excel version 2019. For the qualitative component, in-depth interviews were conducted with 30 patients aged over 18 years. A predesigned and pretested interview schedule was used for these interviews, which were recorded on Android smartphones, transcribed verbatim, and coded. The codes were then organized into themes, followed by a thematic analysis.

RESULTS

In **figure 1**, mumps cases were highest among the 1 years -15 years age group, accounting for 41% of cases (75 patients). The lowest proportion was in the 61 years-75 years age group, representing just 3% of cases (5 patients). In the gender-wise distribution of mumps cases, boys accounted for 54% (100 cases) while girls comprised 46% (85 cases). This resulted in a males-to-females ratio of 1:2.

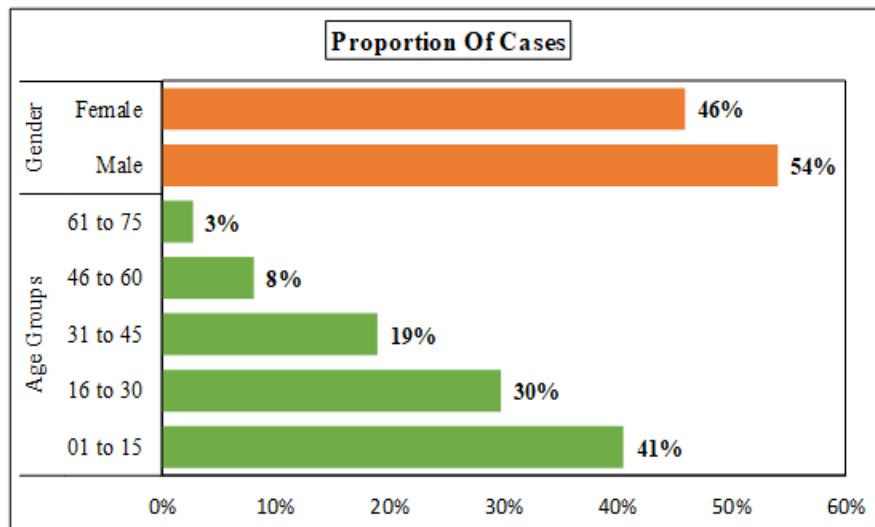


Figure 1 Proportion of cases

In figure 2, the symptoms of mumps such as facial swelling were reported in 95% of cases, while 95% experienced pain. Generalized weakness was noted in 5% of patients, trismus in 55%, and fever in 5%. Of the patients with facial swelling, 35% exhibited unilateral swelling, while 65% had bilateral swelling. Majority (95%) of the cases were not vaccinated.

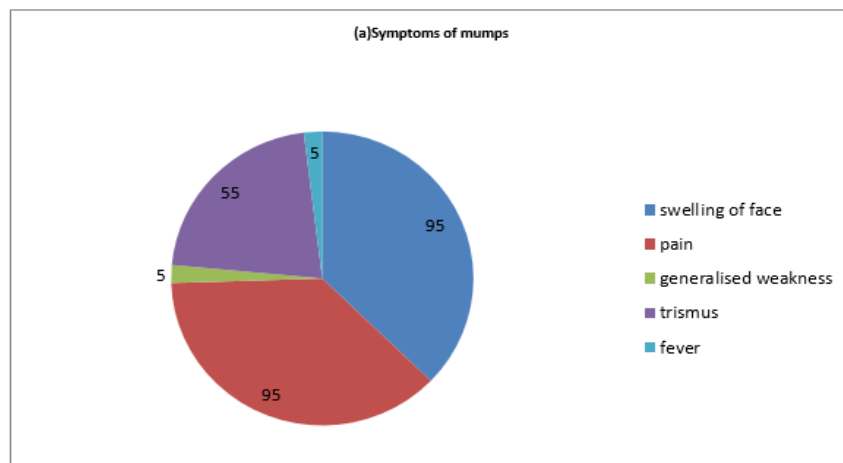


Figure 2 Symptoms of mumps

Among the 185 patients, serum amylase was elevated in all 185 patients (100%), serum lipase was elevated in 155 patients (84%), C-Reactive Protein (CRP) was elevated in 135 patients (73%), and the Erythrocyte Sedimentation Rate (ESR) was elevated in 165 patients (89%).

In figure 3, the overall cure rate for mumps was 11%, while the complication rate was significantly higher at 89%.

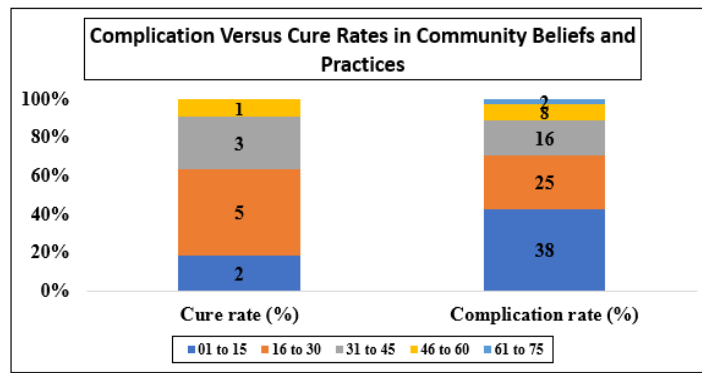


Figure 3 Complication versus cure rates in community beliefs and practices

Interpretations of qualitative data

In-depth interviews with 30 participants over 18 were conducted to identify the factors influencing the decision-making process for seeking care among patients with paramyxovirus infection (mumps) in Assam. These interviews were conducted according to a predesigned and pretested interview schedule, recorded on Android cell phones, transcribed verbatim, and coded. The codes were then sorted into themes before being subjected to a thematic analysis.

Theme 1: Delayed healthcare-seeking behaviour

Sub-theme 1: Lack of awareness and misunderstanding of mumps

Several patients describe a lack of awareness and misunderstanding about the severity of mumps as contributing to delays in seeking treatment. Patients frequently misinterpret the symptoms of less serious diseases, causing them to delay seeking expert medical attention. Listed below are some of the examples of the quotes:

"I had a cough and a swollen neck. I thought it would go away on its own in a week, so I didn't go to the doctor." (Patient 4, Age 40 years, Female)

"I had no idea that mumps could affect adults this way. I assumed it was something kids usually get, not adults like me." (Patient 5, Age 38, Male)

"My neck was hurting and my jaw was swollen, but I thought it was just something minor. I didn't realise mumps could get so bad that you have to go to the doctor." (Patient 1, Age 31 years, Male)

Sub-theme 2: Cultural and traditional beliefs

All the interviewed patients shared that they often turned to cultural practices and traditional remedies as their first line of treatment to manage mumps symptoms. This choice of local healers and home treatments caused significant delays in seeking modern healthcare. Some patients believed that mumps could be effectively treated without modern medical treatments because they were influenced by family members or local norms before adopting the decision to use traditional treatments.

"Whenever I was sick, I used pitha guri (rice flour) at home after prayers and followed the advice of the elders in my house." (Patient 7, Age 48 years, Female)

"Everyone told me to wait and try home remedies. I did for a few days and went to the clinic." (Patient 3, Age 26 years, Male)

"I boiled neem leaves and tulsi and drank the water, as it's believed to cure fevers and infections." (Patient 26, Age 37 years, Male)

"Whenever we have a fever or feel weak, we always drink 'pani bhaat' (cooked rice soaked and fermented in water). I waited

before getting any further treatment because I believed this would help me feel better.” (Patient 21, Age 54 years, Female)
“I drink ‘holy water’ blessed by the priest during prayers for healing. It’s believed to cure illnesses, so we relied on that first before deciding to go to the health centre.” (Patient 11, Age 44 years, Male)
“We applied a mixture of turmeric and mustard oil to the swollen areas. It’s a remedy that my mother suggested later we also follow the doctor’s advice.” (Patient 19, Age 31 years, Female)

Theme 2: Influence of social and family networks

Sub-theme 1: Advice from family and elders

According to several patients, family members especially elders played a crucial role in the decision-making process. Often, they were encouraged to try traditional remedies before seeking medical care.

“My grandmother told me to use pitha guri (rice flour) and holy water first, so I waited a few days before going to the clinic.” (Patient 30, Age 38 years, Female)

“I went to the doctor but I also used traditional remedies as recommended by my mother.” (Patient 12, Age 48 years, Female)

“My mother invited some lady priests and made me some rice flour to eat as well as used it as a mask in the affected area also they did some rituals. But it took me a few days to recover without any further treatment.” (Patient 6, Age 50 years, Female)

In some cases, even the advice came from relatives who had personal experiences with similar symptoms and believed that modern healthcare was not necessary unless symptoms were severe. As a result, patients often tried local therapies first before medical consultation.

“My uncle had swelling like this before, and he told me to try some home remedies first. He said it worked for him, so I followed his advice.” (Patient 15, Age 37 years, Male)

Sub-theme 2: Peer influence and social stigma

Many patients mentioned that their relatives, neighbours and friends neglected mumps as a minor illness, not requiring healthcare. This created hesitancy in visiting the hospital.

“My friends told me it’s not a big deal, just swelling that will go away in a few days. They said there’s no need to see a doctor for something so small.” (Patient 18, Age 25 years, Female)

“I felt awkward going to the clinic for something people said kids usually get. It just didn’t seem important enough to visit a doctor.” (Patient 17, Age 28 years, Male)

This resulted in delayed proper care and treatment. So, most patients rely on home remedies before seeking medical care.

Theme 3: Severity of symptoms

Sub-theme 1: Mild Initial Symptoms

Mild symptoms are experienced by the patients at the onset of mumps as often the symptoms are manageable without medical care.

“I am suffering from earache at first. I didn’t feel much pain so I thought it would be a waste of money to see a doctor.” (Patient 2, Age 23 years, Male)

“At first, I am suffering from a common cold and mild swelling. It didn’t feel like visiting a doctor.” (Patient 10, Age 28 years, Female)

Sub-theme 2: Worsening Symptoms

According to some patients, the initial mild symptoms of mumps such as low-grade fever, slight discomfort around the jaw,

malaise etc. symptoms continue to increase day by day.

“When the swelling increased, I felt pain in my ears up to the neck. I knew something was wrong and that I needed to see a doctor.” (Patient 8, Age 29 years, Female)

“At first, I thought it was just a cold. I had a mild fever and discomfort. But after a few days, one side of my face was swollen. It felt like my body was weak and unable to talk to anyone.” (Patient 29, Age 37 years, Male)

Theme 4: Methods of coping

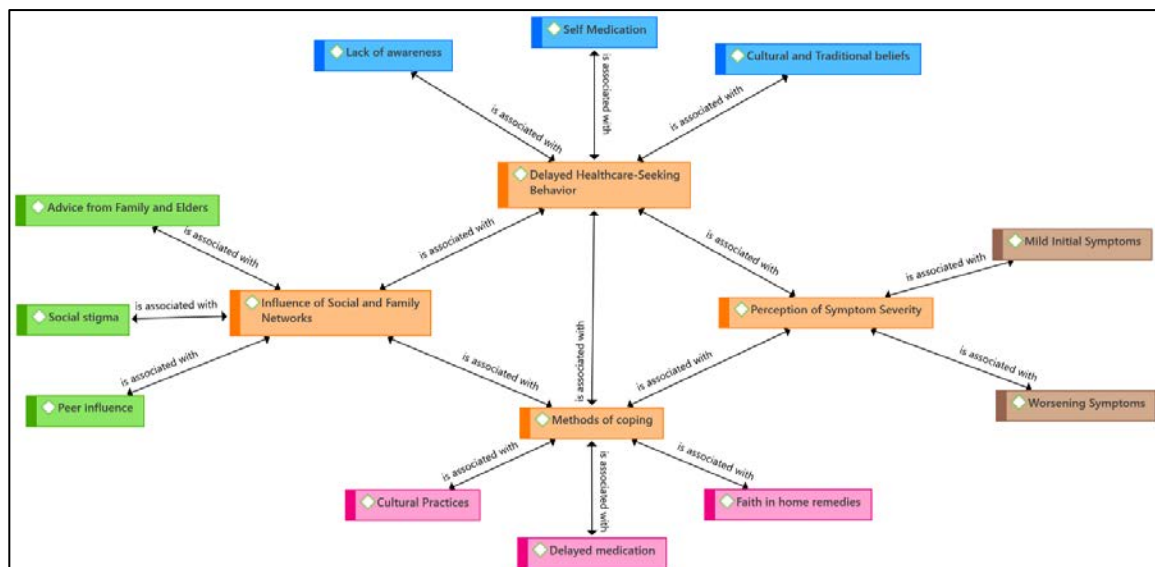
Sub-theme 1: Reliance on home remedies

Patients frequently used herbal drinks, holy water, and rice flour applications before considering modern treatment.

Sub-theme 2: Combination of traditional and modern medicine

Some patients turned to doctors only after exhausting traditional methods, sometimes combining both approaches.

Network diagram:



Explanation of the network diagram

Relationship between perception of symptom severity and delayed healthcare seeking behaviour

If the perception of the severity of symptom is mild, there is possible delay in seeking advice from healthcare professionals. It is only when the symptoms are severe that leads to visiting a healthcare professional.

Relationship between influence of social & family networks and delayed healthcare seeking behaviour

Advice from family members and relatives sometimes leads to delay in healthcare seeking which is also in case of prevalence of traditional and home remedies which influence the patients to rely more on such methods rather than seeking medical treatment.

Relationship between coping methods and delayed healthcare seeking behaviour

As mentioned above, there is prevalence of home remedies and traditional remedies before considering medical treatment. It is only when such methods fail, a patient seeks medical help.

Relationship between social & family networks and coping methods

The family and cultural beliefs influence the Coping methods like the use of home remedies or herbal medicines and other

religious beliefs and practises. The Influence of the Society can also be seen which sometimes dictates if a patient will seek medical treatment or stick to the home / traditional methods of treatment.

Relationship between symptom severity and coping methods

The coping methods are influenced by the severity of the symptoms wherein if the symptoms are mild, the patients seek home / traditional remedies and consider visiting healthcare professional on if the condition worsens.

DISCUSSION

This mixed-method study examines healthcare-seeking behaviour among mumps patients, highlighting demographic trends, symptom presentation, and socio-cultural influences. Out of 185 patients, the age group 1 years to 15 years has the highest cases of mumps, while the older age group is the lowest. Similar patterns of higher incidence in children and adolescents have been observed in studies across various regions. Children had the highest mumps incidence and notification rate in the EU/EEA region, China with the prevalence decreasing with age [6] [7].

In terms of gender distribution, 54% of mumps cases were observed in males, while females made up 46% resulting in a male-to-female ratio of approximately 1:2. This trend was observed across various countries, including higher rates in males [6]. A similar trend was observed where a large study reported a male predominance in Japan and Kashmir, India [8] [9].

The study observed a high incidence of local symptoms like swelling and pain but a relatively low incidence of systemic symptoms such as fever. By comparison, in a hospital-based prospective observational study, fever appears as the most common symptom followed closely by parotitis. The type of parotitis involvement is an important factor here: Bilateral involvement was seen more than unilateral swelling [9]. The difference in the prevalence of fever could be due to differences in the patient demographics, the stage of illness when symptoms were recorded, or even regional variations in symptom expression [10]. In our study, 65% of patients experienced bilateral swelling, which is consistent with findings from other studies.

In terms of laboratory findings, elevated serum amylase levels were observed in all 185 patients, which is a typical finding in mumps due to the involvement of the salivary glands. The elevation of serum lipase, C-Reactive Protein (CRP), and Erythrocyte Sedimentation Rate (ESR) were also consistent with systemic inflammation, which is common in viral infections like mumps. This is justified by the patterns observed in mumps due to parotid inflammation. Serum amylase elevation, a key indicator of salivary gland involvement, is consistently noted in mumps, though lipase levels tend to be less universally affected [11]. While CRP and ESR are often elevated during viral infections, their variability in mumps reflects differing systemic responses, as noted in CDC studies [12].

Of the 185 patients, 30 participants over the age of 18 were interviewed in depth. Patients marked by a significant lack of awareness about the disease's severity and neglecting of symptoms, reflect a pattern noted in other studies on infectious disease responses. Similarly, in southwest Ethiopia study poor health literacy and misinterpreting symptoms were also identified as major factors for delayed care [12]. Even the usage of traditional healers and home therapies resulted in considerable delays in accessing modern healthcare which indicated in the study. To justify the statement a study in southwestern Nigeria, the knowledge and perspectives in the management of common childhood illnesses shows that 40% of respondents reported using home medicines and 21% of caregivers used herbal mixtures to treat mumps whereas only 19% took doctor-prescribed medications [14].

The influence of social and family networks, especially advice from family members and elders, plays a significant role in healthcare-seeking behaviour. The factor in this delay of seeking medical care the patient represent that individuals may first

turn to remedies such as pitha guri (rice flour) or rituals that have been passed down through generations. This delay has similarities with broad healthcare-seeking trends reported in similar situations, such as studies on childhood diseases, where caregivers frequently delay seeking professional medical care due to faith in home remedies and cultural beliefs [13].

According to the findings of this study, many patients with mumps experience mild initial symptoms such as earache, common cold, and mild swelling. This is similar to the typical presentation of mumps as outlined by the CDC, where symptoms such as fever, headache, muscle aches, and swelling of the parotid glands are common, with initial symptoms sometimes resembling those of a common cold [15].

In this study, several participants reported that their initial mild symptoms, such as low-grade fever, slight discomfort around the jaw, and malaise, worsened over time. This highlights how the severity of symptoms—particularly facial swelling and general weakness—led to a realization that medical intervention was necessary. According to the CDC, mumps typically begin with mild symptoms like fever, headache, and muscle aches, but the hallmark of the disease is the swelling of the parotid glands, which can cause significant discomfort. This progression often leads to more severe cases, and complications such as orchitis or meningitis can occur if left untreated [15].

CONCLUSION

Delays in seeking medical attention were associated with cultural practices, dependence on traditional remedies, and low health literacy. The findings highlight the importance of public health efforts to raise awareness about mumps, addressing misconceptions about traditional remedies, and promote timely access to critical medical care and vaccinations to reduce the burden of disease and prevent complications.

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