



# PROFILE OF NASOPHARYNGEAL CARCINOMA IN DR. WAHIDIN SUDIROHUSODO HOSPITAL MAKASSAR 2011 – 2021

*Cita Nurinsani Akhmad\*, Nova Audrey Luetta Pieter\**

\* Department of Otorhinolaryngology-Head and Neck Surgery,  
Medical Faculty of Hasanuddin University, Makassar, Indonesia

## ABSTRACT

**Background:** Nasopharyngeal carcinoma (NPC) is Indonesia's most common type of head and neck malignancy. NPC presents non-specific signs and symptoms, which lead to late or missed diagnoses. Early detection and prevention are important based on the NPC profile. **Objective:** This study aims to reveal NPC's sociodemographic and clinical characteristics in Dr. Wahidin Sudirohusodo Hospital Makassar 2011 – 2021. **Method:** Observational descriptive study with a cross-sectional design was conducted by using secondary data collecting medical records of all NPC patients in Dr. Wahidin Sudirohusodo Hospital Makassar 2011 – 2021. **Results:** Out of 1.096 patients, 70.3% of the patients are male and most of them are Makassar and Bugis. A palpable lump in the neck is the most common complaint in presentation (28.8%), followed by nasal congestion (18.6%). Salted fish consumption was the most prevalent risk factor (28.1%). **Conclusion:** Studying sociodemographic and clinical characteristics of NPC patients are the most important factors that cause NPC problems.

**Keywords:** Nasopharyngeal carcinoma, characteristic

## Introduction

The most prevalent head and neck cancer in Indonesia is nasopharyngeal carcinoma (NPC), a malignant epithelial tumor that develops in the nasopharynx. <sup>(1,2)</sup> Southeast Asia is mainly where NPC is more prevalent. <sup>(1)</sup> With a total incidence estimated at 6.2/100,000 or 12,000 new cases annually, it continues to be a health burden in Indonesia. Unfortunately, a large amount these instances go unreported in Indonesia for a variety of reasons. <sup>(1,3)</sup>

According to GLOBOCAN (2020), there were 19,943 new cases of nasopharyngeal cancer recorded in Indonesia. 13,399 incidents of nasopharyngeal deaths were reported in Indonesia. <sup>(4)</sup>

NPC is one of the cancers that the Epstein-Barr Virus (EBV) is strongly related to and has a known geographic distribution. However, nasopharyngeal cancer only occurs in a tiny percentage of EBV-infected people. This shows that EBV is not a sufficient cause of this cancer on its own. It is also believed that genetic risk factors and/or environmental exposures contribute to the etiology of NPC. <sup>(5,6)</sup> Therefore, the family of NPC patients is a high-risk group for the occurrence of NPC, and this finding supports the genetic factor hypothesis, so it is important to do early screening and detection for family members of NPC patients. <sup>(6)</sup>

Beyond merely treating the condition, NPC provides several difficulties. The malignancy presents with a variety of non-specific signs and symptoms, and despite its high frequency, general practitioners may not be sufficiently informed of NPC to make a timely or accurate diagnosis, which may result in patients seeking treatment at an advanced stage. <sup>(7,8)</sup> The prevalence of NPC in Sanglah Hospital Denpasar has grown yearly, according to Saraswati et al. (2019), and it is more frequently discovered in an advanced stage. <sup>(9)</sup> According to Hibatullah, et al. (2021), in the second research, NPC patients' traits are brought on by non-specific symptoms, which causes them to seek medical attention at an advanced stage. <sup>(8)</sup>

Given that NPC has a significant influence on health, early identification and prevention are suggested as the most effective solutions to this issue. We need information on population-level risk variables and intervention goals to achieve that. As a result, the researchers are motivated to carry out this straightforward investigation using statistical data from the Department of Otorhinolaryngology-Head and Neck Surgery, continuing the prior data in the range of 10 years.

## Method

The objective of this observational descriptive study, which used a cross-sectional design and was conducted retrospectively, was to examine NPC patients' sociodemographic and clinical characteristics. The research subjects were all NPC patients at Dr. Wahidin Sudirohusodo Hospital Makassar between 2011 and 2021 who met the inclusion criteria, and the exclusion criteria were incomplete medical record data. Total sampling was used as the sampling technique in this study. The confidentiality of the subject's identity was ensured. The ethical clearance number is 505/UN4.6.4.5.31/PP36/ 2022.

## Results

During data extraction, we discovered that there were 1.096 medical records of NPC patients in Dr. Wahidin Sudirohusodo Hospital Makassar from 2011 to 2021.

Table 1. Sociodemographic Characteristics and Risk Factors of NPC in Dr. Wahidin Sudirohusodo Hospital Makassar 2011 – 2021

Characteristics and risk factors	n	%
<b>Characteristics</b>		
<i>Sex</i>		
Male	771	70.3
Female	325	29.7
<i>Age</i>		
1-15	13	1.2
16-30	110	10.0
31-45	372	34.0
46-60	452	41.2
>60	149	13.6
<i>Ethnicity</i>		
Makassar	463	42.2
Bugis	297	27.1
Toraja	184	16.8
Mandar	110	10.1
Others	42	3.8
<b>Risk factors</b>		
<i>Family</i>		
Yes	242	22.1
No	173	15.8
<i>Active smokers</i>		
Yes	273	24.9
No	197	17.9
<i>Passive smokers</i>		
Yes	53	4.8
No	48	4.4
<i>Betel consumption</i>		
Yes	96	8.7
No	87	7.9
<i>Alcohol consumption</i>		
Yes	107	9.8
No	98	8.9
<i>Salt fish consumption</i>		
Yes	308	28.1
No	206	18.8
<i>Sunlight exposure</i>		
Yes	121	11.0
No	114	10.4

According to Table 1, 771 (70.3%) of the NPC patients are male, and most of them (88.8%) are over the age of 30. The highest number of 15-years old was found in 5 cases (0.5%) in the 1-15 years age range. The youngest age is nine years. Patients came from various ethnicities in Indonesia and the most common are Makassar (42.2%) and Bugis (27.1%). The most known environmental risk factor is salted fish consumption, identified in 28.1% of patients. Table 1 shows that betel intake and passive smokers are the two lowest risk factors (8.7% and 4.8% respectively).

Table 2. Symptoms and Duration of NPC in Dr. Wahidin Sudirohusodo Hospital Makassar 2011 – 2021

Symptoms and Durations	n	%
<b>Neck lump</b>		
Yes	316	28.8
≤ 6 months	173	15.8
7-12 months	89	8.1
> 1 year	54	4.9
No	115	10.5
<b>Nasal congestion</b>		
Yes	204	18.6
≤ 6 months	132	12.0
7-12 months	47	4.3
> 1 year	25	2.3
No	106	9.7
<b>Bloody discharge</b>		
Yes	74	6.7
≤ 6 months	49	4.5
7-12 months	15	1.4
> 1 year	10	0.9
No	59	5.4
<b>Epistaxis</b>		
Yes	87	7.9
≤ 6 months	53	4.8
7-12 months	21	1.9
> 1 year	13	1.2
No	65	5.9
<b>Post nasal drip</b>		
Yes	49	4.5
≤ 6 months	23	2.1
7-12 months	15	1.4
> 1 year	11	1.0
No	36	3.3
<b>Diplopia</b>		
Yes	67	6.1
≤ 6 months	32	2.9
7-12 months	21	1.9
> 1 year	14	1.3
No	55	5.0
<b>Hearing defect (unilateral)</b>		
Yes	198	18.1
≤ 6 months	87	7.9
7-12 months	70	6.4
> 1 year	41	3.7
No	76	6.9

Hearing defect (bilateral)		
Yes	173	15.8
≤ 6 months	71	6.5
7-12 months	63	5.7
> 1 year	39	3.5
No	70	6.4
Tinnitus		
Yes	95	8.7
≤ 6 months	41	3.7
7-12 months	34	3.1
> 1 year	20	1.8
No	68	6.2

According to Table 2, the most prevalent complaint at presentation is a palpable lump in the neck, which is reported in (28.8%) of patients, followed by nasal congestion (18.6%) and unilateral hearing defect (18.1%). Most patients have felt these complaints for six months or less. However, there are patients who tolerate the complaint for more than a year before going to a doctor.

## Discussion

The NPC profile data from Dr. Wahidin Sudirohusodo Hospital Makassar from 2011 to 2021 may be used as input for this study's advantages in terms of providing scientific references to the patient profiles of NPC patients when used in clinical settings.

### Characteristics of the Patients

This study included a total sample of 1.096 patients and was conducted at the Dr. Wahidin Sudirohusodo Hospital in Makassar between 2011 and 2021. Sex, age, and ethnicity were investigated as characteristics. According to Asnir, et al. (2020), who said that men make up the most of NPC patients (69.3%), 70.3% of the participants in this study were male. Additionally, 75 persons (65.79%) of the male gender were detected, according to Saraswati et al.'s (2019) research. <sup>(1,9)</sup> In addition, according to GLOBOCAN (2020), NPC is the 5<sup>th</sup> most common cancer in men in Indonesia, with a total case rate of 10.7/100,000 people, compared to 3.0/100,000 for women. <sup>(4)</sup>

In this investigation of the prevalence of NPC according to age, those between the ages of 46 and 60 were the most often affected (41.2%). This data is consistent with the typical age trend of NPC, which starts to increase after the age of 30. According to Dawolo, et al. (2017), who said that NPC patients have the most patients (30.91%) who are from the age group between 46 and 55 years, the characteristics of the age of the patient in this study are comparable. Another study by Bachri et al. (2020) found that the most of cases (116, or 42%) were over 50 years old, followed by 68 cases (24%) aged 41–50 years, 62 cases (22%) aged 31–40 years, 25 cases (25%), and cases less than 20 years old. <sup>(9–11)</sup>

In this study, Makassar (42.2%), Bugis (27.1%), Toraja (16.8%), and Mandar (10%) make up the bulk of the patient population. These ethnic groups make up the bulk of South Sulawesi's population. Therefore, this distribution may only be a representation of the broader populace and not a genetic risk factor. In NPC situations, people of Makassar ancestry

are more common. There may not be a clear correlation between NPC risk factors and ethnicity, nevertheless, because NPC also affects people of different races. The Bugis-Makassar tribe accounted for 178 instances (63.57%) of the nasopharyngeal cancer patients, according to Bachri, et al (2020).<sup>(11)</sup>

### Risk Factors

Numerous variables have been linked to a higher risk of NPC. NPC has a complex etiology and is influenced by variables, including smoking cigarettes and eating salted seafood. <sup>(7)</sup>

In this study, 28.1% of patients had salted fish intake as their top risk factor. According to research by Jayalie, et al. (2016), eating salted fish was the most common risk factor (29.9%) in this study's findings. Another study by Kasim, et al. (2020) discovered a strong link between the incidence of NPC and the eating of salted fish. Additionally, Kurniasari (2020) found a link between nasopharyngeal incidence at the otolaryngology-head and neck department of RSUP Dr. Mohammad Hoesin Palembang and the intake of salted fish. <sup>(7,12)</sup> It is thought that nitrosamine, a component of salted seafood, is connected to the development of NPC. <sup>(13)</sup> In this survey, active smokers made up 27.3% of the population. According to Aini et al. (2022), nicotine, a substance contained in cigarettes, can influence pathways that lead to the development of cancer cells. <sup>(14)</sup>

We discovered that using betel was one of the least dangerous elements in our investigation. Therefore, even though betel use may be substantially linked to NPC in other nations, research on its participation in Indonesia, particularly in South Sulawesi, is still lacking.

### Sign and Symptoms

In this study, the most developed symptom was a palpable lump in the neck (28.8%). According to the results of this study and research conducted by Nafisa, et. al (2022) the most common chief complaint was an enlargement of neck lymph nodes (55.1%). The same is reported by Hibatullah, et. al (2021) who stated that the main complaint is the mass in the neck (38.89%). Moreover, the second most common complaint was nasal congestion (23.5%). <sup>(2,8)</sup> According to Jayalie, et. al. (2016), nasal congestion (49.1%) and a palpable lump in the neck (58.1%) are the two most frequent presenting complaints. According to research by Faiza, et al. (2016), the most common clinical symptom was a neck mass (93,17%), which was followed by a nasal obstruction (79,55%).<sup>(7,15)</sup>

Most individuals sought medical assistance after experiencing symptoms for six months or less, but regrettably, many patients continued to seek help even after six months or even years had passed. A worsening prognosis is frequently caused by a combination of ignorance of NPC, early, vague symptoms, and a lack of awareness. Therefore, a health professional's job is to inform patients about early detection methods and to encourage them to lead healthy lifestyles. <sup>(7)</sup>

In conclusion, when compared to previous research, the characteristics of 1.096 patients who visited Dr. Wahidin Sudirohusodo Hospital Makassar between 2011 and 2021 revealed a similar sex and age distribution. Most of NPC patients in this research complained of a neck bulge and

nasal congestion. As many patients were detected after six months of symptoms, we also discovered that NPC patients in Indonesia, particularly in South Sulawesi, still do not seek medical attention often. Additionally, consuming salted fish is the biggest risk factor. Additionally, it was discovered in this survey that Makassar and Bugis comprised the greatest number of ethnic groups.

The absence of sufficient quality data is the study's limitation. Some data must be omitted since we discovered that numerous medical records included inadequate data, which made it difficult to extract the data. Therefore, it is recommended that medical records be filled out entirely and made computerized, and that the next researcher fulfill the limitations of this study by including more variable variants.

#### Acknowledgment

Thank you to everyone who has supported, assisted, and guided me in completing this research article, especially Dr. Nova Audrey Luetta Pieter, Sp.T.H.T.B.K.L (K), the Department of Otorhinolaryngology-Head and Neck Surgery at the Hasanuddin University Medical Faculty, and numerous others who cannot be specifically named one by one.

The author acknowledged that there are constraints and flaws in this study work. I hope this study is helpful.

#### References

- Asnir RA, Yudhistira A, Friandita N. Profile of Nasopharyngeal Cancer Patients in Otorhinolaryngology-HNS Department Haji Adam Malik General Hospital Medan During 2014-2016. *Int J Nasopharyngeal Carcinoma*. 2020;02(03):79–81.
- Nafisa IM, Utama MS, Sunardi MA, Abel A. Profile of Nasopharyngeal Cancer Patients who Underwent Radiotherapy in Dr . Hasan Sadikin General Hospital Bandung. *Indones J Cancer*. 2022;16(2):88–93.
- Gondhowiardjo S, Meidania L, Senoaji F, Sekarutami SM. Nasopharyngeal Carcinoma Profile in dr. Cipto Mangunkusumo Hospital Year 2013. *Radioter Onkol Indones*. 2019;10(1):8–11.
- Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *A Cancer J Clin*. 2021;71(3):209–49.
- Wu L, Li C, Pan L. Nasopharyngeal carcinoma: A review of current updates. Vol. 15, *Experimental and Therapeutic Medicine*. 2018. p. 3687–92.
- Pieter NAL. Profile Iga (Vca-P18+Ebna1) and Viral Load Ebv Dna As a Risk Factor Among Relatives of Nasopharynx Carcinoma Patient With Ebv Positive At Dr. Wahidin Sudirohusodo Hospital in Makassar. *Int J Nasopharyngeal Carcinoma*. 2019;1(02):78–82.
- Jayalie VF, Paramitha MS, Jessica J, Liu CA, Ramadianto AS, Trimartani T, et al. Profile of Nasopharyngeal Carcinoma in Dr. Cipto Mangunkusumo National Hospital, 2010. *eJournal Kedokt Indones*. 2017 Jan;4(3).
- Hibatullah H, Mohamad PB, Heriady Y. Karakteristik Penderita Karsinoma Nasofaring di Rumah Sakit Umum Daerah Al-Ihsan Bandung Periode 2017-2019. *Pros Kedokt*. 2021;7(1):54–62.
- Saraswati IGA, Nuaba IGA, Suanda IK. Karakteristik Pasien Karsinoma Nasofaring di RSUP Sanglah Denpasar tahun 2014-2016. 2019;8(1):56–60.
- Dawolo AP, Utama DS, Kasim BI. Profil Klinis Karsinoma Nasofaring di Departemen THTKL RSUP Dr. Mohammad Hoesin Palembang Tahun 2014-2015. *Maj Kedokt Sriwij*. 2017;49(1):1–9.
- Bachri A, Jufri NI. Retrospective Review of Nasofaring Carcinoma in Wahidin Sudirohusodo General Hospital on 2011-2019 Period. *Int J Nasopharyngeal Carcinoma [Internet]*. 2020;02(03):82–4. Available from: <https://talenta.usu.ac.id/IJNPC/article/view/4400/3257>
- Kurniasari I. Hubungan Kebiasaan Konsumsi Ikan Asin dengan Kejadian Karsinoma Nasofaring di Departemen THT-KL RSUP. Palembang; 2020.
- Putera I, Ramadhan MG, Anindya S, Sutanto NR, Kurniawan A, Hosea FN, et al. Relationship Between Salted Fish Consumption and Nasopharyngeal Carcinoma: An Evidence-based Case Report. *Acta Med Indones*. 2015;47(1):72–7.
- Aini PNI, Hassan AH, Rahim TH. Scoping Review: Analisis Pengaruh Rokok terhadap Faktor Risiko Terjadinya Karsinoma Nasofaring. *Bandung Conf Ser Med Sci*. 2022;2(1):847–56.
- Faiza S, Rahman S, Asri A. Karakteristik Klinis dan Patologis Karsinoma Nasofaring di Bagian THT-KL RSUP Dr.M.Djamil Padang. *J Kesehat Andalas*. 2016;5(1):90–6.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

