

# Open or closed: Experience of head and neck radiotherapy masks - A mixed methods study



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THE AUTHORS DECLARED  
TO HAVE NO CONFLICT OF  
INTEREST.

# Introduction



Thermoplastic mask that severely restricts movement covering most of the face.



Can cause discomfort, anxiety, feelings of panic and a sense of vulnerability and exposure.



Patients with claustrophobia, psychiatric medication, or history of panic attacks are at higher risks



To counteract this, various support measures can be done from the staff

# Introduction

- An open mask is presumed to reduce discomfort.
- Allows positioning and monitoring with laser-based surface scanning.
- When position changes are detected, the treatment is interrupted and resumed after correction.



# Introduction



Alternately used open and closed mask – own controls.



Directly experienced the differences between the masks.



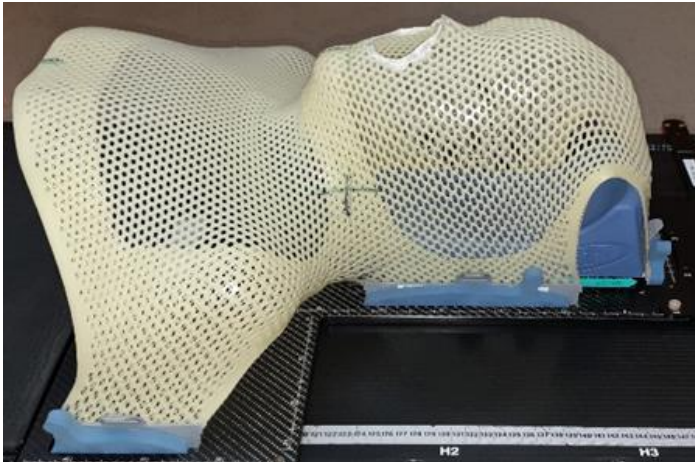
Aim was to evaluate patient preferences for open or closed mask and...



Pros and cons.



# Methods and sample



- Mixed method research design with both qualitative and quantitative data.
- 20 consecutive patients scheduled for curative treatment.
- 68Gy in 34 fractions for head and neck tumours at radiotherapy unit at Örebro University Hospital.
- Exclusion criteria were serious concomitant morbidity, pregnancy.

# Treatment procedures



- Both closed and open five-point fixation mask with same neck support.
- Two CT-scans one for each mask. Imported into Aria/Eclipse. Dose planning on both CT-scans.
- Randomisation determined which mask the participant used during the first week.
- Switched every fifth treatment.
- Open-mask treatment, initial positioning was performed with the AlignRTsurface scanning system. The position was then adjusted using orthogonal kV images.

# Data collection



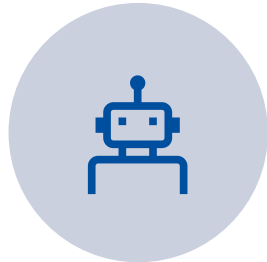
Patient-reported outcome measures with the Hospital Anxiety and Depression Scale (HADS), EORTC QLQ-30 and EORTC QLQ-H&N43.



Sixteen individual semi structured interviews with open ended questions. Analysed using conventional content analysis by Hsieh & Shannon.



# Result qualitative data



THEME 1: THE PATIENT  
EXPERIENCE OF  
PRODUCING THE MASK.



THEME 2: THE PATIENT  
EXPERIENCE OF WEARING  
THE MASK DURING  
TREATMENT.



THEME 3: PATIENT  
STRATEGIES TO  
OVERCOME THE  
DISCOMFORT.

# Theme 1: The patient experience of producing the mask



Was described in various ways.



Interesting and exciting, unpleasant, troublesome and claustrophobic, strong feelings of loneliness, anxiety, suffocation and thoughts of dying.



Varm, discomfort, crawling sensation.



Knowing that the actual radiotherapy session would last a shorter time was a comforting factor.

# Theme 1: The patient experience of producing the mask

*It felt unpleasant when the mask dried and shrank, it felt like my entire face was crawling and I thought that there was something wrong (pat. 9).*

*No problem lying still and letting the mask harden. It was just a matter of relaxing and leaving myself in the hands of the professionals (pat. 10).*

## Theme 2: The patient experience of wearing the mask during treatment



Both masks were described as firm.



Some participants found it easier to handle being immobilised with the mask.



Several participants speculated about which mask would be more suitable for other individuals.



A common experience with the open mask was that it was more difficult to get the head into the perfect position compared to the closed mask.



RT treatment was perceived in different ways, from a necessary evil to something exciting and interesting.



The mask elicited a variety of feelings, from relaxation to feelings of claustrophobia.



Some participants fell asleep during treatment, while others had a mental or intellectual struggle being trapped in the mask.

## Theme 2: The patient experience of wearing the mask during treatment

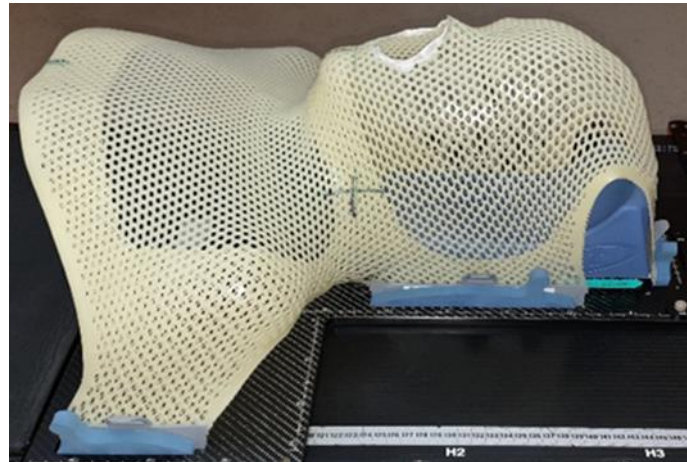


- The open mask was perceived as less stable and weaker.
- Provided a greater sense of freedom.
- Participants could choose to close their eyes, watch the ceiling or observe the treatment machine moving around their head.
- Offered better breathing opportunities.
- Reduced feelings of claustrophobia.
- The red laser light used to position the participant in the open mask was not perceived as a concern.



## Theme 2: The patient experience of wearing the mask during treatment

- Closed was perceived more stable.
- Smoother for both participants and staff.
- No need for the participants to help adjust the position and that could help the participant to be relaxed.
- More confining, causing feelings of entrapment, as the participant was stuck.
- Could pinch and cause an unpleasant pressure as the mask was squeezed over the face.
- Easier to relax in the closed mask.
- Severe anxiety and panic attacks, requiring medication.



## Theme 2: The patient experience of wearing the mask during treatment

*I like the closed one better because I was more relaxed in it. Felt that I was better situated (pat. 9).*

*Feeling that you are not secured as well with the open one. That the staff have to adjust your head more. The feeling of wanting to be helpful and lie just so in order to ensure that the treatment will be right. (pat. 7).*

*The open one is freeing. You get more involved with your surroundings and the staff around you. (pat. 8).*

*A perception of being trapped and a feeling of panic. My body was shuddering (pat. 3).*

## Theme 3: Patient strategies to overcome the discomfort



Being mentally prepared and knowing what to expect.



Forcing oneself to think of something else.



Putting oneself in another place mentally.



Mindfulness or prophylactic breathing were well helped.



Breathing exercises such as inhaling through the mouth and exhaling through the nose.



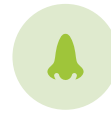
Counting the heartbeats.



Sedative drugs.



Arrive early for treatment to sit in the waiting room



Prepare by swallowing, drinking water, calming down and making sure to cough before the treatment.



support from the nurses and how important that support was to be able to undergo the treatment.



Knowledge that help was available strengthened the participants' own coping strategies.

# Which mask did the participants choose?

Before the final week, participants freely choose which mask to use during the last four fractions based on their preferences and experiences.

Twelve (60%) choose the open mask and eight (40%) chose the closed mask. This result did not show a statistically significant

In a similar study from Switzerland 27 of 29 choose the open mask.

Better psychological support and therefore patients are more relaxed?

# Conclusion

- Pros and cons with both types of mask.
- **Closed mask**
  - Stable
  - Quick setup
  - Feelings of being trapped
  - Uncomfortable pressure
- **Open mask**
  - Reduced feelings of claustrophobia
  - Better interaction with the surrounding
  - less confined
  - More time consuming
  - Less stable
- Participants did not have a strong preference for either mask.
- Patient should be offered a choice between open and closed masks.





*The staff's actions when they lay me up on the bench and how they take care of me make me feel comfortable and safe (pat. 11).*

# Acknowledgement

- An enormous thank you to all the colleagues at the Örebro radiotherapy unit who made this study possible through their hard work.



Thank you for listening!

