



Research Article

A SCITECHNOL JOURNAL

Benefit of a Contemporary Sleep Multidisciplinary Team (MDT): Patient and Clinician Evaluation

Stuart MacKay^{1*}, Niall Jefferson², Andrew Jones³, Terry Sands⁴, Charmaine Woods⁵ and Marco Raftopoulos⁶

Abstract

Background and Objective: Multiple Health Care Professionals contribute to the care of the sleep disordered patient, particularly those with Obstructive Sleep Apnoea (OSA). Our aim was to evaluate the usefulness of a Multidisciplinary Team (MDT) clinic (with the patient +/-family support in attendance), to both the clinician AND the patient.

Methods: The utility of the clinic, in which multiple clinicians jointly review sleep disordered patients and engaged in open discussion with patients and family member(s) about all treatment modalities, was evaluated using an 18-item patient questionnaire (6 pre-clinic, 12 post-clinic questions) and a 6-item clinician questionnaire (6 post-clinic questions). At the completion of 5 consecutive (monthly) clinics, an independent clinician (not present at the clinics), synthesised the data and arranged for statistical analysis.

Results: Patient understanding of options available in managing their OSA/sleep disorder increased from 20.7% to 89.7% ($p < 0.05$), and awareness of OSA as a chronic disorder increased from 62.1% to 96.6% ($p < 0.05$), following clinic attendance. In 31.8% of cases seen at the MDT, clinicians reported the patient did not receive the treatment expected ($p < 0.05$), and the initial proposed management had some adjustment made in 59.7% of cases ($p < 0.05$).

Conclusions: The use of a Sleep Multidisciplinary Team (MDT) as in the model presented, appears to benefit both patients and clinicians in the management of OSA/sleep disorders.

Keywords

Multidisciplinary; OSA; Sleep; Patient; Clinician

Summary at a Glance

Multidisciplinary Team (MDT) assessment in Obstructive Sleep Apnoea (OSA) and other sleep disorders is increasingly utilised. The best method to achieve this assessment is not known, and this study is the first of its kind to investigate any model of care for a sleep MDT.

Introduction

Obstructive Sleep Apnoea is a common condition [1], and is associated with increased risk of all-cause mortality [2], cardiovascular risk [3] and an increase in motor vehicle accidents [4]. Despite a recognised gold standard treatment option, Continuous Positive Airway Pressure (CPAP), a large proportion of patients have difficulty tolerating or adhering to treatment [5]. Prevailing opinion

and contemporary treatment paradigms recognise the importance of alternate options, but how best to assess patients for other therapies, remains vexed. Multiple Health Care Professionals contribute to the care of the sleep disordered patient, particularly those with Obstructive Sleep Apnoea (OSA). Our aim was to evaluate the usefulness of a Multi-Disciplinary Team (MDT) clinic, based on certain Head and Neck and other Cancer models, in evaluating and treating such patients. Interestingly, there is a paucity of literature assessing the validity of MDTs, especially outside of cancer MDTs, and recently the implementation of such clinics have been questioned [6].

Methods

Local Health Ethics Committee approval from the University of Wollongong (UOW HREC 12/467) was obtained for this study. Patients were recruited into this study between June 2012 and September 2012, following referral to the clinic by any of the participating clinicians.

Sleep MDT

Clinics were conducted at Illawarra ENT Head and Neck Clinic rooms and referred to as the "Sleep Multidisciplinary Team Meeting" ("Sleep MDT"). Each clinic was attended by at least one sleep physician, an otolaryngologist, at least one dentist, an exercise physiologist/personal trainer and a sleep disorders paediatrician. Patients and supporting family member(s) participated in the discussion with clinicians during the MDT meeting. Clinic patients were asked to complete an 18-item questionnaire; including 6 pre-clinic (Figure 1a) and 12 post-clinic questions (Figure 1b). The clinicians attending the clinic were asked to complete a 6-item post-clinic questionnaire (Figure 2).

Questionnaire Design

The questionnaires were prospectively collected and internally

ILLAWARRA MULTIDISCIPLINARY SLEEP APNOEA TEAM MEETING

Before the meeting

1A. Do you know your diagnosis before you attended the clinic?

Yes
 No

2A. Do you feel that you were adequately informed about your diagnosis before attending the clinic?

Yes
 No

3A. Are you prepared for the number of health professionals in the room?

Yes
 No

4A. Are you adequately informed about your condition?

Yes, completely
 To some extent
 No
 Told it will be discussed further at the MDT meeting

5A. Have the possible treatment options been discussed with you?

Yes, extensively
 To some degree
 No
 Told they will be discussed at the MDT meeting

6A. Do you understand that your condition requires long term follow up?

Yes
 No

Figure 1a: 6 questions completed by patients to determine their understanding of their illness and its treatment, prior to attending the Illawarra Multidisciplinary Sleep Apnoea Meeting.

*Corresponding author: Stuart MacKay, Illawarra ENT Head and Neck Clinic, Suite 1 & 2/8-10 Victoria Street, Wollongong NSW 2500, Australia, Tel: 02 42261055; Fax: 02 42276292; E-mail: sgmackay@ozemail.com.au

Received: August 28, 2014 Accepted: March 03, 2014 Published: March 06, 2014

ILLAWARRA MULTIDISCIPLINARY SLEEP APNOEA TEAM MEETING

After the meeting

1B. Do you better understand your diagnosis having attended the clinic?
 Yes
 No

2B. Do you feel that you have been adequately informed about your diagnosis having attended the clinic?
 Yes
 No

3B. Were you prepared for the number of health professionals in the room?
 Yes
 No

4B. Are you adequately informed about your condition having attended the clinic?
 Yes, completely
 To some extent
 No
 Told it will be discussed further at the MDT meeting

5B. Have the possible treatment options been discussed with you?
 Yes, completely
 To some extent
 No
 Told it will be discussed further at the MDT meeting

6B. Who made the final decision regarding the treatment choice?
 My primary specialist
 My specialist together with me
 It was already decided upon earlier
 No decision was made
 Consensus decision between all treating specialists

7B. Did you feel that you were being involved in the decision making process?
 Yes
 To some extent
 No
 I don't want to be involved in the decision

ILLAWARRA MULTIDISCIPLINARY SLEEP APNOEA TEAM MEETING

8B. Were family members or other persons that accompanied you allowed to contribute to the discussion?
 Not at all
 Just right
 Too much
 Family members or other persons did not accompany me

9B. Did the health professionals communicate well amongst each other?
 No
 Sometimes
 Mostly
 Always

10B. On the whole how would you rate your visit?
 Poor
 Average
 Good
 Very good

11B. By the time you were finished with the clinic did you feel that you had a clear idea of the treatment pathway?
 Yes
 No

12B. After attending the clinic do you understand that your condition requires long term follow up?
 Yes
 No

Thank you for your participation

Figure 1b: 12 questions completed by patients to determine their understanding of their illness and its treatment, *after* attending the Illawarra Multidisciplinary Sleep Apnoea Meeting.

validated after a pilot study on the first 8 patients. The questionnaires were developed by participating clinician consensus, after the initial 8 answer sheets were reviewed.

Data and Statistics

An independent reviewer (author 2) collated the data after five consecutive monthly clinics. Data is presented as counts and/or percentage. The data was grouped firstly into snorer/mild OSA (defined broadly as Apnoea-Hypopnoea Index <15) and moderate/severe OSA groups (Apnoea-Hypopnoea Index >15), then into adult (>18 years of age) and paediatric patients. Subsequently, clinician responses were matched to the relative severity of OSA and patient demographic. To determine if there was an association between categorical variables (e.g. patient understanding of their treatment options) and attendance at the MDT, a chi-square test (or Fisher's exact test, where appropriate) was performed using IBM SPSS

ILLAWARRA MULTIDISCIPLINARY SLEEP APNOEA TEAM MEETING

RESEARCH STUDY INTO QUALITATIVE ASSESSMENT OF MULTI-DISCIPLINARY MANAGEMENT OF PATIENTS WITH SLEEP APNOEA

Questionnaire for clinicians

For the referring clinician: Why did you refer this patient to MDT?

1. Did the patient receive the treatment you expected?
 Yes
 No

2. Was there any change in the proposed management?
 Yes
 No

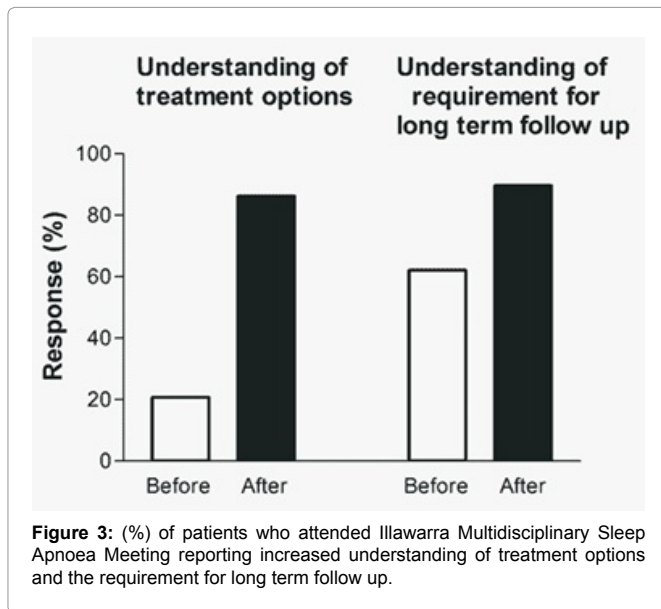
3. Did you feel that you were being involved in the decision making process?
 Yes
 To some extent
 No
 I don't want to be involved in the decision

4. Did the health professionals communicate well amongst each other?
 No
 Sometimes
 Mostly
 Always

5. Did reviewing this patient in the clinic improve your understanding of sleep apnoea management?
 Yes
 No

6. Would you recommend the MDT to any other clinicians?
 Yes
 No

Figure 2: 6 questions completed by the clinicians present at the Illawarra Multidisciplinary Sleep Apnoea Meeting *after* seeing the patients.



Statistics version 19 (Chicago, Illinois, USA). P<0.05 was considered a significant association.

Results

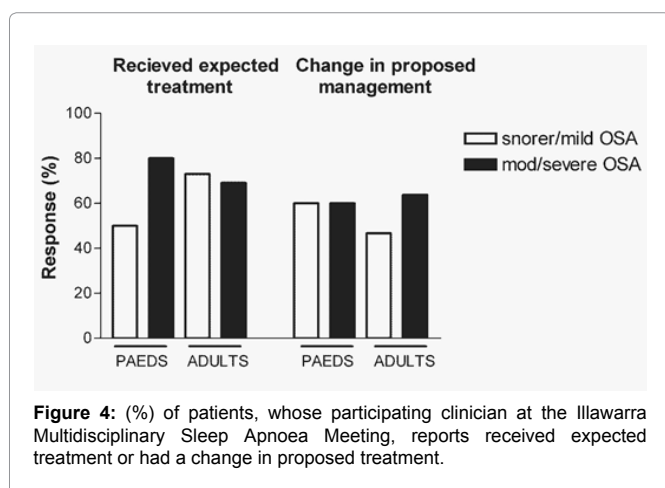
37 consecutive patients completed questionnaires (8 during the internal validation process and 29 subsequent patients), and 154 clinician questionnaires on all 37 patients (i.e. 4.16 questionnaires per patient seen) were completed post-clinic.

After the first 8 patients attended the clinic, there was an improvement in understanding of their diagnosis (7.17/10 pre-clinic to 8.7/10 post-clinic). From the main cohort of 29, awareness of options for management increased significantly (20.7% pre-clinic to 89.7% post-clinic, $p < 0.05$). Post-clinic, 96.6% of patients understood that their condition required long term follow up compared with 62.1% pre-clinic ($p < 0.05$, see Figure 3). 100% of patients felt they were being involved in the decision making process and 82.8% of patients felt that had a much clearer/complete understanding of the treatment pathway. In 37.9% of the patients, the final treatment decision was made by the patient and the treating specialist with the remaining number being decided by either consensus or the specialist alone. 96.5% of patients felt that the health professionals communicated well with each other, either mostly or always, and 72.4% of patients rated their visit as either very good or excellent.

On analysis of the 154 clinician questionnaires, the clinicians reported that in 31.8% of cases seen at the MDT the patient did not receive the treatment the clinicians had expected ($P < 0.05$). Further, the clinicians indicated that as a result of the MDT there was some change in the initial proposed management in 59.7% of cases ($P < 0.05$). Both of these findings were not dependent on the severity of OSA for either the adult ($P > 0.05$) or paediatric ($P > 0.05$) patient groups. 84.4% felt involved in the decision-making process (to some extent or greater) and 98.7% considered communication amongst the clinicians was done well, either mostly or always. In 77.9% of cases the clinicians indicated the clinic improved their understanding of sleep apnoea management and in 100% of cases the clinicians “would recommend” the MDT format as presented here, to other clinicians.

In the snorer/mild OSA paediatric group, 50% (10/20) of patients received the treatment the clinicians initially had expected and in 60% (12/20) of cases there was some change in the initial proposed management. In the adult group, 73.3% (22/30) of patients received the treatment initially expected and 46.7% (14/30) of patients had some change in the proposed management. In the moderate/severe OSA paediatric group, 80% (8/10) received the treatment initially expected by the clinicians and 60% (6/10) had some change in the proposed management. In the adult group, 69.1% (65/94) received the treatment initially expected and 63.8% (60/94) had some change in the proposed management (Figure 4).

Discussion



OSA is a heterogeneous disorder, with multiple contributing aetiological factors, highlighting the need for an integrated team approach. Whilst prompt diagnosis and referral remains important [7], appropriate assessment and long term management may require the input of multiple disciplines. In establishing a comprehensive Sleep MDT meeting, the authors aimed to bring those specialties together, allowing for a coordinated approach to management that specifically encourages open discussion with patients and family support members. The model for this open discussion includes referral by participating clinicians, attendance at the MDT clinic by the patient and family member(s), all MDT participants (ENT surgeon, sleep physician, dentist, weight loss expert, sleep psychologist, etc.) present to assess and speak with the patient and family member(s), and follow up discussion amongst the MDT participants.

A literature review failed to identify any consensus on a multidisciplinary clinic, and we believe the model discussed in this paper to be unique. The role of this project was to review both the patients’ and the clinicians’ evolving understanding of sleep apnoea (and other concomitant or associated sleep disorders) and the impact of the MDT. Like other quality of life MDT reviews [8], the overall results were positive in both patient satisfaction and patient understanding of their disease. Considering that in almost 60% of cases there was some change in the clinicians approach to management, the use of an MDT appears beneficial. We do note however that although the MDT appeared beneficial in changing the management of patients, this change was not dependent on the severity of OSA or the age of the patient. We postulate that a well organised team approach may in fact make moderate to severe OSA easier to manage (i.e. increased understanding of “the next step” if CPAP is rejected and/or not utilised in adults, or if residual disease exists in children post adenotonsillectomy). In milder forms of OSA, treatment options are open to a greater degree of discussion and consideration, and this may explain why management changes weren’t of greater magnitude in more severe disease, as one might intuitively believe.

Of particular note was improvement in patient understanding of treatment options, and the need for long term surveillance and care. There was no specific directive to ensure patients were informed of the need for long term surveillance. Given OSA is a chronic and potentially progressive condition, perhaps the importance of OSA was emphasised to patients by virtue of the number of clinicians present and the detailed discussion conducted.

This study was limited by lack of a control group of patients undergoing usual practice (i.e. without access to a review in the MDT). Also of value would be a future assessment on whether patients followed through (in the long term) with recommendations made in the MDT clinic.

Conclusion

A multidisciplinary clinic for patients with OSA, in the model discussed, appears to provide significant management benefits.

References

- Young T, Peppard PE, Gottlieb DJ (2002) Epidemiology of obstructive sleep apnea: a population health perspective. *Am J Respir Crit Care Med* 165: 1217-1239.
- Marshall NS, Wong KK, Liu PY, Cullen SR, Knudman MW, et al. (2008) Sleep apnea as an independent risk factor for all-cause mortality: the Busselton Health Study. *Sleep* 31: 1079-1085.
- Peker Y, Hedner J, Norum J, Kraiczki H, Carlson J (2002) Increased incidence

- of cardiovascular disease in middle-aged men with obstructive sleep apnea: a 7-year follow-up. *Am J Respir Crit Care Med* 166: 159-165.
4. Haraldsson PO, Carenfelt C, Lysdahl M, Tingvall C (1995) Does uvulopalatopharyngoplasty inhibit automobile accidents? *Laryngoscope* 105: 657-661.
 5. Sawyer AM, Gooneratne NS, Marcus CL, Ofer D, Richards KC, et al. (2011) A systematic review of CPAP adherence across age groups: clinical and empiric insights for developing CPAP adherence interventions. *Sleep Med Rev* 15: 343-356.
 6. Meagher AP (2013) Colorectal cancer: are multidisciplinary team meetings a waste of time? *ANZ J Surg* 83: 101-103.
 7. Rotenberg B, George C, Sullivan K, Wong E (2010) Wait times for sleep apnea care in Ontario: a multidisciplinary assessment. *Can Respir J* 17: 170-174.
 8. Oates J, Clark JR, Read J, Reeves N, Gao K, et al. (2008) Integration of prospective quality of life and nutritional assessment as routine components of multidisciplinary care of patients with head and neck cancer. *ANZ J Surg* 78: 34-41.

Author Affiliations

[Top](#)

¹Illawarra ENT Head & Neck Clinic, Clinical Associate Professor, University of Wollongong, Wollongong, NSW, Australia

²Accredited Otolaryngology Registrar, The Wollongong Hospital, Wollongong, NSW, Australia

³Illawarra Sleep Disorders Service, Senior Lecturer, University of Wollongong, Wollongong, NSW, Australia

⁴Illawarra Sleep Disorders Service, Department of Paediatrics, The Wollongong Hospital, Wollongong, NSW, Australia

⁵Department of Otolaryngology, Head and Neck Surgery, Flinders Medical Centre and Flinders University, Adelaide, South Australia, Australia

⁶Senior Resident Medical Officer, The Wollongong Hospital, Wollongong, NSW, Australia

Submit your next manuscript and get advantages of SciTechnol submissions

- ❖ 50 Journals
- ❖ 21 Day rapid review process
- ❖ 1000 Editorial team
- ❖ 2 Million readers
- ❖ Publication immediately after acceptance
- ❖ Quality and quick editorial, review processing

Submit your next manuscript at • www.scitechnol.com/submission