Self-Reported Experience of Tinnitus Patients for Different Outpatient Modes

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Research

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Abstract

Objective: To explore self-reported experience for different outpatient modes in tinnitus patients.

Methods: A observational study design was adopted. Tinnitus outpatients from the otological medicine and routine otolaryngology of our hospital fulfilling the study criteria were enrolled between October 2018 and January 2020. They were examined by semi-structured interview questionnaire. Groups were formed according to the different outpatient modes. The data were analyzed with SPSS 23.0.

Results: 193 questionnaires were included; 118 questionnaires of otological medicine outpatients, 75 questionnaires of otolaryngology outpatients. Nearly half of the otological medicine patients (48.3%) said that they communicated for 5–10 minutes with their doctor and a routine otolaryngology outpatient service usually takes 3–5 minutes (61.3%). However, most patients expected a longer time. Patient satisfaction and return visit rate of otological medicine (95.5% and 43.9%) were better than routine otolaryngology (77.3% and 7.1%). The main factors of efficacy considered physician interpretation and guidance.

Conclusion: Both outpatient models can give patients a more satisfactory experience. Specialized outpatient service can better fit the shared decision making model, conducive to the rehabilitation and management of tinnitus. However, the long-term follow-up and management of patients still need to be scrutinized and improved continuously.

Background

Tinnitus is commonly understood as the sensation or perception of sound that a person experiences mainly in the absence of external auditory stimuli [1, 2]. It can affect the quality of life to different degrees [3]. Tinnitus has been a worldwide complaint [4]. Its prevalence is estimated to be 10–15% in adults, and around 20% of adults who experience tinnitus require clinical intervention [5]. Because of the increase in noise levels in both professional and leisure settings with the ongoing demographic developments, the prevalence of tinnitus is expected to increase [6]. However, its etiology and pathogenesis are still unknown [7], and the management strategy has been controversial, with the evidence level of most treatment strategies low [8]. Evidence based healthcare has long promoted the importance of including patient values and preferences alongside research evidence in making clinical decisions [9]. Namely, the early "shared decision making", a novel model of the doctor-patient relationship [10]. Rose A et al. also found that with lengthier consultations more shared decision making competencies were observed [11]. Education consultation is currently one of the hot spots in tinnitus treatment. Previous studies have shown that it is a reliable intervention method [12, 13], and it is currently considered to be the most widely used [6] to teach patients to establish a neutral signal for tinnitus in different ways (mainly face-to-face communication). As an incurable chronic and long-term disease [14, 15], it has been reported that the main goal of tinnitus treatment is to improve the quality of life, rather than to provide absolute treatment [6], effective management to minimize its impact on the quality of life has become our focus. In fact, the

consultation and education process of tinnitus has been a part of it, and this process requires sufficient time for doctors and patients. Moreover, physician–patient communication and doctor–patient relationships for long-term refractory diseases are known to be challenging [16], while the patient’s satisfaction, belief, and attitude towards the disease will affect the intervention process and even the final health outcome [17, 18].

Most tinnitus patients are outpatients, and most interventions are almost completely outpatient services. Most tinnitus patients in China who need intervention are referred to the otolaryngology department, except in basic community health care institutions, which can provide simple consultation for tinnitus patients. In some large hospitals, in addition to the routine otolaryngology outpatient service (dealing with all otolaryngology-related diseases), there are also otological medicine departments which have been set up by professional otologist teams (dealing with deafness, tinnitus, vertigo-related diseases, and other conditions). Some otological medicine departments have been established several years ago in China, aiming to provide better curative and rehabilitation effects for patients with ear diseases. However, there is little research on the experience, the benefits or the effectiveness of the management of tinnitus patients by two different outpatient service modes in real world [19]. Therefore, in the study we explored the efficacy, satisfaction, treatment confidence and compliance of patients under different outpatient modes. From the perspective of real world evidence of tinnitus patients, this study aims to explore optimized, long-term and refined clinical approaches for the management of tinnitus.

Materials And Methods

Respondents

Tinnitus patients at the otological medicine outpatients and routine otolaryngology outpatients were selected as research subjects between October 2018 and January 2020. Groups were formed according to the different outpatient modes. Inclusion and exclusion criteria were the following: (a) conformity with primary tinnitus definition [5]; (b) no other causes, such as otitis media or craniocerebral injury; (c) no patients with serious complications or mental illnesses who could not cooperate with the study; and (d) patients willing to take questionnaires and experiments after informed consent. Informed consent to participate in the study was obtained from each participant mainly through oral notification and signing of a written consent form. The respondents did not fill in their real names, in order to protect their privacy, reduce their concerns about giving negative answers, and ensure the credibility of the questionnaire. The informed consent form and questionnaire were stored separately. This study was carried out in accordance with the Code of Ethics of the Declaration of Helsinki and approved by the Ethics in Research Committee at the Affiliated Hospital of Southwest Medical University (No. KY2018005).

Instrument

Through reviewing the relevant literature and investigating doctor–patient communication, keeping the purpose of the study in mind, we formulated an anonymous questionnaire addressing some problems

that occur in the process of tinnitus management. We conducted a preliminary experiment with 20 tinnitus outpatients at the Affiliated Hospital of Southwest Medical University. The questionnaire had good readability and surface validity, and the inaccuracy was appropriately modified. The final version of the questionnaire was comprised of 11 Chinese items for the initial visits and 12 Chinese items for the return visits. Pre-experiment data were not included. Data were collected with a two-part questionnaire. In the first part, respondents were asked to provide their basic information, including gender, age, location, duration time, and degree of tinnitus. The second part was a semi-structured interview on the patient's experience during the visit, with the main purpose of investigating the communication content, consultation time, patient satisfaction, patient confidence in the treatment, change in tinnitus, and effectiveness(see Supplementary file).

Collection of questionnaires

After informed consent was obtained, the respondents completed the questionnaires in the presence of a researcher without a time limit. Respondents were told that researchers had no personal or other interests. At least one researcher was required to be present in order to clarify incomprehensible questions and ambiguous answers on the spot. The completed questionnaires were submitted to data entry and unified storage.

Statistical analysis

Descriptive statistics were generated for questions regarding general characteristics of the respondents. The data are presented as counts (and percentages) for pre-determined response categories. Subjective questions in the questionnaire were analyzed based on the key points in the respondents' answers to the open-ended questions. Data were entered into the database and analyzed with Chi-square tests. Differences in categorical measures are reported as *P* values, with a significance criterion of $P < 0.05$. The data collection and input were completed by two researchers independently, and the differences were resolved through discussion.

Results

Participants

The inclusion of patients into this study is summarized in the flowchart shown in Fig. 1. A total of 195 questionnaires were collected, among which 2 were very incomplete (unanswered questions ≥ 6). Finally, 193 questionnaires were included, and groups were formed according to different outpatient appointments. Otological medicine outpatients answered 82 initial visit questionnaires (I) and 36 return visit questionnaires (R). Routine otolaryngology questionnaires included 70 primary care questionnaires and 5 return visits. The basic information of the interviewed patients, including gender, age, location, the duration, and degree of tinnitus, does not exhibit any statistically significant differences ($P > 0.05$). The data are summarized in Table 1.

Table 1
General characteristics of the participants

Characteristic	Otological medicine		Routine otolaryngology		χ^2	<i>P</i>
	N	Percentage	N	Percentage		
Total	118	100%	75	100%		
Gender						
Male	52	44.1%	34	45.3%	0.030	0.863
Female	66	55.9%	41	54.7%		
Age						
0–14	1	0.8%	2	2.7%	0.039	0.843
15–64	112	94.9%	69	92.0%		
≥65	5	4.3%	4	5.3%		
Duration						
<6 months	45	38.1%	28	37.3%	0.013	0.911
≥6 months	73	61.9%	47	62.7%		
Location						
Single ear	48	40.7%	24	32.0%	2.499	0.287
Bilateral ears	32	27.1%	28	37.3%		
Intracranial and other	38	32.2%	23	30.7%		
Degree (only for initial visit)						
Not a problem	31	37.8%	19	27.1%	1.725	0.189
A little	33	40.2%	33	47.1%		
Serious	16	19.5%	14	20.0%		
Very serious	2	2.4%	4	5.7%		

Communication content

Regarding the content of communication with newly diagnosed patients (items 7I and 8I), 74.4% of outpatients in the otological medicine department declared that physicians actively introduced tinnitus-related information to them, and 91.5% said doctors and their communication were helpful to understand tinnitus. Half of the routine otolaryngology outpatients replied their doctor did not take the initiative to provide them with tinnitus-related information, but nevertheless, 72.9% felt that communication was helpful. The communication and consultations at the otological medicine department were more active,

and more patients indicated that communication with the physician was helpful to manage the disease; this difference was statistically significant ($P=0.002$). The questionnaire data regarding visit-related questions are shown in Table 2.

Table 2
Self-report questionnaire (visit-related)

Item	Otological medicine		Routine otolaryngology		χ^2	P
	N	Percentage	N	Percentage		
Communication helped to understood tinnitus						
Yes	75	91.5%	51	72.9%	9.22	0.002
No	7	8.5%	19	27.1%		
The doctor provided tinnitus information actively						
Yes	61	74.4%	35	50.0%	9.654	0.002
No	21	25.6%	35	50.0%		
Satisfied with communication with the doctor on this visit						
Yes	106	95.5%	58	77.3%	14.157	0.001
No	5	4.5%	17	22.7%		
Confidence in follow-up treatment						
Very much	19	16.1%	11	14.7%	3.718	0.054
Some	73	61.9%	38	50.7%		
Not sure	24	20.3%	21	28.0%		
No	2	1.7%	5	6.7%		
Willing to return for follow-up visit						
Yes	106	89.8%	63	84.0%	1.432	0.232
No	12	10.2%	12	16.0%		
Relieved tinnitus for last consultation						
Yes	24	82.8%	2	40.0%	4.333	0.072
No	5	17.2%	3	60.0%		

Satisfaction

Of all of the respondents from the otological medicine department who answered item 9I/9R, 95.5% said they were satisfied with the doctor's communication. Only five negative opinions were put forward in the return visit questionnaires, and the reasons included short communication time (3 respondents), questionable professional skills of the doctor (1 respondent), and another (unspecified) reason (1 respondent). Twelve respondents (33.3%) answered item 13R of the return visit questionnaire, and all of the respondents expressed they expected doctors to help alleviate tinnitus. Among the routine outpatients in the otolaryngology department, 17 of the 70 newly diagnosed patients were unsatisfied with the doctor communication. The main reason (14) was that the communication time was short; 2 questioned the physician's professional skills, and 1 respondent did not specify the reason. A significant difference in patient satisfaction was observed between the two outpatient modes ($P < 0.001$) (Table 2).

Compliance

More than half of the patients (78.0%/65.4%) answered that they had varying degrees of confidence in the treatment of tinnitus (item 10I/10R). More than four-fifths of respondents in both modes expressed that they would show up on follow-up (item 11I/11R); the difference between the two groups was not statistically significant ($P = 0.232$) (Table 2). However, the actual return visit rate was only 43.9% in the otological medicine department; and 7.1% in routine otolaryngology outpatients. The main reasons (item 4R) for follow-up for returning patients are trust in professional skills, effectiveness, satisfactory communication with doctors, and return as requested (in this order of occurrence).

Self-reported efficacy

This question was only asked to return-visit patients. Of 36 completed questionnaires, 17 respondents indicated the symptoms had improved, 7 did not report any change, 5 reported symptoms had become more serious, and 7 respondents did not compare their symptoms before and after (item 3R). Only 17.2% thought that their last consultation did not relieve their tinnitus (item 5R) (Table 2). Of the 24 respondents whose tinnitus did not deteriorate, 66.7% agreed the explanation and guidance of the physician was the main factor that produced the curative effect, followed by medicine (54.2%) and self-adjustment (29.2%) (item 6R). Only 5 questionnaires were completed by return visit routine otolaryngology outpatients; 3 cases reported more serious symptoms and sought medical treatment again. The effects of routine otolaryngology are also not described in detail because of the small sample size. The main factors influencing treatment efficacy are summarized in Fig. 2.

Consultation time

According to the questionnaire answers (items 5I/7R and 6I/8R), among otological medicine outpatients, the doctor-patient communication time was usually 5–10 minutes (48.3%), followed by 3–5 minutes, and 16.9% took > 10 minutes. In routine otolaryngology outpatients, 61.3% declared they communicated with their physician for only 3–5 minutes; only 5 respondents indicated they had > 10 minutes. Of the otological medicine outpatients, 35.6% reported their expectations were met in terms of consultation time, and for routine otolaryngology outpatients, this proportion was only 22.7%; this difference was not

statistically significant ($P = 0.051$). It is worth mentioning that more than half of the patients (53.9%) would prefer to have > 10 minutes of communication with the doctor, and 33.2% received only 5–10 minutes. The results with respect to consultation time are reported in Table 3.

Table 3
Self-report questionnaire (consultation time-related)

Consultation time (minutes)	Otolological medicine N(%)		Routine otolaryngology N(%)		Total N (%)		<i>P</i>
	Actual	Expectation	Actual	Expectation	Actual	Expectation	
3–5	41 (34.7%)	7 (5.9%)	46 (61.3%)	7 (9.3%)	87 (45.1%)	14 (7.2%)	
5–10	57 (48.3%)	41 (34.7%)	24 (32.0%)	23 (30.7%)	81 (42.0%)	64 (33.2%)	
> 10	20 (16.9%)	63 (53.4%)	5 (6.7%)	41 (54.7%)	25 (12.9%)	104 (53.9%)	
No expectation	—	7 (5.9%)	—	4 (5.3%)	—	11 (5.7%)	
Met expectation	42 (35.6%)		17 (22.7%)		59 (32.4%)		0.051

Discussion

Millions of people worldwide are suffering from tinnitus [20], representing a major financial burden to the health care system [21]. Since it is a subjective disease, there is no objective means to identify the presence of tinnitus, so the assessment relies on patient reports [3, 22], which makes the self-reports of tinnitus conditions particularly important. Therefore, the original intention of this study is to understand the real world evidence of tinnitus patients, that is, to examine patient-centered self-reports during clinical diagnosis and treatment of tinnitus.

Tinnitus treatment remains an unsolved challenge. However, consultation, as discussed by us and other researchers, is a very important management method [23]. Tyler et al. [24] and Henry et al. [20] even proposed that consultation education should be included in every clinical tinnitus treatment regimen [25]. Educational counseling is a form of psychological therapy that is often very satisfactory, it is cost-effective even in the long term [12], and it is easy for clinicians to implement. A vast majority of patients in the present study also said that counseling relieves tinnitus; 66.7% (item 6R) of the return visit respondents who did not report deteriorated symptoms considered that the main factors behind the

curative effects included the physician's explanation and guidance, which is in conformity with a previous study. Due to the small sample size, we did not conduct a vertical comparison of the differences in the factors influencing efficacy of respective outpatient modes, but in general, counseling education, an easy to implement and minimal burden intervention method that brings strong benefits, is a clinical practice worthy to be widely implemented.

Tinnitus patients, the vast majority of whom have good physical and cognitive abilities, require and expect good health care. The traditional medical model has been unable to satisfy tinnitus patients. "People-centered" shared decision making has been developed for such complex chronic diseases [26]. At present, there is no clear research on tinnitus sharing decisions, but in fact, consulting education is one of them. Pryce H et al. proposed that patient preferences would matter considerably in how tinnitus is managed over time, so it is important to clarify patients' preferences in decision-making [27], which requires doctors and patients to have enough time to listen, understand and communicate. Educational counseling requires physicians to have adequate time and energy to explain instructions and interact with patients. In the communication between doctors and patients, long-term trust, a friendly relationship, and a scientific view must be established, and patients should be encouraged to take more responsibility for themselves, so that the patient can experience "peaceful coexistence" with the disease. Tinnitus patient relationships are notoriously challenging [16], especially with regard to the domestic fast-food treatment model, long communication and positive interactions can also reduce the dissatisfaction and negative association of patients in waiting [28], and effectively improve the doctor–patient relationship. National surveys have shown that many people want to be more involved in decisions about their care [29]. In fact, most patients show they expect to have more time to spend with their doctors.

One of the critical resources in today's healthcare is time [10]. In the real world of tinnitus, the time for patients in the otological medicine outpatient is obviously more abundant than that in the routine otolaryngology department, although either of the two modes, less than one-third of them meet the expectation. Yet, we found that with respect to patient visits, otological medicine outpatients, who could also be called specialized outpatients, felt that their doctors took more "initiative", physicians provided information more proactively, and in the process of interacting with doctors they felt more satisfied. The main reason for dissatisfaction with the communication was that the communication time was too short. Albrecht et al. [30] proposed that satisfaction is a determinant of compliance. Previous studies showed that patients' attitudes toward disease and satisfaction toward treatment can affect treatment adherence, even directly affect health outcomes [4, 18]. Therefore, we thought it was significantly related to the difference in return rate between the two models. Due to the small sample size, the efficacy of the two modes was difficult to compare. Moreover, it has been reported that usually otolaryngologists often feel unable to provide effective services and prefer referring their tinnitus patients to audiologists [31]. However, in a populous country such as China, where medical resources are relatively limited, the specialized outpatient mode, such as in the otological medicine department, seems to be the optimal way to improve the experience and quality of treatment for patients. It more increase tinnitus patients to their own sense of control, better service for tinnitus patients. In terms of patient satisfaction and treatment

adherence, specialized outpatient services that are more likely to be completed are more suitable for long-term and fine management of tinnitus.

In this study, doctors and patients were anonymous, i.e., they did not know each other, and the study was designed so as to avoid errors caused by the doctor–respondent inductive communication, reduce the bias of the results, and obtain objective and reliable results. However, it was possible to cross-visit patients, which made the result statistics biased. In retrospect, due to psychological cues, education, distance, social and economic relations, and other individual differences, information was biased to different degrees. Nevertheless, this is the real world evidence of tinnitus patients, and this study lays a foundation for the implementation of an optimal treatment path and long-term management of tinnitus patients, which should be continuously further optimized.

Conclusion

We analyzed the self-reported experience of tinnitus outpatients in different outpatient departments in the real world evidence. Educational consultation, an effective and easy intervention method for tinnitus, deserves clinical attention. In the current medical environment, the negotiation of the model sharing decision model is beneficial to improve the health outcomes and long-term refined management of patients with chronic tinnitus, and the outpatient department of otological seems to accomplish this better. However, the rehabilitation and management modes of tinnitus need to be scrutinized and improved continuously.

Practice Implications

This study described the self-reported patient satisfaction, treatment compliance, and management efficacy in tinnitus outpatients visiting different departments in the real world. The experiences and expectations of tinnitus patients were reported. The practical significance of continuous management of tinnitus is put forward, and an optimal diagnosis and treatment path for tinnitus patients in China is proposed.

Declarations

Acknowledgements

Not applicable.

Authors' contributions

Conceived and designed the experiments: DL and TX. Performed the experiments: JmP, LL, and YX. Analyzed the data: TX, TX and JR. Wrote the paper: TX and DL. Database searches, data input and final review: TX and DL.

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Availability of data and materials

All data generated or analyzed during this study are included within the article.

Ethical approval and consent to participate

This study was approved by the Ethics in Research Committee at the Affiliated Hospital of Southwest Medical University (No. KY2018005). All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Consent for publication

Written informed consent for scientific use of clinical data was given by all patients.

Competing interests

The authors declare that they have no conflicts of interest.

Supplementary Materials

Questionnaire for tinnitus patients.

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Figures

Figure 1

Flow diagram of the study selection process for this study

Figure 2

Main factors influencing the efficacy of different outpatient modes

Supplementary Files

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