

SUPPLEMENTARY MATERIAL

FULL TITLE: Factors influencing return for maintenance treatment with Percutaneous Tibial Nerve Stimulation for the management of the overactive bladder

PTNS Service Evaluation

Introduction

Thank you for taking the time to answer our brief questionnaire regarding your experience with the percutaneous tibial nerve stimulation (PTNS) clinic at the National Hospital for Neurology and Neurosurgery (NHNN).

Your feedback is very important to us.

PTNS Service Evaluation

Study ID

Please enter your 8-digit study ID:

Please re-enter your 8-digit study ID:

PTNS Service Evaluation

Qu1. Did you complete between 10-12 sessions of PTNS treatment?

- a. Yes
- b. No

PTNS Service Evaluation

Qu2. After completing the initial 10-12 PTNS sessions, did you have one (or more) top-up PTNS sessions?

- a. Yes, I continue to have PTNS top-ups.
- b. Yes, I used to come for PTNS top-ups but I stopped.
- c. No, I never had any PTNS top-up sessions.

If yes to question 2a, skipped to Qu.7-10. Skipped Qu11.

If yes to question 2b/c, proceeded to Qu.3-6.

PTNS Service Evaluation

What reason(s), **if any**, did you have for stopping PTNS treatment/top-ups?

Please select all that apply. You may select more than one answer in each section.

Qu3. PTNS Treatment

- a. My symptoms improved to the point where I no longer needed PTNS treatment.
- b. I experienced good results at first; however the treatment stopped being effective.
- c. I experienced some improvement in my symptoms but my treatment goals were not met.
- d. The treatment never had any effect on my symptoms.
- e. I experienced bothersome side effects due to PTNS treatment.
- f. The treatment procedure was uncomfortable.
- g. The treatment sessions took too long.
- h. I started an alternative treatment for my symptoms.
- i. None
- j. Other (please specify)

Scoring

Yes =1

No = 0

Qu4. Clinic

- a. I felt uncomfortable in the hospital environment.
- b. I felt uncomfortable with the clinic staff.
- c. I felt uncomfortable with having other patients in the room whilst I was receiving my treatment
- d. The waiting times in the clinic before each PTNS session were too long.
- e. It was difficult to contact the clinic to schedule PTNS top-up sessions.
- f. I forgot to attend the PTNS clinic.
- g. I forgot to schedule top-up sessions.
- h. None
- i. Other (please specify)

Qu5. Travel and Organization

- a. It took me a long time to reach the clinic.
- b. It was too expensive to travel to the clinic.
- c. It was difficult for me to reach the clinic for mobility reasons.
- d. It was difficult for me to reach the clinic for transport reasons.
- e. It was difficult to commit to the treatment schedule.
- f. The PTNS clinic took place at a time that was inconvenient for me.
- g. None
- h. Other (please specify)

Qu6. Personal Reasons

- a. My health condition prevented me from coming to the clinic.
- b. My other symptoms required more attention.
- c. My GP advised an alternative treatment.
- d. I have family obligations, which made it difficult for me to attend the clinic.
- e. None
- f. Other (please specify)

PTNS Service Evaluation

What factors, **if any**, pose a problem to you with regards to continuing PTNS treatment?

Please select all that apply. You may select more than one answer in each section.

Qu7. PTNS Treatment

- a. I experienced good results at first, however the treatment has stopped being effective.
- b. I experience good results but the effects wear off rapidly between PTNS sessions.
- c. I experienced some improvement in my symptoms, but my treatment goals have not been met.
- d. The treatment has never had any effect on my symptoms.
- e. I experience bothersome side effects due to PTNS treatment.
- f. The treatment procedure is uncomfortable.
- g. The treatment sessions take too long.
- h. I prefer a different treatment for my symptoms.
- i. None
- j. Other (please specify)

Qu8. Clinic

- a. I feel uncomfortable in the hospital environment.
- b. I feel uncomfortable with the clinic staff.
- c. I feel uncomfortable with having other patients in the room whilst I was receiving my treatment
- d. The waiting times in the clinic before each PTNS session are too long.
- e. It is difficult to contact the clinic to schedule PTNS top-up sessions.
- f. I forget to attend the PTNS clinic.
- g. I forget to schedule top-up sessions.
- h. None
- i. Other (please specify)

Qu9. Travel and Organization

- a. It takes me a long time to reach the clinic.
- b. It is too expensive to travel to the clinic.
- c. It is difficult for me to reach the clinic for mobility reasons.
- d. It is difficult for me to reach the clinic for transport reasons.
- e. It is difficult to commit to the treatment schedule.
- f. The PTNS clinic takes place at a time that is inconvenient for me.
- g. None
- h. Other (please specify)

Qu10. Personal Reasons

- a. My health condition prevents me from coming to the clinic.
- b. My other symptoms require more attention.
- c. My GP advised an alternative treatment.
- d. I have family obligations, which make it difficult for me to attend the clinic.
- e. None.
- f. Other (please specify)

PTNS Service Evaluation

Qu11. What was your main reason for stopping PTNS treatment/top-ups?

PTNS Service Evaluation

Qu12. Did you notice any changes in your symptoms following your last session of PTNS?

- a. Yes, my symptoms improved.
- b. Yes, my symptoms worsened.
- c. No, my symptoms stayed the same.
- d. Don't know.
- e. Prefer not to say.

PTNS Service Evaluation

Qu13. After the initial 10-12 weeks, how long did the treatment effect last approximately?

- a. Not applicable.
- b. Less than 1 week.
- c. 1-3 weeks
- d. 4-6 weeks
- e. 7-12 weeks
- f. 4-6 months
- g. 7-12 months
- h. More than 1 year
- i. Don't remember.

PTNS Service Evaluation

Qu14. What future changes, if any, would you like to see in the PTNS clinic? Please select all that apply.

- a. Flexible scheduling of treatment sessions.
- b. Written reminders for every treatment session.
- c. Shorter waiting times.
- d. Stick-on patch (surface electrode) instead of needle-based stimulation.
- e. None
- f. Other (please specify)

PTNS Service Evaluation

A number of alternative options to PTNS treatment are currently being investigated. These may become available in future.

Qu15. Which treatment options, if any, would you be interested in? Please select all that apply.

- a. PTNS treatment available for at-home use.
- b. PTNS treatment available at your local GP's office.
- c. Stick-on patch (surface electrode) instead of needle-based stimulation.
- d. A small stimulation device surgically inserted in the ankle to provide continuous stimulation of the nerve.
- e. None

PTNS Service Evaluation

Qu16. Overall, how satisfied were you with your experience at the PTNS clinic?

Extremely dissatisfied.	Very dissatisfied.	Somewhat dissatisfied.	Neutral.	Somewhat satisfied.	Very satisfied.	Extremely satisfied.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-3	-2	-1	0	1	2	3

PTNS Service Evaluation

Qu.17 Do you have any other comments, questions, or concerns?

S Figure 1 Percutaneous Tibial Nerve Stimulation (PTNS) Service Evaluation Questionnaire.



Please complete the questions to describe your experience of PTNS:

1. The treatment is comfortable to have

Strongly Disagree---1-----2-----3-----4-----5-----6-----7---Strongly Agree

2. The treatment improved my bladder symptoms

Strongly Disagree---1-----2-----3-----4-----5-----6-----7---Strongly Agree

3. Overall I am satisfied with the treatment

Strongly Disagree---1-----2-----3-----4-----5-----6-----7---Strongly Agree

4. I would recommend the treatment to a friend for this use

Strongly Disagree---1-----2-----3-----4-----5-----6-----7---Strongly Agree

5. I would like to continue with this treatment

Yes/No

If you have answered yes to question 5, could you please tell us why you would like treatment to be continued?

Group	1		2		3	
	Non-Responders		Responders, not returning for maintenance treatment		Responders, returning for maintenance treatment	
<i>N</i> =	25		17		31	
Pre-Treatment scores ⁺						
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)
<i>ICIQ-OAB Score</i>	23	9.04 (3.96)	17	9.41 (2.69)	29	9.05 (2.4)
<i>ICIQ-LUT symptoms QOL Score</i>	21	53.71 (11.23)	17	51.12 (10.67)	26	51.5 (9.77)
<i>3-day avg. Mean Voided Volume</i>	21	173.38 (75.3)	15	160.2 (34.23)	26	176.1 (57.71)
<i>3-day avg. Max. Voided Volume</i>	20	325.5 (148.4)	15	277.2 (71.26)	26	291.86 (98.45)
<i>3-day avg. # voids in 24h</i>	21	12.92 (4.96)	15	12.16 (5.47)	26	13.04 (4.47)
<i>3-day avg. daytime voids</i>	21	11.56 (4.83)	15	10.62 (4.73)	26	11.38 (4.17)
<i>3-day avg. nighttime voids</i>	21	1.37 (0.91)	15	1.58 (1.03)	26	1.67 (0.97)
<i>3-day avg. mean urge score</i>	19	2.43 (0.97)	14	2.4 (0.8)	23	2.6 (0.7)
<i>3-day avg. # of leakages</i>	21	3.44 (4.77)	15	2.22 (4.1)	26	2.44 (2.95)
<i>3-day avg. mean leak severity</i>	21	1.14 (9.04)	15	0.59 (0.69)	26	1.04 (0.75)

S Table 1 Baseline Characteristics and Pre-Treatment Scores.

Pre-Treatment scores ⁺ ANOVA, Bonferroni-Posttest – no sig. differences between groups.

Group	1		2		3		2-way ANOVA	Bonferroni-Posttest between groups		
	Non-Responders		Responders, not returning for maintenance treatment		Responders, returning for maintenance treatment					
N =	25		17		31		p-value	1 vs. 2	2 vs. 3	1 vs. 3
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)				
ICIQ-OAB 3a Frequency	15	-0.13 (0.83)	13	-0.08 (0.86)	27	-0.41 (1.14)	0.540	1.000	1.000	1.000
ICIQ-OAB 3b Frequency-Bother	15	0.07 (2.02)	13	-1.62 (3.2)	22	* -1.75 (2.68)	0.108	0.303	1.000	0.140
ICIQ-OAB 4a Nocturia	16	-0.19 (0.66)	13	-0.15 (0.38)	27	* -0.48 (0.9)	0.306	1.000	0.594	0.648
ICIQ-OAB 4b Nocturia-Bother	16	0.38 (1.86)	13	-1.0 (1.78)	26	-0.96 (2.92)	0.180	0.399	1.000	0.262
ICIQ-OAB 5a Urgency	15	0.37 (0.9)	13	* -0.69 (0.85)	26	* -0.67 (0.76)	* 0.001	* 0.004	1.000	* 0.001
ICIQ-OAB 5b Urgency-Bother	14	0.43 (2.28)	13	-1.62 (2.72)	23	-1.04 (2.57)	0.099	0.125	1.000	0.279
ICIQ-OAB 6a Leak	15	0.07 (0.88)	13	* -0.62 (0.77)	26	* -0.33 (0.68)	0.066	0.065	0.808	0.350
ICIQ-OAB 6a Leakage-Bother	15	0.33 (2.35)	13	-1.62 (3.18)	25	-1.12 (3.24)	0.196	0.279	1.000	0.434
ICIQ-OAB Score	16	0.09 (1.71)	13	* -1.54 (1.85)	27	* -1.85 (2.28)	* 0.012	0.110	1.000	* 0.012
ICIQ-OAB Score Bother	16	1.13 (5.3)	13	* -5.85 (7.02)	25	* -4.54 (8.13)	* 0.019	* 0.035	1.000	* 0.05
ICIQ-OAB OABA + OABB	16	2.84 (9.39)	13	* -7.38 (8.28)	26	* -5.42 (9.78)	* 0.008	* 0.015	1.000	* 0.022
ICIQ-LUT symptoms QOL Qu.3a	15	-0.13 (0.83)	15	-0.53 (1.06)	26	-0.27 (0.83)	0.463	0.681	1.000	1.000
ICIQ-LUT symptoms QOL Qu.3b	15	0.33 (3.35)	15	* -2.47 (3.72)	25	* -1.32 (2.53)	0.055	0.052	0.795	0.330
ICIQ-LUT symptoms QOL Qu.4a	15	-0.13 (0.52)	15	-0.6 (1.18)	25	* -0.56 (0.77)	0.236	0.415	1.000	0.390
ICIQ-LUT symptoms QOL Qu.4b	15	-0.4 (1.88)	15	-1.4 (3)	25	* -2.12 (2.83)	0.150	0.924	1.000	0.159
ICIQ-LUT symptoms QOL Qu.5a	14	-0.29 (0.73)	14	-0.36 (1.28)	26	* -0.38 (0.64)	0.942	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.5b	14	-0.14 (2.28)	14	-1.64 (2.98)	26	* -1.58 (2.93)	0.252	0.483	1.000	0.382
ICIQ-LUT symptoms QOL Qu.6a	15	-0.07 (0.7)	15	-0.33 (0.9)	27	-0.26 (0.86)	0.659	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.6b	15	-0.13 (2.8)	15	-1.27 (3.1)	27	* -1.44 (2.95)	0.374	0.894	1.000	0.522
ICIQ-LUT symptoms QOL Qu.7a	15	-0.33 (0.62)	15	-0.27 (1.03)	27	* -0.37 (0.74)	0.922	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.7b	15	-0.87 (2.23)	15	-1.2 (3.3)	27	* -1.67 (2.56)	0.640	1.000	1.000	1.000

ICIQ-LUT symptoms QOL Qu.8a	15	-0.33 (0.82)	15	-0.13 (1.06)	27	* -0.59 (0.84)	0.275	1.000	0.355	1.000
ICIQ-LUT symptoms QOL Qu.8b	15	-0.47 (2.45)	15	-0.6 (3.54)	27	* -2.93 (2.63)	* 0.01	1.000	* 0.043	* 0.029
ICIQ-LUT symptoms QOL Qu.9a	15	-0.4 (1.18)	15	-0.33 (1.23)	28	* -0.36 (0.68)	0.982	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.9b	15	-0.47 (4.67)	14	-0.36 (3.93)	28	* -1.82 (3.03)	0.370	1.000	0.710	0.788
ICIQ-LUT symptoms QOL Qu.10a	14	-0.71 (1.27)	15	0.27 (0.8)	27	0.07 (0.78)	* 0.013	* 0-0.019	1.000	* 0.038
ICIQ-LUT symptoms QOL Qu.10b	15	-1.53 (3.02)	14	1.29 (2.84)	25	-0.56 (1.96)	* 0.014	* 0.012	0.099	0.729
ICIQ-LUT symptoms QOL Qu.11a	15	-0.4 (1.06)	15	0.07 (0.96)	28	-0.07 (0.94)	0.402	0.587	1.000	0.892
ICIQ-LUT symptoms QOL Qu.11b	15	-0.53 (2.5)	15	0.73 (4.65)	26	-1.19 (3.41)	0.262	1.000	0.310	1.000
ICIQ-LUT symptoms QOL Qu.12a	15	-0.07 (0.96)	15	-0.27 (0.8)	27	-0.26 (1.02)	0.794	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.12b	15	0.53 (2.39)	15	-0.27 (3.03)	23	* -1.57 (3.51)	0.121	1.000	0.638	0.140
ICIQ-LUT symptoms QOL Qu.13a	14	-0.36 (0.63)	15	-0.53 (0.99)	27	-0.26 (0.94)	0.637	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.13b	14	-0.29 (1.64)	15	* -1.8 (2.83)	24	* -1.58 (3.09)	0.264	0.417	1.000	0.482
ICIQ-LUT symptoms QOL Qu.14a	14	-0.29 (0.73)	15	-0.27 (1.33)	26	* -0.38 (0.94)	0.924	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.14b	14	-0.36 (2.65)	14	-0.21 (4.21)	25	-1.08 (3.41)	0.705	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.15a	14	0 (0.39)	15	0.13 (0.52)	27	* -0.48 (0.94)	* 0.023	1.000	* 0.036	0.154
ICIQ-LUT symptoms QOL Qu.15b	14	0.5 (1.51)	14	-0.21 (2.64)	26	* -1.42 (2.64)	0.050	1.000	0.405	0.058
ICIQ-LUT symptoms QOL Qu.16a	14	0.14 (0.53)	15	-0.2 (0.56)	27	-0.11 (0.85)	0.403	0.600	1.000	0.849
ICIQ-LUT symptoms QOL Qu.16b	14	1.36 (2.9)	14	-0.43 (1.91)	25	-0.76 (2.67)	* 0.048	0.212	1.000	* 0.05
ICIQ-LUT symptoms QOL Qu.17a	14	-0.36 (0.84)	15	-0.2 (0.56)	27	-0.15 (0.6)	0.629	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.17b	12	-0.17 (1.75)	14	-0.43 (3.46)	25	-0.24 (2.13)	0.960	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.18a	14	0.21 (0.89)	15	-0.13 (0.99)	27	* -0.52 (0.8)	* 0.043	0.874	0.536	* 0.043
ICIQ-LUT symptoms QOL Qu.18b	14	0.14 (2.85)	14	-1.29 (3.58)	26	* -1.12 (2.32)	0.326	0.561	1.000	0.555

ICIQ-LUT symptoms QOL Qu.19a	14	-0.21 (0.7)	15	-0.13 (0.74)	27	-0.07 (1.11)	0.900	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.19b	14	-0.5 (1.87)	14	-1.14 (3.06)	25	-0.08 (2.64)	0.474	1.000	0.673	1.000
ICIQ-LUT symptoms QOL Qu.20a	14	-0.14 (0.86)	15	-0.07 (0.88)	27	* -0.37 (0.93)	0.531	1.000	0.899	1.000
ICIQ-LUT symptoms QOL Qu.20b	13	-0.62 (3.5)	15	-0.47 (3.31)	25	-0.92 (3.15)	0.907	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.21a	13	-0.15 (0.99)	15	-0.4 (1.06)	26	-0.27 (0.92)	0.800	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.21b	13	-1.15 (2.34)	15	-1.47 (3.56)	27	* -1.63 (3.03)	0.898	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Qu.22b	13	-0.38 (2.47)	15	-1.07 (2.52)	25	* -2.4 (2.77)	0.068	1.000	0.381	0.089
ICIQ-LUT symptoms QOL Sum Score	14	* -4.07 (4.1)	15	-4.27 (10.98)	26	* -5.35 (6.9)	0.852	1.000	1.000	1.000
ICIQ-LUT symptoms QOL Sum Score-Bother	14	-2.86 (17.78)	14	-13.5 (42.06)	24	* -23.42 (33.33)	0.182	1.000	1.000	0.205
ICIQ-LUT symptoms QOL QOLA+QOLB	16	* -33.44 (62.64)	16	-37.25 (74.18)	24	* -28.21 (38.58)	0.885	1.000	1.000	1.000
3-day avg. Mean Voided Volume	16	17.73 (42.52)	12	-3.85 (47.18)	25	2.34 (49.17)	0.437	0.700	1.000	0.929
3-day avg. Max. Voided Volume	16	11.87 (99.72)	12	-0.97 (58.28)	25	-4.01 (82.25)	0.833	1.000	1.000	1.000
3-day avg. # voids in 24h	17	-0.63 (3.59)	12	1.67 (6.25)	26	* -1.78 (3.02)	0.062	0.422	0.057	1.000
3-day avg. daytime voids	17	-0.51 (3.35)	12	1.17 (5.65)	26	* -1.4 (2.94)	0.163	0.738	0.174	1.000
3-day avg. nighttime voids	17	0.27 (1.14)	12	0.39 (0.93)	26	* -0.4 (0.7)	0.016	1.000	0.046	0.060
3-day avg. mean urge score	16	0.32 (0.7)	11	0.11 (0.66)	22	* -0.33 (0.67)	0.017	1.000	0.274	0.017
3-day avg. # of leakages	17	-0.06 (2.14)	12	0.28 (2.76)	26	* -0.75 (1.06)	0.244	1.000	0.370	0.730
3-day avg. mean leak severity	17	-0.13 (0.38)	12	0.11 (1.17)	26	* -0.43 (0.66)	0.102	1.000	0.123	0.593

S Table 2 Treatment Response between week 0 and week 12 per group.

Group	1		2		3		Group effect based on 2-way ANOVA	Bonferroni-Posttest between groups		
	Non-Responders		Responders, not returning for maintenance treatment		Responders, returning for maintenance treatment					
N =	25		17		31					
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	p-value	1 vs. 2	2 vs. 3	1 vs. 3
<i>"The treatment is comfortable to have"</i>	17	5.59 (0.94)	15	5.87 (1.41)	21	5.55 (1.7)	0.781	1.000	1.000	1.000
<i>"The treatment improved my bladder symptoms"</i>	17	2.97 (1.64)	14	4.07 (1.77)	22	5.2 (1.58)	* 0.0005	0.212	0.151	* 0.0003
<i>"Overall I am satisfied with the treatment"</i>	17	3.38 (1.93)	14	4.86 (2.03)	21	5.81 (1.59)	* 0.0008	0.091	0.414	* 0.0005
<i>"I would recommend the treatment to a friend for this use"</i>	16	4.94 (2.14)	14	6.14 (0.86)	22	6.48 (0.91)	* 0.005	0.068	1.000	* 0.005
<i>"I would like to continue with this treatment"</i>	15	0 (0)	16	1 (0)	22	1 (0)				

S Table 3 Satisfaction Survey at week 12.

Group	1	2	3
	Non-Responders	Responders, not returning for maintenance treatment	Responders, returning for maintenance treatment
<i>N</i> =	25	17	31
	N (%)	N (%)	N (%)
Extremely dissatisfied	0 (0)	0 (0)	0 (0)
Very dissatisfied	1 (4)	0 (0)	1 (3.2)
Somewhat dissatisfied	4 (16)	1 (5.9)	3 (9.7)
Neutral	4 (16)	1 (5.9)	4 (12.9)
Somewhat satisfied	6 (24)	6 (35.3)	3 (9.7)
Very satisfied	4 (16)	6 (35.3)	20 (64.5)
Extremely satisfied	5 (20)	3 (17.6)	0 (0)
Missing values	1 (4)	0 (0)	0 (0)
Pearson Chi-Square	1 vs. 2	2 vs. 3	3 vs. 1
p-value	0.489	* 0.031	* 0.006

S Table 4 PTNS Satisfaction according to PTNS-SEQ retrospectively.

Legends Supplementary Material

S Figure 1 Percutaneous Tibial Nerve Stimulation (PTNS) Service Evaluation Questionnaire.

S Figure 2 Satisfaction Survey.

S Table 1 Baseline Characteristics and Pre-Treatment Scores.

Pre-Treatment scores + ANOVA, Bonferroni-Posttest – no sig. differences between groups.

S Table 2 Treatment Response between week 0 and week 12 per group.

Changes within groups were calculated using T-Test, * $p < 0.05$. Differences between groups were calculated using 2-way ANOVA, Bonferroni-Posttest between groups, * $p < 0.05$.

S Table 3 Satisfaction Survey at week 12.

The survey asked questions addressing the satisfaction with the PTNS treatment. Answers ranked between 1 (strongly disagree) to 7 (strongly agree). Differences between groups were calculated using 2-way ANOVA, Bonferroni-Posttest between groups, * $p < 0.05$.

S Table 4 PTNS Satisfaction according to PTNS-SEQ retrospectively.

Differences between groups were calculated using Pearson Chi-Square Test, * $p < 0.05$.