A prospective real world study exploring associations between passively collected tracker data and headache burden among individuals with tension-type headache and migraine

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**Supplementary Table 1. Baseline treatment preferences – Analysis Population 1**

| Baseline treatment preferences                                      | Analysis Population 1 (N=350) | TTH (N=109) | Migraine (N=213) |
|---------------------------------------------------------------------|-------------------------------|-------------|------------------|
| **Medications ever taken to manage headache,** n (%)                |                               |             |                  |
| Over-the-counter pain relievers                                    | 344.0 (98.3)                  | 107.0 (98.2)| 209.0 (98.1)     |
| Prescription opioid medications                                    | 55.0 (15.7)                   | 8.0 (7.3)   | 42.0 (19.7)      |
| Prescription rescue (abortive) medications                         | 94.0 (26.9)                   | 11.0 (10.1) | 77.0 (36.2)      |
| Prescription preventive medications                                | 61.0 (17.4)                   | 2.0 (1.8)   | 54.0 (25.4)      |
| Other prescription medications                                     | 80.0 (22.9)                   | 13.0 (11.9) | 56.0 (26.3)      |
| Botox injections                                                    | 5.0 (1.4)                     | 0.0 (0.0)   | 4.0 (1.9)        |
| Other                                                               | 10.0 (2.9)                    | 2.0 (1.8)   | 7.0 (3.3)        |
| Did not use medications                                            | 1.0 (0.3)                     | 1.0 (0.9)   | 0.0 (0.0)        |
| **Factors for choosing medication,** n (%)                          |                               |             |                  |
| Personal experience with the medication                            | 233.0 (66.6)                  | 70.0 (64.2) | 148.0 (69.5)     |
| Severity of my symptoms                                            | 254.0 (72.6)                  | 66.0 (60.6) | 162.0 (76.1)     |
| Duration of my symptoms                                            | 192.0 (54.9)                  | 49.0 (45.0) | 127.0 (59.6)     |
| Safety profile of product/treatment according to label              | 41.0 (11.7)                   | 8.0 (7.3)   | 29.0 (13.6)      |
| How well the product/treatment is expected to work                  | 143.0 (40.9)                  | 41.0 (37.6) | 87.0 (40.8)      |
| Time until symptom relief could be expected (onset time)           | 130.0 (37.1)                  | 33.0 (30.3) | 90.0 (42.3)      |
| Side effects of the medication                                     | 105.0 (30.0)                  | 16.0 (14.7) | 79.0 (37.1)      |
| Other                                                               | 6.0 (1.7)                     | 2.0 (1.8)   | 3.0 (1.4)        |
| None                                                                | 4.0 (1.1)                     | 3.0 (2.8)   | 0.0 (0.0)        |
| **Situations and reasons for medication use,** n (%)                |                               |             |                  |
| Couldn’t handle the pain/discomfort                                | 264.0 (75.4)                  | 68.0 (62.4) | 173.0 (81.2)     |
| After several days of pain                                         | 78.0 (22.3)                   | 17.0 (15.6) | 57.0 (26.8)      |
| Alternative options not successful                                 | 142.0 (40.6)                  | 22.0 (20.2) | 105.0 (49.3)     |
| Have to work and/or perform certain tasks                          | 254.0 (72.6)                  | 80.0 (73.4) | 152.0 (71.4)     |
| At home                                                             | 118.0 (33.7)                  | 43.0 (39.4) | 66.0 (31.0)      |
| Travelling                                                          | 111.0 (31.7)                  | 33.0 (30.3) | 68.0 (31.9)      |
| Headache medication is expensive                                   | 13.0 (3.7)                    | 1.0 (0.9)   | 12.0 (5.6)       |
| Other                                                               | 8.0 (2.3)                     | 2.0 (1.8)   | 5.0 (2.3)        |
| Never use medication to treat my headaches                          | 5.0 (1.4)                     | 4.0 (3.7)   | 1.0 (0.5)        |
| **Non-medications strategies ever used to manage headache,** n (%)  |                               |             |                  |
| Avoided headache triggers                                          | 164.0 (46.9)                  | 35.0 (32.1) | 113.0 (53.1)     |
| Relaxation techniques to reduce stress†                            | 205.0 (58.6)                  | 50.0 (45.9) | 135.0 (63.4)     |
| Exercised                                                          | 158.0 (45.1)                  | 44.0 (40.4) | 101.0 (47.4)     |
| Changed diet                                                       | 130.0 (37.1)                  | 33.0 (30.3) | 84.0 (39.4)      |
| Improved sleep habits                                              | 178.0 (50.9)                  | 59.0 (54.1) | 105.0 (49.3)     |
| Acupuncture                                                       | 26.0 (7.4)                     | 6.0 (5.5)   | 17.0 (8.0)       |
| Cognitive behavioural therapy                                      | 8.0 (2.3)                     | 2.0 (1.8)   | 6.0 (2.8)        |
| Hot or cold compress                                               | 194.0 (55.4)                  | 40.0 (36.7) | 139.0 (65.3)     |
| Aromatherapy                                                      | 86.0 (24.6)                   | 20.0 (18.3) | 61.0 (28.6)      |
| Herbs/herbal medicine                                             | 68.0 (19.4)                   | 16.0 (14.7) | 48.0 (22.5)      |
| Never used non-medications strategies                              | 13.0 (3.7)                    | 10.0 (9.2)  | 3.0 (1.4)        |
| Other                                                             | 25.0 (7.1)                    | 2.0 (1.8)   | 20.0 (9.4)       |
| **Situations and reasons for non-medications use,** n (%)          |                               |             |                  |
| Couldn’t handle the pain/discomfort                                | 98.0 (28.0)                   | 15.0 (13.8) | 78.0 (36.6)      |
| After several days of pain                                         | 44.0 (12.6)                   | 9.0 (8.3)   | 32.0 (15.0)      |
| When medications are not successful                               | 136.0 (38.9)                  | 36.0 (33.0) | 90.0 (42.3)      |
| Have to work and/or perform certain tasks                          | 82.0 (23.4)                   | 12.0 (11.0) | 65.0 (30.5)      |
TTH, tension-type headache.

Supplementary Table 2. Summary of daily treatment preferences on headache days – Analysis Population 1

| Daily treatment preferences | Analysis Population 1 (N=349) | TTH (N=109) | Migraine (N=212) |
|-----------------------------|--------------------------------|-------------|-----------------|
| Proportion of headache days where as-needed medication was taken, % | | | |
| Median (IQR) | 55.2 (47.3) | 44.0 (58.3) | 59.1 (40.9) |
| Min; Max | 0.0; 100.0 | 0.0; 100.0 | 0.0; 100.0 |
| Proportion of headache days where non-medication strategy was used, % | | | |
| Median (IQR) | 45.5 (61.5) | 28.6 (62.3) | 50.0 (63.3) |
| Min; Max | 0.0; 100.0 | 0.0; 100.0 | 0.0; 100.0 |
| Participants who took medication type at least once, n (%) | | | |
| NSAID (includes OTC and prescription) | 279.0 (79.9) | 85.0 (78.0) | 170.0 (80.2) |
| OTC non-NSAID analgesic | 238.0 (68.2) | 63.0 (57.8) | 151.0 (71.2) |
| Prescription narcotics | 19.0 (5.4) | 3.0 (2.8) | 15.0 (7.1) |
| Prescription preventive | 113.0 (32.4) | 27.0 (24.8) | 77.0 (36.3) |
| Prescription anti-migraine | 43.0 (12.3) | 4.0 (3.7) | 36.0 (17.0) |
| Participants reporting reason for taking medication at least once, n (%) | | | |
| I regularly take medication to manage my headaches | 126.0 (36.1) | 33.0 (30.3) | 82.0 (38.7) |
| I sensed early signs of a headache | 172.0 (49.3) | 42.0 (38.5) | 114.0 (53.8) |
| I was experiencing tolerable headache pain that I didn’t want to get worse | 272.0 (77.9) | 73.0 (67.0) | 177.0 (83.5) |
| My headache pain was worse than usual | 265.0 (75.9) | 72.0 (66.1) | 170.0 (80.2) |
| I was experiencing headache pain that was bothersome | 287.0 (82.2) | 83.0 (76.1) | 178.0 (84.0) |
| I had been experiencing headache pain for several days | 130.0 (37.2) | 28.0 (25.7) | 87.0 (41.0) |
| I did not want to wait any longer for my headache pain to get better | 254.0 (72.8) | 66.0 (60.6) | 166.0 (78.3) |
| I needed to be able to work and/or perform certain tasks | 246.0 (70.5) | 60.0 (55.0) | 166.0 (78.3) |
| The headache occurred at an inconvenient time/place | 180.0 (51.6) | 39.0 (35.8) | 128.0 (60.4) |
| Other | 60.0 (17.2) | 19.0 (17.4) | 35.0 (16.5) |
| Participants reporting reason for not taking medication at least once, n (%) | | | |
| Headache pain was tolerable | 300.0 (86.0) | 96.0 (88.1) | 181.0 (85.4) |
| Able to wait for my headache pain to get better | 235.0 (67.3) | 69.0 (63.3) | 143.0 (67.5) |
| Able to work and/or perform certain tasks | 223.0 (63.9) | 65.0 (59.6) | 140.0 (66.0) |
| Medication would take too long before I would feel relief | 223.0 (63.9) | 65.0 (59.6) | 140.0 (66.0) |
| Concerns about medication side effects | 37.0 (10.6) | 11.0 (10.1) | 23.0 (10.8) |
| Not have access to headache medication | 32.0 (9.2) | 9.0 (8.3) | 21.0 (9.9) |
| Did not believe the medicine would be effective | 157.0 (45.0) | 50.0 (45.9) | 96.0 (45.3) |
| Recommendation to reduce the number of headache medications taken | 73.0 (20.9) | 14.0 (12.8) | 48.0 (22.6) |

* Percentages may not add up to 100% since participants could select multiple answers. † For example, meditation, progressive muscle relaxation, massage.
| Do not want to become dependent on medication | 13.0 (3.7) | 5.0 (4.6) | 7.0 (3.3) |
| Preferred not to take medication | 99.0 (28.4) | 33.0 (30.3) | 58.0 (27.4) |
| Other | 186.0 (53.3) | 62.0 (56.9) | 107.0 (50.5) |
| | 111.0 (31.8) | 35.0 (32.1) | 66.0 (31.1) |

* Participants without any headaches during the study period (n=1) were not included.

IQR, interquartile range; NSAID, non-steroidal anti-inflammatory drugs; OTC, over-the-counter; SD, standard deviation; TTH, tension-type headache.