The Impact Of Menopausal Hormone Therapy On Productivity And Health Care Utilization In Women: A Finnish Claims Database Study

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INTRODUCTION

Menopausal symptoms can severely affect quality of life, however, their broader impact on the healthcare system and the lost productivity is not well established. This study aims to compare all-cause healthcare resource utilization (HCRU), and lost productivity for women receiving menopausal hormone therapy (MHT) versus untreated controls, based on nationwide health data registers in Finland.

As the matching process of cases versus controls is still ongoing, this poster presents the methodological aspects as well as descriptive results of the MHT cohort.

METHODS

Study setting & cohort formation

The study included all women starting systemic menopause hormonal therapy (**MHT**; systemic therapies under ATC-codes G03CA03, G03CA57, G03CX01, G03DC05, G03FA, G03FB) between 1.1.2005 and 31.12.2023: 40-70 years of age at the first MHT purchase (index date) and with ≥2 systemic MHT purchases within a year (equaling ≥6 months MHT use), as identified from the Finnish Reimbursed Medicines Registry. Patients with baseline diagnosis of an estrogen dependent cancer (EDC), (i.e. breast; C50, ovarian; C56, or endometrial/uterine cancer;C54), or gender dysphoria; F64, as well as patients with fertility treatment during the year after index or pregnancy during the follow-up were excluded. MHT users were followed from index to end of follow-up (EOF) (Fig 1). Data from the Social Insurance Institution, Care Register for Healthcare, Statistics Finland and Finnish Center for Pensions was also collected for the cohort.

Statistical analyses

HCRU was estimated based on healthcare contacts and reimbursed medication purchases. Lost productivity was defined as missed workdays due to disability, part-time pensions, and long sick leaves (≥10 days) for women <65 years of age (~retirement age). HCRU and lost productivity were both analyzed using a mean cumulative function (MCF). Treatment duration was analyzed as time from index to discontinuation / diagnosis of EDC / death (event) or end of study (EOS; censoring).

Matching of MHT users versus untreated controls

In the matching process, an MHT user is allowed to be a control for another MHT user before becoming MHT user herself (marking EOF; Fig 1). We aim to have an exact match for age and index year. Other variables to be included in the matching are Charlson Comorbidity Index, annual earned income, educational and socioeconomic level, diagnosis of menopause, medication history and HCRU at baseline.
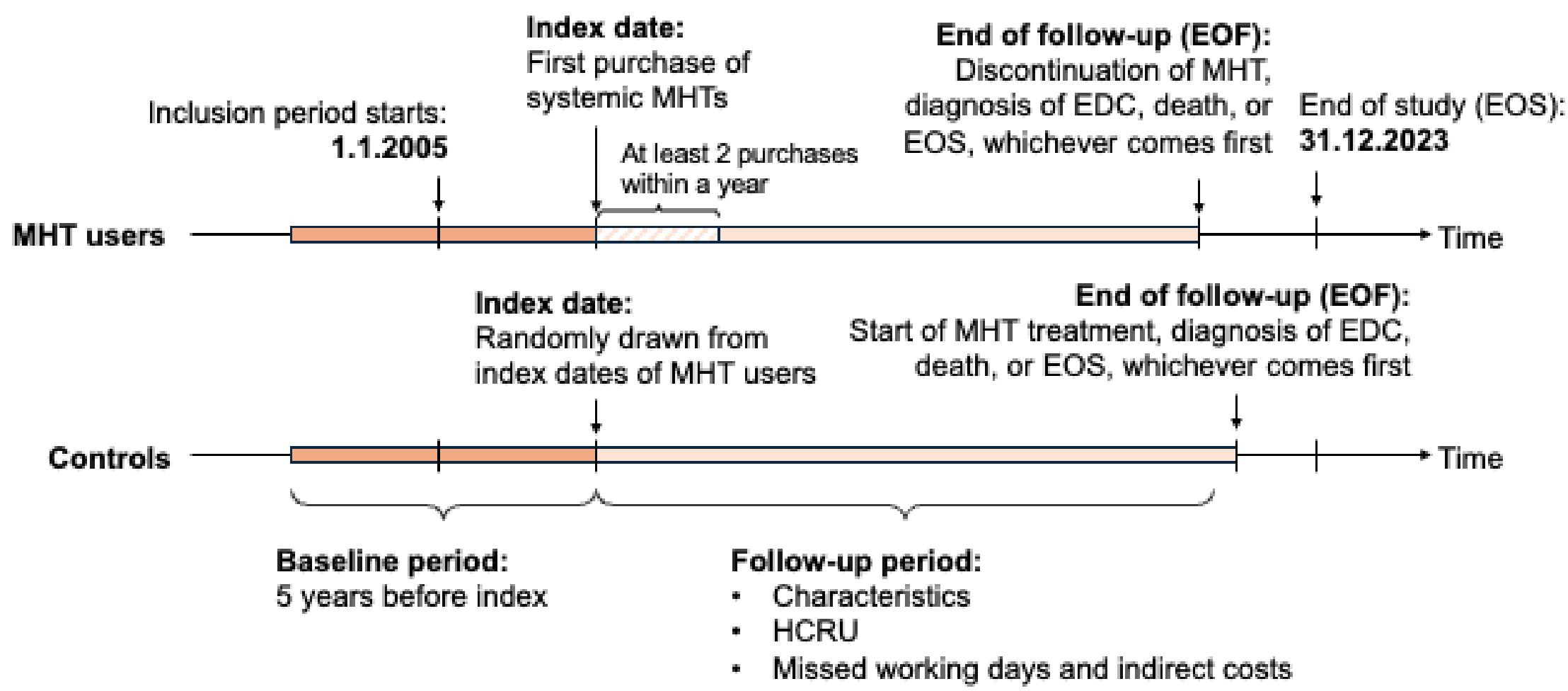

Figure 1. Study definitions. Discontinuation of menopause hormonal treatment (MHT) defined as no reimbursed purchases of systemic MHTs in 12 months. EDC; estrogen dependent cancer, HCRU; healthcare resource utilization.

RESULTS

Characteristics

- During the inclusion period, 189,694 MHT users were identified, with median follow-up of 4.2 years. Median age at index was 51.5 years **(Table 1)**.

- During the first year, estrogen-progestogen was initiated by 61,6%, estrogen by 36,6% and tibolone by 1.8%. The median treatment duration was 6.4 years **(Figure 2)**.

- Most prevalent reimbursed medication purchases and comorbidities prior to initiation of MHT are shown in **Tables 2** and **3**.

Table 1. Characteristics at index.

Characteristic	N = 189,694	Missing values
Age at index, years	51.5 (49.2, 53.8)	0 (0%)
Follow-up length, years	4.2 (2.0, 7.9)	0 (0%)
CCI* at index		0 (0%)
0	177,618 (93.6%)	
1	7,991 (4.2%)	
2	3,488 (1.8%)	
3+	597 (0.3%)	
Educational level at index		19,946 (10.5%)
Upper secondary education	69,252 (40.8%)	
Post-secondary non-tertiary education	2,543 (1.5%)	
Short-cycle tertiary education	45,906 (27.0%)	
Bachelor's or equivalent level	19,821 (11.7%)	
Master's or equivalent level	28,949 (17.1%)	
Doctoral or equivalent level	3,277 (1.9%)	
Socioeconomic status at index		3,589 (1.9%)
Self-employed persons	13,974 (7.5%)	
Upper-level employees with administrative, managerial, professional and related occupations	43,468 (23.4%)	
Lower-level employees with administrative and clerical occupations	83,557 (44.9%)	
Manual workers	23,414 (12.6%)	
Students	2,249 (1.2%)	
Pensioners	8,554 (4.6%)	
Others	10,889 (5.9%)	
Annual earned income during index year, €	30,887 (20,792, 42,181)	154 (0.1%)

*Charlson Comorbidity Index (CCI) calculated using diagnosis data from specialized care from 5 years before the index date.
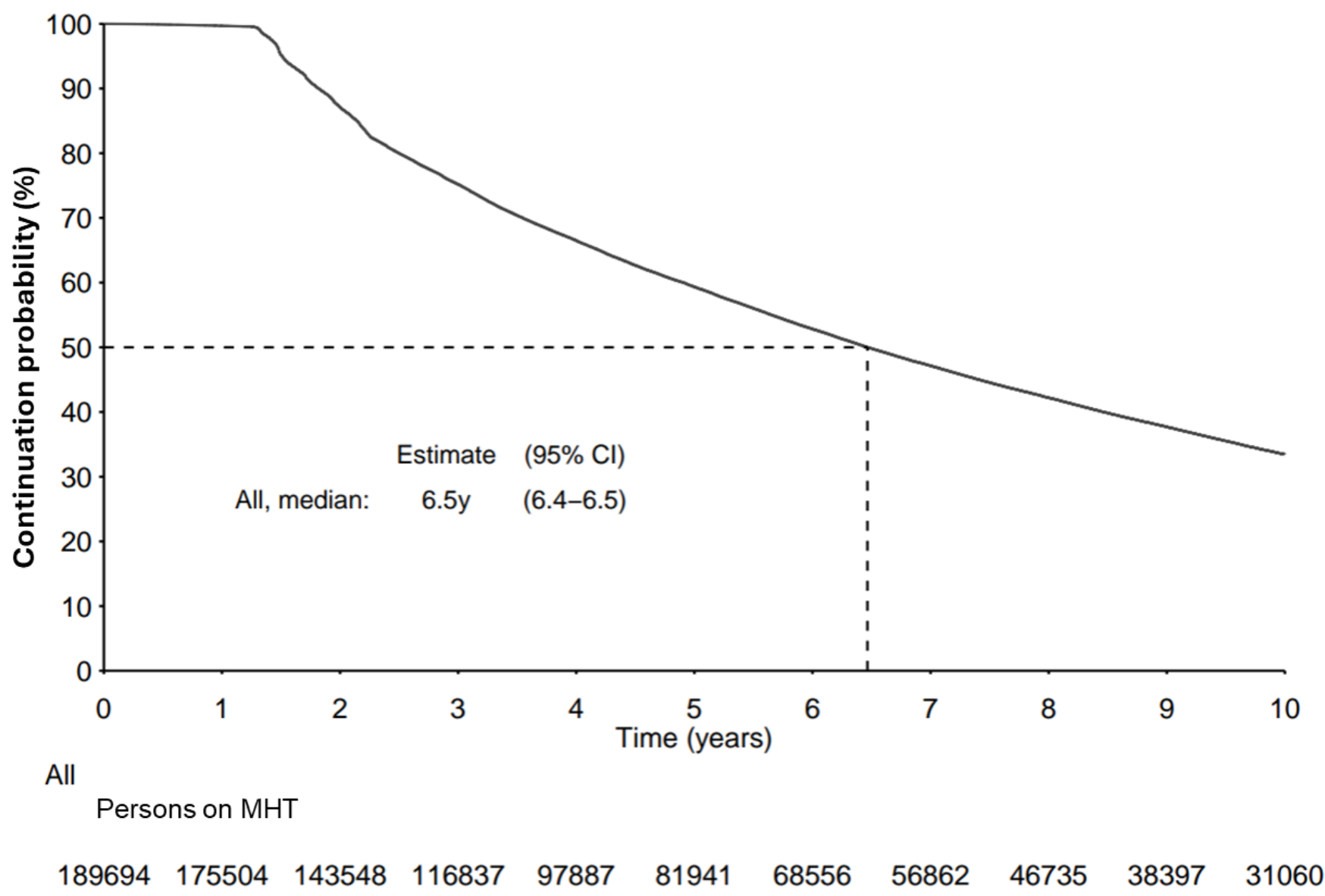

Figure 2. Median treatment duration of systemic menopausal hormone therapy.

Table 2. Most prevalent diagnoses from specialized care from 5 years before the initiation of menopausal hormone therapy.

ICD-10	Description	N (%)
N92	Excessive, frequent and irregular menstruation	20,439 (10.8)
R10	Abdominal and pelvic pain	18,957 (10.0)
D25	Leiomyoma of uterus	16,770 (8.8)
M54	Dorsalgia	11,825 (6.2)
N83	Noninflammatory disorders of ovary, fallopian tube and broad ligament	9,260 (4.9)
N95	Menopausal and other perimenopausal disorders	9,120 (4.8)
M51	Other intervertebral disc disorders	8,539 (4.5)
M75	Shoulder lesions	7,932 (4.2)
F32	Depressive episode	7,348 (3.9)
R87	Abnormal findings in secretions and smears from cervix uteri vagina vulva	6,971 (3.7)
I10	Essential (primary) hypertension	6,390 (3.4)
J45	Asthma	6,333 (3.3)
M17	Gonarthrosis [arthrosis of knee]	6,134 (3.2)
R06	Abnormalities of breathing	6,023 (3.2)
G56	Mononeuropathies of upper limb	5,909 (3.1)

ICD-10; International Classification of Diseases, Tenth Revision.

Table 3. Most prevalent reimbursed medication purchases from 5 years prior to initiation of menopausal hormone therapy.

ATC	Description	N (%)
J01	Antibacterials for systemic use	144,212 (76)
M01	Antiinflammatory and antirheumatic products	143,133 (75.5)
N02	Analgesics	84,674 (44.6)
M03	Muscle relaxants	67,216 (35.4)
A02	Drugs for acid related disorders	65,869 (34.7)
R01	Nasal preparations	62,082 (32.7)
N06	Psychoanaleptics	50,433 (26.6)
R06	Antihistamines for systemic use	50,099 (26.4)
R03	Drugs for obstructive airway diseases	49,374 (26.0)
N05	Psycholeptics	44,603 (23.5)
G03	Sex hormones and modulators of the genital system*	43,621 (23.0)
D07	Corticosteroids, dermatological preparations	38,759 (20.4)

* Category includes all preparations under ATC code G03, apart from systemic MHTs considered at inclusion. ATC; Anatomical Therapeutic Chemical (ATC) Classification System.

HCRU and lost productivity

During the first 4 years of follow-up, MHT users had an average of

- 9 specialized care contacts, 33 primary care contacts, and 56 reimbursed medication purchases per person **(Figure 3A)**.

- 33 workdays were missed due to long sick leaves, 63 days due to disability pensions, and 1 day due to part-time pensions per person **(Figure 3B)**.
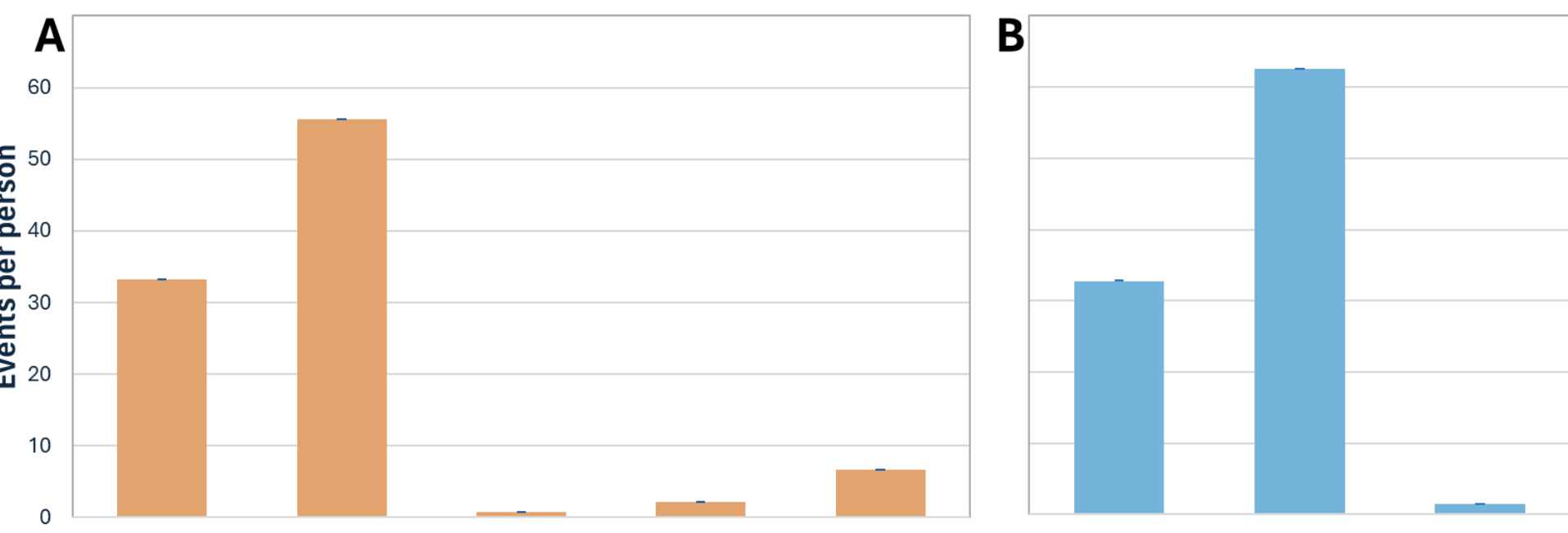

Figure 3. Health care resource utilization as events per patient (A) and missed workdays per patient (B) during the first 4 years post MHT treatment initiation.

CONCLUSIONS

Finnish health data registers have high national coverage and data quality due to a universal healthcare system and mandatory data recording. Key strengths include population-wide data, comprehensive clinical data and the ability to link data across multiple registries. Due to laborious matching process and to ensure the reliability of the comparative analyses, the data presented here shows only the descriptive results (demography, HCRU and loss of productivity) of MHT users.

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