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BMI 701 Assignment 1

## Question 1.

|  |  |  |
| --- | --- | --- |
|  | Query | Result |
| A | select count(\*) from `patients` where `patients`.`sex` = 'F'; | 16751 |
| B | select count(\*) from `diag3d` where diag3d.diag = '(250) Diabetes mellitus'; | 1261 |
| C | select count(\*) from `patients`  join `pmh` on `patients`.`id` = `pmh`.`id`  join `drugs` on `patients`.`id` = `drugs`.`id`  where `pmh`.`arthritis` = 1  AND `drugs`.`drug` = 'celecoxib'; | 101 |
| D | select \* from (  select count(`visitreason`) as 'count',  visitreason  from `patients` group by `visitreason`) as A  order by `count` desc | 1925  General medical examination |
| E | select count(\*) from (  select count(\*) as `count` from `patients`  join `tests` on `patients`.`id` = `tests`.`id`  where `tests`.`test` in ('glucose', 'hba1c')  group by `patients`.`id`) as `A`  where `A`.`count` = 2; | 395 |

## Question 2:

a)

select count(\*) from `patients`

join `pmh` on `patients`.id = `pmh`.id

where `pmh`.diabetes = 1;

Result: 2955

select count(\*) from `patients`

join `pmh` on `patients`.id = `pmh`.id

join `tests` on `tests`.id = `patients`.id

where `pmh`.diabetes = 1 and `tests`.test = 'hba1c'

Result: 441

441/2955 = 14.9%

b)

select count(\*) from `patients`

join `pmh` on `patients`.id = `pmh`.id

where `pmh`.htn = 1

Result: 7026

select count(\*) from `patients` where id in (

select `patients`.id from `patients`

join `pmh` on `patients`.id = `pmh`.id

where `pmh`.htn = 1)

and sbp is null or sbp = '';

Result: 1992

1992/7026 = 28.4%

c)

select count(`patients`.id) from `patients`

join `pmh` on `patients`.id = `pmh`.id

where `pmh`. hyperlipid = 1

Result: 3975

select count(\*) from (select id from `drugs` where `drugs`.id in (

select `patients`.id from `patients`

join `pmh` on `patients`.id = `pmh`.id

where `pmh`.hyperlipid = 1) group by id) as A

Result: 3463

3975 - 3463 = 512 who are not taking drugs

512 / 3975 = 12.9%

Question 2 but looking at just males

a)

select count(\*) from `patients`

join `pmh` on `patients`.id = `pmh`.id

where `pmh`.diabetes = 1 and `patients`.sex = 'M';

Result: 1336

select count(\*) from `patients`

join `pmh` on `patients`.id = `pmh`.id

join `tests` on `tests`.id = `patients`.id

where `pmh`.diabetes = 1 and `tests`.test = 'hba1c' and `patients`.sex = 'M';

Result: 207

207/1336 = 15.5%

b)

select count(\*) from `patients`

join `pmh` on `patients`.id = `pmh`.id

where `pmh`.htn = 1 and `patients`.sex = 'M';

Result: 3072

select count(\*) from `patients` where id in (

select `patients`.id from `patients`

join `pmh` on `patients`.id = `pmh`.id

where `pmh`.htn = 1 and `patients`.sex = 'M')

and sbp is null or sbp = '';

Result: 887

887/3072 = 28.9%

c)

select count(`patients`.id) from `patients`

join `pmh` on `patients`.id = `pmh`.id

where `pmh`. hyperlipid = 1 and `patients`.sex = 'M'

Result: 1887

select count(\*) from (select id from `drugs` where `drugs`.id in (

select `patients`.id from `patients`

join `pmh` on `patients`.id = `pmh`.id

where `pmh`.hyperlipid = 1 and `patients`.sex = 'M') group by id) as A

Result: 1623

1887 - 1623 = 264 who are not taking drugs

264 / 1887 = 14.0%

**Overall, recommended interventions are less followed now compared to 2003.**

## Question 3

select count(sbp) from patients where sbp like '%0';

Result: 5908

select count(sbp) from patients where sbp is not null or sbp != '';

Result: 15630

select count(dbp) from patients where dbp like '%0';

Result: 6208

select count(dbp) from patients where dbp is not null or dbp != '';

Result: 15618

Do another pass on sbp that end in other numbers:

|  |  |
| --- | --- |
| **Ends In** | **Records** |
| 0 | 5908 |
| 1 | 416 |
| 2 | 2255 |
| 3 | 392 |
| 4 | 1601 |
| 5 | 549 |
| 6 | 1400 |
| 7 | 445 |
| 8 | 2201 |
| 9 | 463 |

**There does seem to be a preference for measurements to end in 0**

## Question 4

Question:

Our surroundings such the food we eat, the cultures we follow, and our lifestyles can attribute to certain disease progressions.

Which region has the highest number of patients diagnosed with hyperlipid and what age group do most of these patients belong to?

select `patients`.region as 'Region', count(\*) as `Number of Patients` from `patients` join `pmh` on `patients`.id = `pmh`.id where `pmh`.hyperlipid = 1 group by `patients`.region;

Result:

|  |  |
| --- | --- |
| **Region** | **Number of Patients** |
| Midwest | 880 |
| Northeast | 935 |
| South | 1311 |
| West | 849 |

select `patients`.age, count(\*) as `Number of Patients` from `patients` join `pmh` on `patients`.id = `pmh`.id where `pmh`.hyperlipid = 1 and `patients`.region = 'South' group by age order by `Number of Patients` desc

Result: Most of these patients are from late 50s to early 70s.