

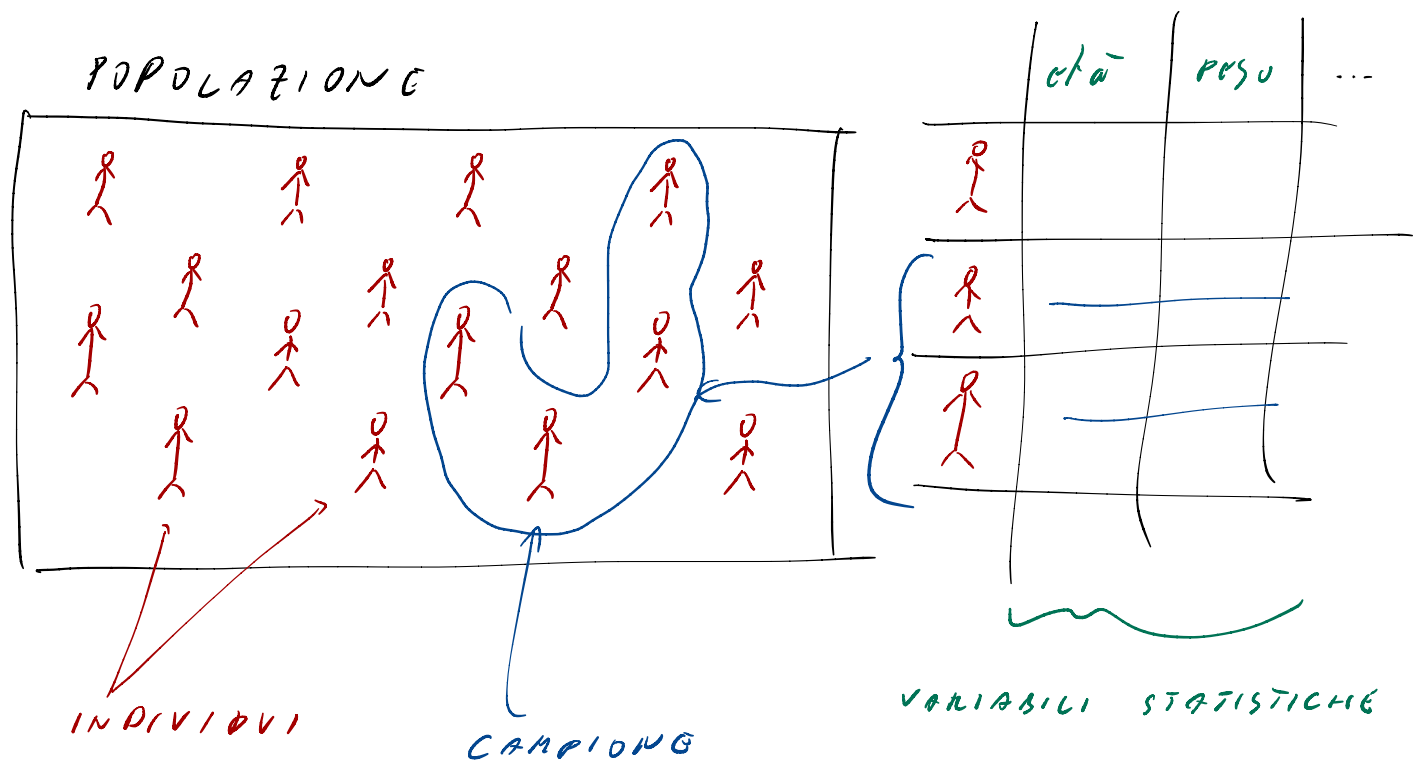
# Elementi di statistica

Basato su:

D. Freedman R. Pisani R. Purves — Statistics

M. Bland — An introduction to Medical Statistics

B. Kirkwood J. Sterne — Essential Medical Statistics



# VARIABILI STATISTICHE

## CATEGORICHE

NOMINALI es. città di nascita

ORDINALI es. titolo di studio

BINARIE due valori

## NUMERICHE

DISCRETE numeri interi

CONTINUE valori in  $\mathbb{R}$

## Piano del corso

- STATISTICA DESCRITTIVA
- STATISTICA INFERENZIALE

$$\text{indice di massa corporea} = \frac{\text{peso}}{\text{statura}^2}$$

↓

| MI                       |       |         |
|--------------------------|-------|---------|
| <20 kg/m <sup>2</sup>    | 244   | 1.5 %   |
| 20-<25 kg/m <sup>2</sup> | 3058  | 19.4 %  |
| 25-<30 kg/m <sup>2</sup> | 6750  | 42.8 %  |
| 30-<35 kg/m <sup>2</sup> | 3960  | 25.1 %  |
| ≥35 kg/m <sup>2</sup>    | 1768  | 11.2 %  |
|                          | 15780 | 100.0 % |

← FREQ. RELATIVE

← NUMEROSITA' DEL CAMPIONE

← FREQUENZE (ASSOLUTE)

↑  
POSSIBILI

VALORI DELLA

VARIABILE

DISTR. CONGIUNTA

| MI                       | OUTCOME |             |
|--------------------------|---------|-------------|
|                          | INFARTO | NON INFARTO |
| <20 kg/m <sup>2</sup>    | 11      | 233         |
| 20-<25 kg/m <sup>2</sup> | 126     | 2932        |
| 25-<30 kg/m <sup>2</sup> | 310     | 6440        |
| 30-<35 kg/m <sup>2</sup> | 210     | 3250        |
| ≥35 kg/m <sup>2</sup>    | 105     | 1663        |
|                          | 762     | 15018       |

DISTRIBUZIONI MARGINALI

# BRITISH MEDICAL JOURNAL

LONDON SATURDAY OCTOBER 30 1948

## STREPTOMYCIN TREATMENT OF PULMONARY TUBERCULOSIS A MEDICAL RESEARCH COUNCIL INVESTIGATION

TABLE II.—*Assessment of Radiological Appearance at Six Months as Compared with Appearance on Admission*

| Radiological Assessment          | Streptomycin Group |      | Control Group |      |
|----------------------------------|--------------------|------|---------------|------|
| Considerable improvement ..      | 28                 | 51%  | 4             | 8%   |
| Moderate or slight improvement   | 10                 | 18%  | 13            | 25%  |
| No material change .. ..         | 2                  | 4%   | 3             | 6%   |
| Moderate or slight deterioration | 5                  | 9%   | 12            | 23%  |
| Considerable deterioration ..    | 6                  | 11%  | 6             | 11%  |
| Deaths .. .. .                   | 4                  | 7%   | 14            | 27%  |
| Total .. ..                      | 55                 | 100% | 52            | 100% |

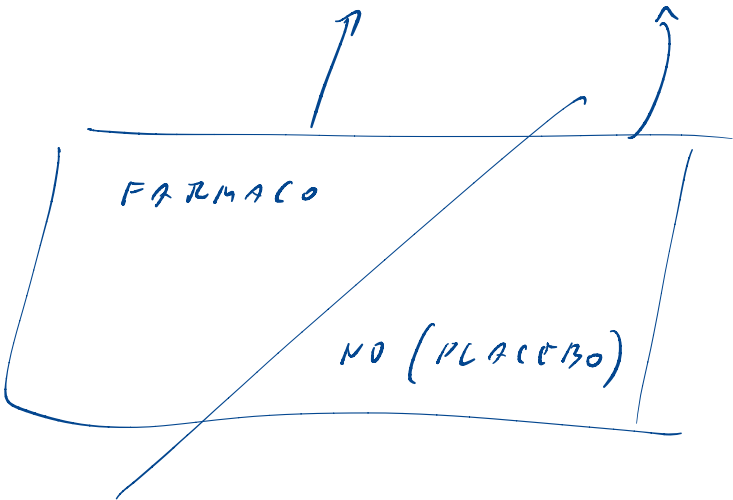


Table 1. The results of the Salk vaccine trial of 1954. Size of groups and rate of polio cases per 100,000 in each group. The numbers are rounded.

| <i>The randomized controlled double-blind experiment</i> |             |             | <i>The NFIP study</i>    |             |             |
|----------------------------------------------------------|-------------|-------------|--------------------------|-------------|-------------|
|                                                          | <i>Size</i> | <i>Rate</i> |                          | <i>Size</i> | <i>Rate</i> |
| Treatment                                                | 200,000     | 28          | Grade 2 (vaccine)        | 225,000     | 25          |
| Control                                                  | 200,000     | 71          | Grades 1 and 3 (control) | 725,000     | 54          |
| No consent                                               | 350,000     | 46          | Grade 2 (no consent)     | 125,000     | 44          |

Source: Thomas Francis, Jr., "An evaluation of the 1954 poliomyelitis vaccine trials—summary report," *American Journal of Public Health* vol. 45 (1955) pp. 1–63. ✓

## VARIABILI CONFORENTI

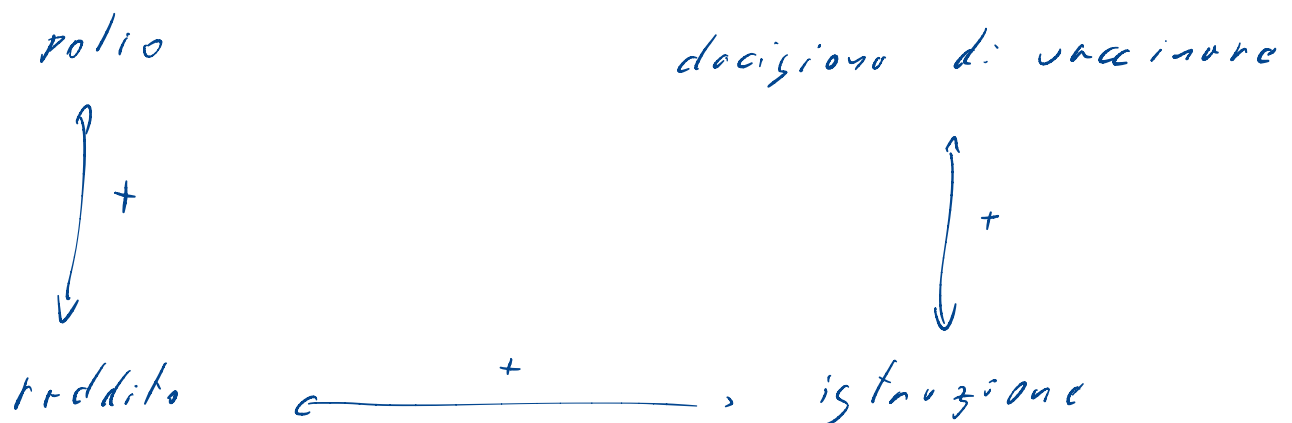


Table 2. Systolic blood pressure by age and pill use, for women in the Contraceptive Drug Study, excluding those who were pregnant or taking hormonal medication other than the pill. Class intervals include the left endpoint, but not the right. – means negligible. Table entries are in percent; columns may not add to 100 due to rounding.

| <i>Blood<br/>pressure<br/>(millimeters)</i> | <i>Age 17–24</i>      |              | <i>Age 25–34</i>      |              | <i>Age 35–44</i>      |              | <i>Age 45–58</i>      |              |
|---------------------------------------------|-----------------------|--------------|-----------------------|--------------|-----------------------|--------------|-----------------------|--------------|
|                                             | <i>Non-<br/>users</i> | <i>Users</i> | <i>Non-<br/>users</i> | <i>Users</i> | <i>Non-<br/>users</i> | <i>Users</i> | <i>Non-<br/>users</i> | <i>Users</i> |
| <i>d. H<sub>g</sub></i>                     | (%)                   | (%)          | (%)                   | (%)          | (%)                   | (%)          | (%)                   | (%)          |
| under 90                                    | –                     | 1            | 1                     | –            | 1                     | 1            | 1                     | –            |
| 90–95                                       | 1                     | –            | 1                     | –            | 2                     | 1            | 1                     | 1            |
| 95–100                                      | 3                     | 1            | 5                     | 4            | 5                     | 4            | 4                     | 2            |
| 100–105                                     | 10                    | 6            | 11                    | 5            | 9                     | 5            | 6                     | 4            |
| 105–110                                     | 11                    | 9            | 11                    | 10           | 11                    | 7            | 7                     | 7            |
| 110–115                                     | 15                    | 12           | 17                    | 15           | 15                    | 12           | 11                    | 10           |
| 115–120                                     | 20                    | 16           | 18                    | 17           | 16                    | 14           | 12                    | 9            |
| 120–125                                     | 13                    | 14           | 11                    | 13           | 9                     | 11           | 9                     | 8            |
| 125–130                                     | 10                    | 14           | 9                     | 12           | 10                    | 11           | 11                    | 11           |
| 130–135                                     | 8                     | 12           | 7                     | 10           | 8                     | 10           | 10                    | 9            |
| 135–140                                     | 4                     | 6            | 4                     | 5            | 5                     | 7            | 8                     | 8            |
| 140–145                                     | 3                     | 4            | 2                     | 4            | 4                     | 6            | 7                     | 9            |
| 145–150                                     | 2                     | 2            | 2                     | 2            | 2                     | 5            | 7                     | 9            |
| 150–155                                     | –                     | 1            | 1                     | 1            | 1                     | 3            | 2                     | 4            |
| 155–160                                     | –                     | –            | –                     | 1            | 1                     | 1            | 1                     | 3            |
| 160 and over                                | –                     | –            | –                     | –            | 1                     | 2            | 2                     | 5            |
| Total percent                               | 100                   | 98           | 100                   | 99           | 100                   | 100          | 99                    | 99           |
| Total number                                | 1,206                 | 1,024        | 3,040                 | 1,747        | 3,494                 | 1,028        | 2,172                 | 437          |

Conteggio: test di ingresso di una università

$$\text{TASSO DI SUCCESSO} = \frac{\text{NUMERO AMMESSI}}{\text{NUMERO ISCRITTI}}$$

Bunocrate A: "Il tasso di successo delle donne  
è **MINORE** di quello degli uomini!"

Bunocrate B: "In tutti i corsi, il tasso di successo  
delle donne è **MAGGIORE**!"

|   |  |      |     |  |      |     |                                                                                       |
|---|-------------------------------------------------------------------------------------|------|-----|--------------------------------------------------------------------------------------|------|-----|---------------------------------------------------------------------------------------|
|   | iscr.                                                                               | amm. |     | iscr.                                                                                | amm. |     |                                                                                       |
| A | 100                                                                                 | 80   | 80% | 800                                                                                  | 600  | 75% |  |
| B | 200                                                                                 | 150  | 75% | 500                                                                                  | 250  | 50% |                                                                                       |
| C | 400                                                                                 | 80   | 20% | 400                                                                                  | 60   | 15% |                                                                                       |
| D | 500                                                                                 | 50   | 10% | 200                                                                                  | 10   | 5%  |                                                                                       |
|   | 1200                                                                                | 360  | 30% | 1900                                                                                 | 920  | 48% |  |