SPECIFICATION

Measuring device

The present invention relates to a device for measuring the degree of a subjective opinion, preference or response e.g. the degree of a subjective physiological symptom, for example pain, insomnia or nausea, in humans.

Rating scales for subjective clinical tests of drugs were first developed to evaluate the degree of success of the drugs in the treatment of various disorders of the human body. With the rapid development of drugs these rating scales (typically a simple series of numbers: 0 for no symptom; 1 for slight symptom; up to 3 for intense symptom), did not provide sufficient information and analog scales were developed. These scales had a range from zero, corresponding to no symptom, to infinity corresponding to maximum symptom possible. A ten centimeter line has typically been used for such an analog scale with markings on the line at, for example, 1 centimeter intervals for guidance of the doctor.

This latter technique has disadvantages as the patients can be influenced by the markings on the scale, in so much as they can remember their previous symptom rating and adjust the current rating under estimation accordingly.

We have devised an improved device for such subjective ratings which is not subject to such disadvantages.

The device according to the invention is also applicable to other fields and may be adapted to measure the degree of a subjective opinion preference or response. For instance the invention may be used in market research to enable information gained to be put in a quantifiable form.

According to the invention there is provided a device for measuring the degree of a subjective opinion, preference or response comprising a bar on one side of which is an unmarked line having at or near one end thereof an indication that this respective end of the line represents one extreme viewpoint and at or near the other end thereof an indication that this respective end of the line represents an opposite extreme viewpoint, the side of the bar opposing the unmarked line being provided with an identical line but which is marked with a scale to enable a range of viewpoints between the extremes to be rated, and a marker movable along the bar to enable a person to provide an estimate of his opinion, preference or response along the unmarked line and to enable an observer to read the corresponding rating from the opposed marked line.

Preferably the device is adapted to measure a subjective physiological symptom. A preferred device for the application comprises a device for measuring the degree of a subjective physiological symptom, comprising a bar on one side of which is an unmarked line having at one end thereof an indication that this respective end of the line represents no symptom present and at the other end thereof an indication that this respective end of the scale line represents maximum symptom present, the side of the bar opposing the unmarked line being provided with an identical line but which is marked with a scale to enable the symptom intensity to be rated, and a marker movable along the bar to enable a patient to provide an estimate of the symptom intensity along the unmarked line and to enable a doctor to read the corresponding rating from the opposed marked line.

The device may have tags positioned at either end to indicate the parameter which is being measured by the scale line. Alternatively the bar may be provided with roller or wheel-like members on which a number of parameters are marked, whereby the device can be used to measure a number of different subjective opinions, preferences or responses between two extremes by lining up the appropriate markings at opposite ends of the bar. Thus each parameter to be measured may be allotted a particular colour on the roller or wheel-like members to facilitate lining up the opposite extremes of the same parameter. In medical applications the parameter to be measured may be a variety of physiological symptoms. e.g. 1. pain - the symptom at one end being "no pain" and at the other end "intense pain"; 2. Insomnia - "no sleep" and at the other end "instant sleep"; 3. nausea - "no nausea" and at the other end "constant nausea"; 4. sedation; 5. breathlessness; 6. lethargy; 7. anxiety; 8. depression; 9; hallucinations; 10. stiffness and so on. By colour coding the parameter being measured e.g. red for pain blue for insomnia, yellow for nausea etc. lining up of the rollers or wheel-like members is facilitated.

In a preferred embodiment the device is used to measure the degree of pain suffered by humans.

The invention will now be described, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is a front view of a preferred embodiment of the invention employed to estimate and rate the degree of pain suffered by humans, and

Figure 2 is a rear view of the device shown in Figure 1.

Figure 3 is a front view of a modified device and *Figure 4* a rear view.

Referring to Figure 1, the device comprises a bar 1 having tags 2 positioned at opposite ends. A transparent cursor 3 with a datum line 4 marked thereon is free to slide along the bar and across an unmarked scale line 5 typically 10 centimeters long printed on the bar. The tags 2 carrying the markings "NO PAIN" and "INTENSE PAIN" respectively.

The reverse of the device as shown in Figure 2 is identical to the front view except that the unmarked scale line 5 is replaced by a linear scale line 6.

To employ the device, it is presented to the patient so that he or she sees only the front with the unmarked scale line 5. It is explained that one end (the left end) of the scale line represents no pain whereas the other end (the right end) represents the most intense pain the patient could imagine. The patient is then asked to move the cursor 3 to the position along the line to where he or she judges the current pain to lie. The doctor then reads the rating of the pain from the reverse of the device and the patient is unaware of the figures selected. He or she

is thus less likely to be influenced by such a marked scale in making the subjective determination of the pain intensity.

If desired the tags may be made detachable so that different subjective symptoms (e.g. nausea, insomnia) can also be rated with appropriate tags attached. The bar may be provided with slots, at or near each end, into which different tags may be inserted.

The linear scale line 6 may also be marked with information relating to drugs suitable for treatment of that particular degree of sympton. For example, with the device as illustrated, a rating of 2 - 5 might be marked as indicating administration of mild analgesic A, 5 - 8 for a strong analgesic B, and over 8 for a very powerful analgesic C. The scale may be colour-coded to match the colour-codings of the analgesic tablets concerned.

The cursor could be made in such a way as to magnify the marked scale.

The device of the invention is simple and cheap and would be suitable as a promotional device to be used by pharmaceutical companies for advertising purposes. Advertising material could, for example, be printed on the device (preferably the reverse side).

Referring to Figures 3 and 4 a modified device according to the invention comprises a bar 10, having roller or wheel-like members 11 and 12 mounted thereon. A transparent cursor 13 having a datum line 14 is free to slide along the bar across an unmarked scale line 15. On the opposite side of the bar an identical scale line has markings from 0 to 10. The roller or wheel-like members have markings corresponding to the symptom being evaluated as shown in Figures 3 and 4.

In use the device is presented to the patient with the appropriate symptoms lined up opposite the scale line e.g. no sleep....instant sleep. The rollers or wheel-like members are so devised that corresponding symptoms appear on the opposite side of the bar with the marked line so that the doctor sees the same symptoms against his scale line. However this is not essential. Then the device is used as described above for the device of Figures 1 and 2.

The bar can be cylindrical or of any other convenient shape. The rollers or wheel-like members are arranged to turn on the bar and may be detachable.

The device of the invention can be used for market research applications e.g. to assess consumer preferences such as for consumer goods, television programmes and other market research surveys. For example in assessing consumer opinion about a new washing powder the tags at the end of the device shown in Figures 1 and 2 could be "disliked" and "liked very much". The consumer could then be asked by the observer to indicate on the unmarked scale his or hers preference for the washing powder between the two extremes. The observer could then record a specific rating for the consumers degree of approval of the product by noting the rating on the opposite side of the bar. Such applications would enable market research information to be put in a quantifiable form. It would then be more suitable for recording and analysis by computer.

The device of the invention could also be adapted for use by creative or design consultants in assessing public reaction to new designs or plans.

CLAIMS

1. A device for measuring the degree of a subjective opinion, preference or response, comprising a bar on one side of which is an unmarked line having at or near one end thereof an indication that this respective end of the line represents one extreme viewpoint and at or near the other end thereof an indication that this respective end of the line represents an opposite extreme viewpoint, the side of the bar opposing the unmarked line being provided with an identical line but which is marked with a scale to enable a range of viewpoints between the extremes to be rated, and a marker movable along the bar to enable a person to provide an estimate of his opinion, preference or response along the unmarked line and to enable an observer to read the corresponding rating from the opposed marked line.

2. A device as claimed in claim 1, wherein the subjective opinion to be measured is a subjective physiological symptom.

3. A device for measuring the degree of a subjective physiological symptom, comprising a bar on one side of which is an unmarked line having at one end thereof an indication that this respective end of the line represents no symptom present and at the other end thereof an indication that this respective end of the scale line represents maximum symptom present, the side of the bar opposing the unmarked line being provided with an identical line but which is marked with a scale to enable the symptom intensity to be rated, and a marker movable along the bar to enable a patient to provide an estimate of the symptom intensity along the unmarked line and to enable a doctor to read the corresponding rating from the opposed marked line.

4. A device as claimed in any one of claims 1 to 3, wherein the bar has tags positioned at either end to indicate the parameter which is being measured by the scale line.

5. A device as claimed in any one of claims 1 to 3, wherein the bar is provided, at either end, with roller or wheel-like members on which a number of parameters are marked, whereby the device can be used to measure a number of different subjective opinions, preferences or responses between two extremes by lining up the appropriate markings at opposite ends of the bar.

6. A device as claimed in claim 5, wherein each parameter is allotted a particular colour on the roller or wheel-like members to facilitate lining up the opposite extremes of the same parameter.

7. A device as claimed in claim 2 or claim 3, wherein the subjective symptom to be evaluated is pain, nausea, insomnia, sedation, breathlessness, lethargy, anxiety, depression, hallucinations or stiffness.

8. A device as claimed in claim 1, substantially as hereinbefore described.

9. A device as claimed in claim 1 substantially as hereinbefore described with reference to Figures 1

is thus less likely to be influenced by such a marked scale in making the subjective determination of the pain intensity.

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6. A device as claimed in claim 5, wherein each parameter is allotted a particular colour on the roller or wheel-like members to facilitate lining up the opposite extremes of the same parameter.

7. A device as claimed in claim 2 or claim 3, wherein the subjective symptom to be evaluated is pain, nausea, insomnia, sedation, breathlessness, lethargy, anxiety, depression, hallucinations or stiffness.

8. A device as claimed in claim 1, substantially as hereinbefore described.

9. A device as claimed in claim 1 substantially as hereinbefore described with reference to Figures 1

and 2 of the accompanying drawings.

10. A device as claimed in claim 1, substantially as hereinbefore described with reference to Figures 3 and 4 of the accompanying drawings.

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