CHAPTER 9: PSYCHOLOGY AND HEALTH

9.3 PAIN

TYPES AND THEORIES OF PAIN

People can experience a variety of types of pain and there are theories as to why we experience pain outside of a physiological cause. All of these are covered in the next section.

ASK YOURSELF
Why do we feel pain? List as many possible reasons as you can.

Definitions of pain

According to Sarafino (2006), pain can be a sensory and/or emotional discomfort which tends to be associated with actual tissue damage or threatened tissue damage including irritation. People's experiences of pain differ markedly but virtually every human being does experience pain in some form.

Acute and chronic organic pain

Acute pain refers to times when people experience temporary pain for about six months or less. They experience anxiety while the pain is there but this dissipates quickly once the pain begins to disappear. When pain lasts continually for more than a few months, it is referred to as chronic pain. People experiencing this will have high levels of anxiety and may well develop a sense of helplessness and depression. This is especially true if treatment is not helping. The pain interferes with daily life, thoughts and sleep patterns. For both of these types, the cause of the pain is physiological.

Psychogenic pain

Not all pain stems from physiological mechanisms. Psychogenic pain refers to episodes where there is no organic (physiological) cause of pain but the person is experiencing pain.

One controversial element of pain perception has been phantom limb pain. This is a condition whereby a patient who is an amputee still experiences pain in a limb that is not longer physically there or in a limb that has no functioning nerves in it. Yet, the pain is described in the same way as any other ache or pain that people experience daily. It does not always centre around the pain element as some amputees still feel as if they can move their phantom limb as they please. The pain symptoms can last for several months or even years and can be quite severe in nature. It is often described as shooting or burning pain or like cramp.

TEST YOURSELF
What is pain? Outline one type of pain.

Specificity theory of pain

This was an early model of pain. It was predicted that we have a sensory system that is dedicated to pain. A series of neurons form a pathway to a dedicated pain centre in the brain. The more this pathway is used, the more intense is the pain experienced by the person. Therefore, according to this theory, pain is purely physiological and there are nerve centres in the brain that exclusively process this information. Some psychologists believe that they have evidence for certain fibres being exclusive to pain but others state that they cannot find them. There are sensory fibres in our skin that can detect heat, cold and certain pressures but these can also detect pain so the exclusivity argument is now a weak one. A more comprehensive theory is gate control.

Gate control theory of pain

Melzack & Wall (1965) proposed the idea of a gate control theory of pain. Pain is detected and still picked up by sensory signals but the spinal cord plays a key role in the experience of the actual pain. The spinal cord has a mechanism in it that acts just like a gate: it is either open or closed. If it is open the pain is experienced but the spinal cord can modulate the pain level by having the gate slightly open rather than being fully open. There are three main factors involved in the gate-opening process:

One factor is the amount of activity in pain fibres. The more “noxious” the pain stimulus is, the more
likely the gate will be opened (e.g. in someone with a severe cut).

- Another factor is the amount of activity in other peripheral fibres. These are called A-beta fibres. They carry information about “low-level pain” (e.g. a scratch or a touch). When there is activity in these fibres the gate tends to close as the pain is low level and not dangerous.

- Messages from the brain are also a factor. Information such as excitement and anxiety can affect how much the gate is opened or closed.

Sarafino (2006) noted conditions that can open or close the gate in the spinal cord. The gate can be opened by:
- severe injury
- anxiety, worry, depression, etc.
- focusing too much on the pain plus boredom.

The gate can be closed by:
- medication
- positive emotions (e.g. laughing through happiness)

<table>
<thead>
<tr>
<th>EVALUATION</th>
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<th>valid</th>
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</tr>
</thead>
</table>

> rest and relaxation
> distraction from the pain.

**Self-report measures**

These are usually questionnaire-based methods that allow the person experiencing the pain to rate how severe it is. Common examples are the use of a box scale, a verbal rating scale or a Likert-type scale. Examples of these are given below.

**Box scale:**

| No pain | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Worst pain possible |

**Verbal rating scale:**

| No pain | Some pain | Considerable pain | Worst pain possible |

**Likert-type scale:**

The example questions below would be answered using the options of:

- Strongly agree, Agree, Don’t know, Disagree, Strongly disagree.

1. The pain usually gets worse at night.
2. Pain relief helps me control my pain.

▲ Figure 9.3.1 Scales for recording pain – box rating, verbal rating and Likert-type scales

Patients may also be asked to keep a pain diary so the practitioner can monitor when the pain is happening and how the patient feels.

**MEASURING PAIN**

This next section will examine the different ways in which pain can be measured by a practitioner or psychologist.

**ASK YOURSELF**

What do you think is the best way to measure pain?
CHAPTER 9: PSYCHOLOGY AND HEALTH

PAIN DIARY FOR:

DATE: Did you change your medication today? If yes, describe:

Pain rating scale:

| No pain | 0 | 1 | 2 | 3 | 4 | 5 | Unbearable pain |

<table>
<thead>
<tr>
<th>Time</th>
<th>Pain rating and body position</th>
<th>Activity at start of pain</th>
<th>What medication did you take and how much?</th>
<th>Pain rating after 1 or 2 hours</th>
<th>Comments/other problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.30 p.m.</td>
<td>5/ lower back pain</td>
<td>Leaned over and dragged dining chair away from table</td>
<td>Aspirin (2)</td>
<td>4 - helped a little</td>
<td>Could stand up better</td>
</tr>
<tr>
<td>11.00 p.m.</td>
<td>2/ lower back dull ache</td>
<td>Lying flat on back in the bed</td>
<td>Ibuprofen (2)</td>
<td>1 - helped</td>
<td>Trouble getting to sleep: got to sleep at around 2.00 a.m.</td>
</tr>
</tbody>
</table>

**Figure 9.3.2 Example of a pain diary**

**Psychometric measures and visual rating scales**

One standardised psychometric measure of pain is the McGill Pain Questionnaire (MPQ). This questionnaire comes in four parts:

1. A diagram of a body is presented to the patient, who simply has to mark where the pain is located around the body.

2. There are 20 sub-classes of descriptive words from which the patient has to choose a maximum of one per class. The further down the list in each sub-class the word is, the more points it scores so that an overall pain rating index can be calculated.

3. The patient has to describe the pattern of pain from three sub-classes of words and then produce some qualitative data about what things relieve but also increase the pain.

4. The final part asks the patient to rate the strength of the pain via six questions. The scores for the questions are added up to create a present pain intensity score.
Part I. Where Is Your Pain?
Please mark on the drawing below the areas where you feel pain. Put E if external, or I if internal, near the areas which you mark. Put EI if both external and internal.

Part 2. What Does Your Pain Feel Like?
Some of the words below describe your present pain. Circle ONLY those words that best describe it. Leave out any category that is not suitable. Use only a single word in each appropriate category – the one that applies best.

6. Pounding

8. Drilling

Part 3. How Does Your Pain Change With Time?
1. Which word or words would you use to describe the pattern of your pain?
   3. Constant 3. Intermittent 3. Transient

2. What kind of things relieve your pain?
3. What kind of things increase your pain?

Part 4. How Strong Is Your Pain?
People agree that the following 5 words represent pain of increasing intensity. They are:


To answer each question below, write the number of the most appropriate word in the space beside the question.

1. Which word describes your pain right now?
2. Which word describes it at its worst?
3. Which word describes it when it is least?
4. Which word describes the worst toothache you ever had?
5. Which word describes the worst headache you ever had?
6. Which word describes the worst stomach-ache you ever had?

Source: Melzack, 1975

▲ Figure 9.3.3 The MPQ

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Visual rating scales can come in the form of visual analogue scales as shown in Figure 9.3.4.

\[ \text{No pain} \rightarrow \text{Worst pain possible} \]

\[ \text{Figure 9.3.4} \text{ Visual analogue scale for recording pain} \]

The physician can measure (with a ruler) the distance along the scale to get a numeric measure of how intense the pain is – other questions and bi-polar adjectives can be used on these scales too.

**Behavioural or observational scale**

The University of Alabama at Birmingham (UAB) Pain Behavior Scale can be used by nurses to assess the degree of pain patients are in through observing their behaviour. The patient will be asked to perform several activities such as walking around, sitting down then standing up and the nurse rates each of these to give a total score of how much the pain is affecting the patient’s behaviour. Figure 9.3.5 (opposite) lists the parameters and shows the method of scoring some of them.

In addition, structured clinical sessions can also be used and these can be tailored to the pain condition a patient has. The patient can be asked to perform a series of tasks linked to their pain (e.g. if it is lower back one of the tasks maybe to tie their shoe laces). All of the tasks are recorded for observation. A trained observer then watches the recording and scores the patient so an overall pain score can be calculated.

**Pain measures in children**

Some of the self-report scales mentioned earlier can be used with children. The visual analogue scale has been particularly successful. The box scales and verbal rating scales can also be used as long as they are written in children’s language so they can easily understand them. However, one questionnaire has been developed that can be used just with children – the Pediatric Pain Questionnaire. Children have to describe their pain *in their own words* then, to help describe their pain some more, they choose as many adjectives as they want to. There is a visual analogue scale used with faces as the bi-polar ends and then, similar to the MPQ, a picture of a person so they can indicate where the pain is (see Figure 9.3.6).

**The UAB Pain Behavior Scale**

**Parameters**

1. vocal complaints verbal
2. verbal complaints non-verbal (groans, moans, gasps, etc.)
3. downtime (time spend lying down because of pain per day from 8.00 a.m. to 8.00 p.m.)
4. facial grimaces
5. standing posture
6. mobility
7. body language (clutching or rubbing site)
8. use of visible support equipment (brace, crutches, can, leaning on furniture, etc.)
9. stationary movement (ability to stay still)
10. medication use.

**Total score = SUM for all 10 items**

**Interpretation:** minimum score = 0; maximum score = 10

The higher the score the more marked the pain-associated behaviour and the greater the level of impairment.

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<thead>
<tr>
<th>Parameter</th>
<th>Points</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
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<td>verbal complaints</td>
<td>none</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>occasional</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>frequent</td>
<td>1</td>
</tr>
<tr>
<td>non-verbal complaints</td>
<td>none</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>occasional</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>frequent</td>
<td>1</td>
</tr>
<tr>
<td>downtime</td>
<td>none</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0 to 60 minutes</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>&gt; 60 minutes</td>
<td>1</td>
</tr>
<tr>
<td>facial grimaces</td>
<td>none</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>mild and/or infrequent</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>severe and/or frequent</td>
<td>1</td>
</tr>
<tr>
<td>standing posture</td>
<td>normal</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>mildly impaired</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>distorted</td>
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</tbody>
</table>

\[ \text{Figure 9.3.5} \text{ The UAB Pain Behavior Scale} \]
MANAGING AND CONTROLLING PAIN

Patients can manage and control their pain levels in a variety of ways. These range from biological to cognitive and alternative techniques.

Medical techniques

One of the main medical techniques used to control pain is the use of chemicals. Sarafino (2006) highlighted four main types available to patients:

- Peripherally active analgesics – these inhibit the production of certain neurochemicals that are produced as a result, for example, of tissue damage. Common examples of these drugs are aspirin and ibuprofen. Aspirin, for instance, reduces the experience of pain but also reduces inflammation that could be causing the pain.
- Centrally acting analgesics – these are good at reducing acute pain in the short term as they act directly on the central nervous system. Examples of these drugs are codeine and morphine.
- Local anaesthetics – these can be applied locally to the site of pain (or be injected) to give almost
immediate relief. They block the nerve cells at the site of damage. An example of this type of drug is novocaine.

- Indirectly acting drugs – these are used for other conditions but can also help in pain management. For example, antidepressants can help reduce psychological aspects of depression but they can also help relieve pain.

**Psychological techniques: cognitive strategies**

A variety of cognitive strategies can be used to help alleviate and manage pain in patients. Cognitive behavioural therapy (CBT) can be used. The therapist needs to tackle the thinking behind the pain, the emotions involved with the pain and the behaviour seen as a result of it. The therapist can use a variety of techniques for this. These include helping patients to reduce counterproductive strategies (e.g. changing strategies that are actually making the pain worse rather than better), giving them some skills training on how to cope and training them to change their cognitions from negative to positive in terms of successful pain management.

Sarafino (2006) noted a range of other cognitive strategies that can be used with patients. These include the following:

- Distraction – this technique gets the patient to focus on something that is not linked to the pain in any way. This can include looking at a picture, singing a song, playing on a video console or having to focus on someone’s voice. Distractors have to be relevant to the patient and be engrossing enough for that person. Hence, they have to be individually tailored.

- Imagery – this can be called guided imagery and involves patients creating a mental scene “far removed” from the current state of pain. This could be a place that is pleasant (e.g. a beach) and the therapist has to guide patients through the scene to distract them from the pain. The therapist may ask about sights and sounds, for instance. The aim is to create a “place” that cannot be linked to the pain being experienced.

**Alternative techniques**

A variety of alternative techniques can be used with a patient experiencing any degree of pain, including the following:

1. Hypnosis – patients who are good hypnotic subjects could benefit from using hypnosis as part of their pain management. The hypnotist can use suggestions and imagery to help the patient cope with pain. It is common for the suggestion of analgesia (pain relief) to work on hypnotic patients as a result of their high levels of suggestibility. The hypnotist could also teach patients self-hypnosis skills so they can use hypnosis to reduce their pain when at home.

2. Transcutaneous electrical nerve stimulation (TENS) machines – these machines have electrodes which are placed either side of the source of pain. The TENS machine then sends a mild electrical current between the electrodes which, in theory, reduces the sensation of pain.

3. Acupuncture – this is an ancient Chinese practice of inserting special fine metal needles under the skin of the patient in areas chosen depending on the source of the pain. Once inserted, the needles are “twirled” or stimulated electrically. There are reportedly hundreds of insertion points for the needles depending on what could be causing the pain or which area of the body is experiencing it.