# The shannon and weaver mathematical model of communication nursing essay

Health & Medicine, Nursing

The Shannon and Weaver mathematical model of communication (1949) consisted of five key stages; an information source produces a message, this is then encoded into signals by a transmitter, which also sends the message through a channel, the medium through which the message is sent to the receiver, which then decodes the signal and reconstructs the message to be repeated to the destination. An important factor included in this model is the concept of noise, which is regarded as anything that adds to the message being sent distorting clear transmission. Shannon and Weaver's model provided a one way, linear representation of transmitting information, the source determines the meaning of the message and the receiver passively accepts it. The simple linear structure attracted many critiques, influencing the development of many further models (FISKE 2011). Schramm (1954) criticises the mathematical model by emphasising the importance of feedback, meaning both the speaker and listener take it in turns to send and receive messages. Hartley (1999) adds to this the relevance of social context which influences the messages of sender and receiver highlighted in his Interpersonal model. This model demonstrates how Paramedics can adapt communication to communicate effectively and appropriately in any environment. Paramedics must communicate effectively and appropriately to service users, relatives and other healthcare professionals, failure to do so may result in disciplinary action (HEALTH AND CARE PROFESSIONS COUNCIL 2012). When healthcare professionals communicate ineffectively Important information can be misinterpreted, creating confusion, ambiguity and anxiety, leading to hostile situations (McCABE & TIMMINS 2006). In England between 2011 and 2012, 10, 986 complaints were made in relation to

ineffective communication, and a further 12, 571 related to the attitude of staff (NATIONAL HEALTH SERVICE 2012). This emphasises the importance of ensuring that the health care professional's verbal and non-verbal communication both convey the same positive messages to the patient. Only 7 percent of all communication is verbal, expressed through spoken or written words. Non-verbal communication comprises of; body language, proximity, facial expressions, eye contact and touch, and accounts for 55 percent of all communication. Paralanguage accounts for 38 percent of all communication (BORG 2009). According to some texts paralanguage is part of non-verbal communication (NOTH1995), however other texts disagree and class it as verbal communication (TRUSTY, LOOBY & SANDHU 2002). This is because paralanguage involves the use of many vocal features but without words. Features of paralanguage include; volume, pitch, tone of voice and speed of delivery. Research shows that people who speak rapidly are perceived to have less control over a conversation than someone who speaks more slowly (TUSING & DILLARD 2000). Speaking quietly or whispering can help maintain privacy, whereas speaking loudly or shouting can signal impatience or anger. Anger and impatience can also be interpreted from a person's tone of voice; however, a warm voice gives a friendly impression. Another vocal feature is sounds; Sighing is a useful sound used to communicate empathy and contentment but could also hint boredom (WOOD 2012). It is important for healthcare professionals to allow pauses in speech, and not interrupt silences too quickly. Silence allows others time to think and make their own decisions based on the information they have received (VIDEBECK 2011). Gestures often occur during periods of

silence and are considered a major aspect of thinking and listening (McNEILL 2005). Facial expressions display emotions such as surprise anger, disgust, sadness, fear or joy (BASAVANTHAPPA 2004). However these can sometimes be confusing and display the opposite emotion to what the person is experiencing (SHELDON 2008). Active listening involves using and interpreting verbal and non-verbal communication, to show the sender of a message that a person is listening, interpreting and clarifying the messages being sent (TREVITHICK 2010). The mnemonic SOLER is used to remind healthcare professionals that how to that Reducing proximity, maintaining eye contact and using open postures can show they are listening and concentration on what is being said, and making the speaker feel more comfortable (KRASEZWSKI & McEWEN 2010). Active listening often involves using paraphrasing, summarising verbally what a patient has said to ensure a mutual understanding of the messages send by the patient to the healthcare professional (WALKER 1990). However paraphrasing too often can suggest the healthcare professional finds the words the interviewee uses unacceptable, causing frustration (MOSS 2012). In an evaluation of my strengths, weaknesses, opportunities and threats I highlighted my understanding and use of paraphrasing and active listening as strengths and facial expressions, gestures and touch as weaknesses (Appendix 1). I created an action plan to develop my understanding and use of touch in practice (Appendix 2). Touch is a powerful form of nonverbal communication, enabling the display of a caring supportive attitude (CHANG 1996). For example gently stroking a child can be calming and soothe their pain, holding the hand of a grieving person can show support, or patting someone

on the back can show approval (TRAVIS 2012). There are three different types of touch; instrumental (DICKSON & HARGIE 1997), expressive and therapeutic, although some text may refer to these using different names. Paramedics regularly use instrumental touch in order to carry out many assessments and treatment (BLEDSOE, BORTER & CHERRY 2007). Expressive touch involves gently touching a neutral part of the body such as the hand, forearm or shoulder to provide comfort and reassurance (BLEDSOE et al 2010). Therapeutic touch is based on the Christian belief that touch is able to heal the sick by influencing the receiver's energy fields (MEEHAN 1998). However, there are multiple alternative names for these types of touch and this can make comparing evidence from different studies difficult (GLEESON & TIMMINS 2005). Whilst instrumental touch is not intended to communicate, all types of touch can trigger powerful emotions such as fear and anxiety, which can create a negative impression of the toucher. Caution should be exerted when considering touching a patient as it is not always interpreted positively (DAVIDHIZAR & GIGER 1997). Noting body language for a positive response, leaning towards the Paramedic, or a negative response, pulling away when performing touch based tasks can identify patients who are anxious when touched and being gentle can reduce this anxiety (CAROLINE 2008). Crucially, Informed consent must be obtained before touching a patient to prevent causing unnecessary distress (HEALTH AND CARE PROFESSIONS COUNCIL 2012). Consent can be gained either; directly, asking the patient if it is ok to touch them, or indirectly, usually if direct consent has been given for instrumental touch and the persons non-verbal behaviour suggest they are comfortable, it could be inferred they will embrace the use

of expressive touch (DEPARTMENT OF HEALTH 2009). Many factors influence a person's interpretation of touch such as; culture (TING-TOOMEY 1999), socio-economic status (GIGER & DAIVSHIZAR 1991), gender (CAMERON, MOSS & OWEN 1999), age (GLEESON & TIMMINS 2004), disability (SHANLEY & STARRS 1993) and religious beliefs (ARNOLD & BOGGS 2003). Communication using touch varies across different cultures. In Arabic cultures holding hands as a form of greeting is common amongst people of the same sex, however, the British use touch less frequently and prefer to shake hands instead (TING-TOOMEY 1999). Research has shown that socio-economic status can influence a person's response of touch, lower level respond better than higher levels (GIGER & DAIVSHIZAR 1991). The use of touch is more commonly associated with females; this is due to Socialisation into gender role. The traditional mother role is more associated with non-sexual intimate touch, whereas the traditional father role is not (CAMERON, MOSS & OWEN 1999). This can provide an explanation as to why when touch is used by a male healthcare professional it can easily be misinterpreted in a sexual context (EVANS 2002). A study by Harding, North and Perkins (2008) provides supporting evidence that male healthcare professional are at high risk of their touch being interpreted in a sexual manner. This creates a barrier for male healthcare professionals when using touch. Some studies suggest elderly patients are uncomfortable with the use of expressive touch, and elderly males often misinterpreted touch from male healthcare professionals as homosexual advances (McCANN & McKENNA 1993). However other studies suggest that elderly patients do not feel vulnerable or uncomfortable being touched (EDWARDS 1998), furthermore touch has been

shown to reduce anxiety and improve emotional wellbeing in elderly patients with dementia (GLEESON & TIMMINS 2004). Touch is also a useful way of overcoming communication barriers caused by aging, such as difficulty hearing and poor vision (CARIS-VERHALLEN, KERSTRA & BENSING 1999). Some people with severe learning disabilities become very distressed when touched, however observation has shown that they are more able to tolerate touch when it is gentle (SHANLEY & STARRS1993). As children they experience touch less than others due to physical barriers created by their disability which makes other people think they are too fragile to be hugged (HEWETT 2007). Jewish and Muslim men may be uncomfortable being touched by a female healthcare professional as they believe it is wrong to touch women outside of family members (ARNOLD & BOGGS 2003). Christians however, believe touch is therapeutic and has healing powers. Many studies suggest that therapeutic touch is able to reduce pain (MERRITT 2002, WARDELL 2000, WELCHER & KISH 2001). Other studies have also found therapeutic touch significantly reduces stress and agitation (WILKINSON et al 2002, WANG & HERMANN 1999). However these changes could be caused by a placebo effect, patients feel better because they believe that therapeutic touch has healing properties (MEEHAN 1998). In conclusion, this essay has analysed communication models and related these to paramedic practice. It has demonstrated the purpose of communicating effectively reinforced by the consequences of ineffective communication. It has briefly outlined a range of verbal and non-verbal communication skills, most have been related to their role in active listening. These skills have been explicitly linked to my SWOT (Appendix 1) and action

plan (Appendix 2). The second half of the essay has defined the three main types of touch demonstrating how touch could be used beneficially within healthcare. A holistic approach to the use of touch has been used, taking into account different cultures, socio-economic groups, genders, ages and disability and religious beliefs. Barriers associated with the use of touch have been identified and suggestions based on evidence have been identified to overcome these barriers.