

# **A Conceptual Model of Service Quality and Adherence in a Health Setting**

## **Literature Review**

### **Health Service Quality**

The health literature, like the services marketing literature, offers numerous quality models (e.g. Choi *et al.*, 2004; Donabedian, 1966; Zineldin, 2006), many of which contain overlapping and or similar dimensions (Bandura, 1998). Our study adopts Dagger, Sweeney and Johnson's (2007) hierarchical scale for measuring health service quality given the similar context. Although their scale identifies four primary dimensions (interpersonal, technical, environment and administrative), environment quality was eliminated from our study since all HMR's were conducted in the home environment and therefore the associated environmental features that could influence perceptions such as atmosphere and tangibles, do not apply in this situation. Hence, our study proposes service quality as consisting of three primary dimensions: interpersonal (functional) quality, technical quality and administrative quality.

### **Adherence**

Adherence refers to the degree to which a patient's behaviour coincides with medical or health advice (Haynes, Taylor and Sackett, 1976). Adherence research is plagued with debate, much of which relates to the complex nature of non-adherence (Stephenson *et al.*, 1993) and issues surrounding its measurement (Roth, 1987). In response, some researchers have narrowed adherence down to the patient's behaviour in taking their prescribed medication. The term pharmacoadherence refers to "the extent to which a patient follows a given therapeutic medication regime as agreed on in partnership with a health care professional" (Chisholm-Burns and Spivey, 2008, p.661). Given the HMR context, pharmacoadherence was used as the unit of analysis.

### **Perceived Health Competence (PHC)**

Based on Rotter's (1966) social learning theory, health locus of control (HLOC) refers to a person's beliefs regarding where control over their health lies. People with an internal locus of control believe that their own behaviour influences their health status. In contrast, those with an external locus of control believe that their health status is influenced by the actions of other people or because of fate, luck or chance (Wallston et al., 1976). Perceived self-efficacy in the context of our study refers to how a person can exercise control over their health habits.

Self-efficacy has been differentiated from locus of control in that the former is situation specific and the latter is a generalized concept (Speake, 1987). However, there is still some debate concerning the level of specificity at which self-efficacy should be measured (Smith, Wallston, & Smith, 1995). In response to a lack of constructs that measure competence beliefs at a more intermediate, domain-specific level such as health, Smith, Wallston and Smith (1995) developed the Perceived Health Competence Scale (PHCS) to assess efficacy/competency beliefs of one's health. The PHCS is a measure of a person's expectancy that he/she can effectively interact with his/her environment (Wallston, 1992). Wallston (1992) argues that this type of generalized expectancy combines a behavioral expectancy (e.g. "I am capable of doing the behavior") with an outcome expectancy (e.g. "The behavior will get me what I want") without the ambiguity inherent in the locus of control (p.194). On the

basis of findings from other studies that have used the PHCS and demonstrated the construct validity of the scale (for a review, see Smith et al., 1995), the PHCS was used in this study given the health domain.

### **Emotional Intelligence (EI)**

Broadly, EI refers to the interaction between emotion and cognition that leads to adaptive functioning (Salovey and Grewal, 2005). We argue that because the HMR encounter is a social interaction between the health care provider and the patient, understanding the patients' EI might help explain possible differences in interpersonal quality evaluations. For example, the extent to which the patient adopts certain perspectives of other people might help account for variances in service quality perceptions which might influence the patients' adherence behaviour.

### **Sample**

Qualitative data were obtained from in-depth interviews with 20 HMR patients who were purposely recruited from urban and rural areas in Australia. Respondents ranged from 44 to 90 years of age. The criteria for patient participation included English speaking participants who previously had had a HMR (within three months of the interview date). The majority (19) of the interviews were conducted within the patient's home. The average interview time was 50 minutes.

### **Methodology**

For overall service quality perceptions, respondents were asked to describe the factors they believed were necessary for a quality HMR. Items relevant to the study were selected from the Health Service Quality Scale (Dagger *et al.*, 2007) to facilitate the discussion. Patient adherence was discussed using adapted items from the General Adherence Scale (Sherbourne *et al.*, 1992). Items from the Perceived Health Competence Scale (PHCS; Smith *et al.*, 1995) were used to frame PHC discussions. The Assessing Emotions Scale (AES; Schutte *et al.*, 1998) was used to discuss EI. A hypothetical scenario was also used to gain additional information regarding patients' EI levels, with particular attention paid to EI components such as interpersonal skills, social relations and empathy.

### **Validity and Analysis**

Construct validity was increased by adhering to the "three principles of data collection" (Yin, 2003, p.97). The first principle was met by use of direct observations. The second principle was represented by the establishment of a database in the form of a protocol. In all instances, maintaining a chain of evidence, the third principle, was used as the overarching analysis guideline. This was achieved by extensive note taking, as reflected in our constant updates of the protocol. Interviews were audio recorded and transcribed verbatim. Pseudonyms have been used to mask the identity of patients (e.g. P1, P2, P3 etc) and their accredited pharmacist (pseudo names). Initially, we categorised all the data in an attempt to intuitively aggregate units (Stake, 1995) and then analysed the data by noting patterns (Miles and Huberman, 1994), searching for similarities, recurring themes and relationships in the data until a general set of themes emerged from the data.

## Findings

### Patient Characteristics

The majority of respondents (15) were elderly (65 or above) with 12 of the overall sample female. Nineteen respondents were on some kind of government welfare (e.g. aged pension, widow pension, disability pension, ex-serviceman pension, carer's pension). The medical histories of most respondents were lengthy and complex. Self-reported health conditions included cardiovascular, respiratory diseases, diabetes, cancer, gastro-intestinal, arthritis, cataracts, mental illness, neurological and osteoporosis. Half the respondents said they were taking 5-7 different types of medication, with five taking eight or more medications. Furthermore, 11 of the respondents were taking more than 10 doses of medication per day.

### Service Quality

**Functional Quality:** The data identified a number of recurring themes including: trust, communication, rapport and respect. Respondents made common references to the importance of trust or confidence in the pharmacist. For example: *"they know more than I do, so if they say something, it must be right, it's got to be right"* (P11). Communication was identified as another important aspect of functional quality. For example: *"the ability to translate [medications] to you in plain English"* (P1); and *"you've got to have someone there that can talk and that you can talk back, like conversation"* (P12). Respondents indicated that they could relate well with the pharmacist because of the pharmacists' rapport building skills which made them feel comfortable, enabling them to trust the pharmacist and communicate effectively with them. For example: *"she chatted about her kids, she just made you feel comfortable so that you felt you were just sitting down having a chat and within that chat she was giving you her knowledge so that you knew"* (P9). The following statement is an example of the importance of respect and empathy: *"they need to speak to me as not beneath them, looked down upon"* (P3).

**Technical Quality:** The data suggests that respondents evaluate competence of their pharmacist based on perceived knowledge, credentials and experience. For example: *"they've got to have knowledge too, you've got to have someone that's been in that sort of thing for a long while"* (P3). Furthermore, the data suggests that the majority of respondents (17) base their evaluations of the medical care process on interpersonal rather than the technical qualities of the provider: *"they have to know what they're talking about I suppose, but I wouldn't know"* (P14).

**Administrative Quality:** Two core themes were identified within administrative quality: timeliness and collaborative support. An example of timeliness includes: *"he took the time to explain my medication, he explained each tablet, what it done and how it done it and all that"* (P8). Collaborative support was expressed as follow-up actions exhibited by health care service providers post review. For example: *"she was great because she did what she said she would do"*; and *"I guess they spoke to each other because that's why my medication changed"* (P12).

### Adherence

The majority of respondents held the belief that they take too many medications, with most expressing a degree of concern regarding addiction. Fear of addiction and or adverse drug effects led some respondents (6) to modify their regime by taking themselves off certain

medications, not taking medications and or switching medications. For example, one respondent with a medical history including bowel cancer, depression, and epilepsy and whose medication plan includes eight different drugs stated: *“Tegretol is the only medication I have to take, all the rest I need to get off”* (P9). Many respondents had difficulty in identifying and or integrating symptomatic experiences with information provided by health professionals, which contributed to misconceptions regarding their health condition(s): For example: *“I felt that I could do without them ‘cause I don’t like taking tablets, then I thought the doctor was giving me the wrong medication you know, I didn’t take them and it made me sick and I ended up in hospital”* (P10). Despite these non-compliant practices, when asked specifically if respondents had been able to adhere to their medical plan, all respondents stated they did. This unanimous response was unsurprising given findings from past studies that suggest patients tend to underestimate missed dosages and or overestimate the extent to which they comply (e.g. Bergman and Werner, 1963).

### **Perceived Health Competence**

The data identified six health locus of control sub-dimensions: internal (16 respondents identified themselves as the primary person responsible for their health and can be classified as having high internal locus of control); others (six attributed the health responsibility to other carers e.g. family members); health care professionals (four identified health-care professionals including their GP or pharmacist or external/powerful others); God (one respondent believed God was responsible for their health); and packaging (one respondent attributed their ability to adhere to their regime due to the packaging of their medications). Similarly, 16 respondents displayed efficacious expectations in believing they manage their health well, whereas the remainder displayed low efficacy expectations by conceding that they could be managing their health better.

### **Emotional Intelligence**

The data suggests that female respondents were more emotionally intelligent than male respondents. A higher number of females indicated they had good relations with other people, signified by the accompanying stories of relationships with family members or friends recalled when discussing whether they thought it was easy for people to confide in them. Comparatively, a higher number of males indicated that they had difficulty in interacting with people which led them to believe that people did not easily confide in them. EI levels were additionally assessed by asking respondents how they would respond to a hypothetical HMR encounter: *“Imagine that the pharmacist who conducted your HMR was short with you. You thought they rushed the review without giving you the appropriate time. What would you think/ do?”* The majority of both female (7) and male (7) respondents displayed less empathic concern. The following statement reflects this majority view, respectively: *“she was probably feeling miserable and cranky and didn’t want to come anyway, so she’s taking it out on me”* (P2); and *“I wouldn’t take notice of it at all. It wouldn’t worry me, why should it worry me if they don’t do their job properly, it’s not my fault”* (P7).

## **Discussion**

The high credence properties characterising health services increase the complexities associated with quality evaluations. The data supports this view in that respondents identified perceived technical quality based on the interpersonal attitudes and behaviours of their provider during the HMR encounter. Although the relationship between quality perceptions

and adherence is equally complex, a positive relationship can be observed between quality perceptions and adherence behaviour. Hence, our model posits that quality perceptions on all three primary dimensions are likely to be positively associated with adherence behaviour.

Our findings also suggest that the relationship between service quality and adherence is moderated by EI and PHC. The data indicates that respondents with high EI are better able to cope with negative social interactions, as suggested by the hypothetical scenario and other broader stories depicted when discussing interpersonal relationships. Respondents with high EI generally placed a greater importance on social interactions and displayed stronger levels of self-awareness than respondents with low EI. Based on these findings, it would be reasonable to expect that service quality perceptions are influenced by the degree of EI as suggested in our model. Similarly, we suggest that service quality perceptions are influenced by PHC. The data indicates that the majority of respondents displayed high PHC (i.e. high internal locus of control and high self efficacy) and when combined with other findings made in relation to relative impact on quality dimensions, would suggest a relationship exists between PHC and quality perceptions. Additionally, the unanimous self-reports in relation to adherence provide further support that PHC influences quality perceptions which impact adherence behaviour as expressed in our model (Figure 1).

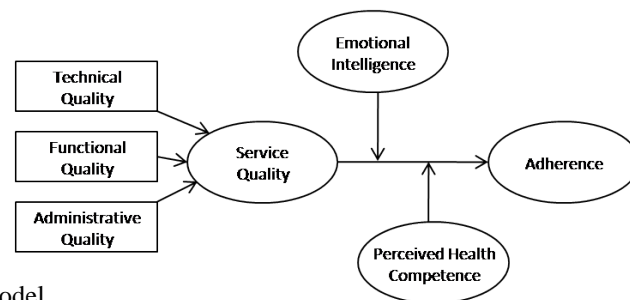


Figure 1. Conceptual model

## Limitations

We recognise the limitations associated with interpretations from the small sample size (n=20). The purposeful nature of the sample means that caution is necessary in drawing general conclusions from the information provided in this study. The study also recognises the limitations associated with the criteria of English-speaking patients as exclusionary of other cultural perspectives and or minority groups.

## Conclusion and Guidelines for Future Research

Overall, the findings suggest that patient EI and PHC influence service quality which impacts adherence behaviour. This study contributes to an understanding of service quality and adherence by conceptualising service quality from a socio-cognitive perspective by incorporating factors such as EI and PHC as moderators to overall service quality and adherence. No study has yet examined service quality and adherence from this integrated perspective. Providers who acknowledge the influencing role of EI and health competence can develop appropriate interventions which have the potential to enhance quality perceptions and importantly, patient adherence. The outcome of this study was the development of a conceptual model proposing these relationships. Further empirical testing of the model is suggested.

## References

- Bandura, A., 1988. Health promotion from the perspective of social learning theory. *Psychology and Health* 13(4), 623-649.
- Bergman, A. B., Werner, R. J., 1963. Failure of children to receive penicillin by mouth. *The New England Journal of Medicine* 268(June 13), 1334-1338.
- Chisholm-Burns, M. A., Spivey, C. A., 2008. Pharmacoaderence: A new term for a significant problem. *American Journal of Health-System Pharmacy* 65(7), 661-667.
- Choi, K-S., Cho, W-H., Lee, S., Lee, H., Kim, C., 2004. The relationship among quality, value, satisfaction and behavioral intention in health care provider choice: A South Korean study. *Journal of Business Research* 57(8), 913-921.
- Dagger, T. S., Sweeney, J. C., Johnson, L. W., 2007. A hierarchical model of health service quality: Scale development and investigation of an integrated model. *Journal of Service Research* 10(2), 123-142.
- Donabedian, A., 1966. Evaluating the quality of medical care. *Milbank Memorial Fund Quarterly* 44(44), 3.
- Haynes, B. R., Taylor, D. W., Sackett, D. L., 1976. *Compliance in Health Care*, John Hopkins University Press, Baltimore.
- Miles, M. B., Huberman, M. A., 1994. *Qualitative Data Analysis: An Expanded Sourcebook* (2nd ed), Sage Publications, London.
- Roth, H. P., 1987. Measurement of compliance. *Patient Education and Counseling* 10(2), 107-116.
- Rotter, J. B., 1966. Generalized expectancies for internal versus expectancies for external control reinforcement. *Psychological Monographs* 80(1), 1-28.
- Salovey, P., Grewal, D., 2005. The science of emotional intelligence. *Current Directions in Psychological Science* 14(6), 281-285.
- Sherbourne, C. D., Hays, R. D., Ordway, L., DiMatteo, R. M., Kravitz, R. L., 1992. Antecedents of adherence to medical recommendations: Results from the medical outcomes study. *Journal of Behavioral Medicine* 15(5), 447-468.
- Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., et al., 1998. Development and validation of a measure of emotional intelligence. *Personality and Individual Differences* 25(2), 167-177.
- Speake, D., 1987. Health promotion activity in the elderly. *Health Value* 11(6), 25-30.
- Smith, M. S., Wallston, K. A., Smith, C. A., 1995. The development and validation of the Perceived Health Competence Scale. *Health Education Research* 10(1), 51-64.
- Stake, R. E., 1995. *The Art of Case Study Research*, Sage Publications Inc.

Stephenson, B. J., Rowe, B. H., Haynes, R. B., Macharia, W. M., Leon, G., 1993. The rational clinical examination. Is this patient taking the treatment as prescribed? *Journal of American Medical Association* 269(21), 2779-2781.

Wallston, B. S., Wallston, K. A., Kaplan, G. D., Maides, S. A., 1976. Development and validation of the health locus of control (HLC) scale. *Journal of Consulting and Clinical Psychology* 44(4), 580-585.

Wallston, K. A., 1992. Hocus-pocus, the focus isn't strictly on locus: Rotter's social learning theory modified for health. *Cognitive Therapy and Research* 16(2), 183-199.

Yin, R. K., 2003. *Case Study Research - Design and Methods* (3rd ed. vol 5). Sage, Newbury Park, California.

Zineldin, M., 2006. The quality of health care and patient satisfaction: An exploratory investigation of the 5Qs model at some Egyptian and Jordanian medical clinics. *International Journal of Health Care Quality Assurance* 19(1), 60-92.