PERCEPTIONS OF KNOWLEDGE TRANSFER OF FOREIGN AFRICAN DOCTORS PRACTICING IN SOUTH AFRICAN PROVINCIAL HOSPITALS

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Abstract

This study assesses the perceptions of knowledge transfer of foreign African doctors, practicing in South African provincial hospitals relating to the process, barriers, channels and importance of knowledge transfer practices in the organization. A sample of 62 foreign African doctors practicing in South African provincial hospitals was drawn using snowball sampling. Data was collected using a self-developed questionnaire whose psychometric properties were statistically determined. Data was analyzed using descriptive and inferential statistics. The results indicate that foreign African doctors believe that in their hospital environments there are different barriers to knowledge transfer. Whilst the biographical profiles of these doctors do not significantly influence their perceptions of knowledge transfer, the latter is significantly impacted upon by the importance given to knowledge transfer practices in the organization and the different barriers to knowledge transfer. Strategies for enhancing knowledge sharing are recommended.

Keywords: Knowledge Transfer, Knowledge Transfer Process, Importance of Knowledge Transfer Practices, Barriers to Knowledge Transfer, Channels of Knowledge Transfer

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Introduction

The brain drain in South Africa has perpetuated the shortage of medical doctors. The saving grace for the South African citizenship has been the continuous migration of medical doctors from developing and developed countries into the country. The true benefit, however, can only be realized if local and foreign doctors are able to effectively share knowledge with one another. In order to replace doctors that have emigrated and ensure the smooth running of public hospitals in South Africa, the country is relying on the remaining doctors' willingness to transfer their skills and competences to their fellow African foreign doctors who are willing to practice in South African public hospitals. This will enable the local hospitals to lever their core competencies and gain competitive and strategic advantages (Gold, Malthotra & Segars, 2001; Walczak, 2005).

Hence, local hospitals wanting to capitalize effectively on the influx of doctors from other African countries must be able to overcome the challenge of transferring knowledge to these doctors. Whether in the public or private sector, today's competitive business environment requires members of an organization to share knowledge with one another (Nevis, Anthony & Gould, 1995; Davenport & Prusak, 1998; Chow, Deng & Ho, 2000). Many organizations have concluded that effective knowledge sharing is the crucial way to lever their core competencies and gain competitive advantage (Gold, Malthotra & Segars, 2001). In this context, knowledge identification, sharing and application within and beyond the local provincial hospitals becomes crucial for success.

Based on the views of a select number of African foreign doctors trained in other African countries and currently practicing in South African public hospitals, this study investigates their perceptions of knowledge transfer relating to the knowledge transfer process, barriers, channels and importance of knowledge transfer practices and, the influence of their biographical profiles on these perceptions.

Knowledge transfer as a central component of knowledge management

Davenport and Prusak (1998) classify knowledge management into three main components, namely, knowledge production, knowledge codification and coordination, and knowledge transfer. Among these three, knowledge transfer is considered to be the central aspect as it enables an organization to distribute information, which is its most valuable

resource, to its employees. Knowledge transfer benefits the organization as it enables employees to take informed decisions (Davenport & Prusak, 1998). As opposed to material assets that shrink as they are utilized, knowledge resources are improved as they are used. This implies that sharing ideas/knowledge within the organization will allow the organization to increase its own knowledge without the additional costs associated with creating, codifying, or capturing more knowledge (Catarino, 2009). Knowledge transfer is believed to be a wider concept than technology transfer as it includes other transfer channels, such as enhancing the potential of workers. In today's information economy, knowledge is recognised as an organization's competitive asset (Teece, 1998). Therefore, knowledge transfer has become a very important element in determining the strength of an organization.

Knowledge transfer comprises of a range of activities that aim to accumulate and convey knowledge (either explicit, such as in patents or tacit such as know-how), skills and competence from those who create them to those who will convert them into profitable results. By allowing a two-way process of transferring ideas, research, results, experience, or skills between two different parties, knowledge transfer enables the organization to create new knowledge and to make use thereof (RCUK, 2006).

The literature divides knowledge transfer into tacit and explicit knowledge. Researchers agree that explicit knowledge can pass more easily from one person to another than tacit knowledge. However, an organization that needs to easily transfer tacit knowledge must ensure the development of individuals'/groups' tacit knowledge. The development of individual/group knowledge will enable the individual/group to understand themselves. This understanding, in turn, is considered to be an important aspect of tacit knowledge transfer. Both knowledge giver and receiver need to understand their knowledge well, understand themselves as unique individuals and carefully assess their environment, and one another's values and beliefs before tacit and explicit knowledge can be transferred. The implication for South African provincial hospitals is that transferring knowledge to African foreign doctors practicing in these hospitals is a basic step for sustaining competitive advantage. However, success in knowledge transfer depends on employees' absorption capacities, the organizational learning climate, and the willingness of South African local doctors in these organizations to transfer knowledge (Ladd & Herminges, 2003).

Benefits of knowledge transfer

As the above analyses demonstrate, the term "knowledge" deals with certain activities that attempt to pass on knowledge from one unit(s) of the organization to another unit(s). Knowledge transfer provides a cheaper substitute for the conception and codification of new knowledge. This is true given that the more people share their knowledge or their effective ways of doing an organizational task, the more likely they will be to promote the organization's performance levels. This leads to an improvement in the organization's overall performance without having to invest more energy or money to create, codify, or capture new knowledge (Catarino, 2009). By ensuring that staff across the organization possesses the required skills and knowledge to effectively perform their job, the organization is able to be successful. Hence, effective knowledge transfer constitutes a key mechanism for organizational success. Furthermore, for an organization, the transfer of practicable knowledge will support the initiative to commonly seek solutions to problems encountered when working with one another. Transferring knowledge among organizational departments and people can produce considerable learning profit and significantly enhance the organization's productivity and boost its chance of surviving in this competitive and ever changing environment (Argote, 1999).

The key dimensions of knowledge transfer

This study assesses the perceptions of knowledge transfer of foreign African doctors, practicing in South African provincial hospitals relating to four key dimensions, namely, knowledge transfer process, importance of knowledge transfer practices in the organization, different barriers to knowledge transfer and channels of knowledge transfer.

Knowledge transfer process

Within the organizational setting, knowledge transfer can occur at different levels of the organization including during day-to-day organizational activities, between the departments of the same organization as well as between allied organizations that engage in joint venture relationships or between independent organizations. Knowledge transfer within and among allied organizations can be perceived as a dynamic practice that includes numerous steps from the individual(s) or department(s) starting with spotting the needed knowledge to pass on and ending with the understanding of how this knowledge is going to be used by other individual(s)/department(s) who receive it (Minbaeva, Pedersen, Bjorkman, Frey & Park, 2003). An increase in the amount of knowledge transferred within an organization has the potential to save an organization money while positioning it to face future challenges more effectively (Catarino, 2009). Undoubtedly, knowledge is a crucial resource of business, which when shared and transferred effectively between individuals/units could enable the organization to gain competitive and strategic

advantages (Walczak, 2005). The implication is that the process of knowledge transfers must be actively facilitated across the organization. This means that employees must be:

- free to express a lot of opinions and thinking towards discussion topics in organizational meetings,
- encouraged to transfer professional knowledge, experience and expertise to others,
- motivated to transfer methodologies of task performance to others,
- able to modify their own work activities to incorporate what they learn from others for better work performance,
- supported in making significant improvements in their work performance through knowledge gained from colleagues,
- encouraged to continuously adapt work methods to make them more effective, and thereby achieve optimum levels of performance.

Importance of knowledge transfer practices in the organization

Some knowledge transfer practices can be useful in both allied people/organizations and independent people/organizations and if well dealt with, knowledge transfer can give significant economic payback and competitive advantages for organizations/people engaged in it (Argote, 1999). Organizations that place a high level of importance on knowledge transfer within the organization, intentionally allocate fixed time for knowledge transfer, for example, setting one hour per week where people within the department come together to exchange their knowledge and work experience. Such organizations fully acknowledge that their competitive advantages are not only dependent on their possession of knowledge but also on its capability to exploit the knowledge resources effectively (Nelson & Winter, 1982). Organizations that recognize the importance of knowledge transfer practices implement them within and across the organization in order to:

- Improve the competitive advantage of the organization.
- Help integrate knowledge within and across the organization.
- Improve the capture and use of knowledge from sources outside the organization.
- Increase efficiency by using knowledge to improve work performance.
- Increase staff acceptance of innovations.
- Improve staff retention.
- Ease collaborative work of project or teams that are separated (that is, at different departments).
- Identify and/or protect strategic knowledge present in the organization.
- Promote the transfer of knowledge to other staff across the organization.

Different barriers to knowledge transfer

Although organizations recognise the importance of transferring knowledge, numerous challenges such as funding, the organizational culture and climate, interpersonal relationships, language and communication and lack of time pose as barriers to knowledge transfer. A lack of incentives and motivation for those who have knowledge to pass on to others who require it is also a well known barrier to knowledge transfer. Most organizations do not pay their staff proportionately to the work done in solving problems or transferring knowledge to new employees or their co-worker(s). In their attempt to enhance knowledge transfer within the organization, Orvill & Hicks (2000) believe that genuine and concrete incentives should be offered to people who share their knowledge. Another obstacle to successful knowledge transfer is dealing with ambiguity. This refers to the fact that there are certain difficulties associated with transferring one's knowledge/know-how. Many people do not know how to impart a detailed and specific set of processes required to achieve a particular outcome.

Knowledge transfer is difficult, especially because for most people knowledge is understood in its original context (Zollo & Winter, 2002). It is hard to recreate the original context and this obstructs knowledge transfer. In addition, people take most of their knowledge for granted and there are certain procedures that they will not mention when transferring knowledge because they assume that the other person knows it; this obstructs knowledge transfer between individuals. This can be understood using Peter Senge's (1990) concept of the Mental Model, that postulates that individual knowledge (understanding) is determined by their own experience, education and training. Depending on an individual's background he/she will understand certain things in certain ways. This will influence the way people perform certain actions or tasks, and they might not think it necessary to share this information with others at the point of knowledge transfer.

Furthermore, Husted and Michailova (2002) list six reasons behind knowledge transfer resentment:

- The possibility of losing the worthiness of their own knowledge, the power associated with it, and preserving oneself from losing the brand that makes him or her more attractive in the job market;
- When people see their knowledge as the fruits of their hard work it results in strong feelings of personal ownership that one will protect at any cost.
- Lack of eagerness to devote their time to knowledge sharing. Lack of commitment in knowledge sharing on the part of individuals who

possess knowledge, since the individual does not see the benefit that he/she will get from sharing his/her knowledge. The knowledge holder may be reserved about sharing his/her knowledge with someone he/she perceives to be lazy or who is not making much effort to learn or to develop him/herself.

- Avoidance of exposure. Individuals may be unenthusiastic about sharing their knowledge for fear that by sharing their knowledge other people might discover inadequacies in their knowledge.
- Individuals are not sure how the person to whom they are transferring their knowledge will receive and interpret that knowledge.
- Organizational promotions are usually associated with individual skills; hence, some individuals resist sharing their expertise for fear of losing the benefits and authority linked with their knowledge.

Other factors that hinder knowledge transfer include ineffective communication, different frames of reference, lack of trust, status and rewards given to knowledge owners, intolerance for mistakes or need for help, not well defined/identified persons who have knowledge that is needed, little commitment of head of department to the knowledge transfer process, the influence of individual culture, social power relations, resistance to change and lack of time.

In order to overcome barriers to knowledge transfer, it is imperative to create and shape an organization setting where members are not afraid to exchange their knowledge with one another in its approach to grow its business and simultaneously stay ahead of their competition. This is true because knowledge exchange among individuals with different capabilities is believed to be at the heart of the continuous knowledge innovation as it is a prerequisite step for knowledge transfer (Nonaka & Takeuchi, 1995).

Channels of knowledge transfer

Numerous channels of knowledge transfer exist, for example, staff induction programmes, professional development programmes, social networks, reflective practices, organizational communities, project or collaborative work teams. In addition, people gain expertise as a result of teamwork and collaboration. The day-to-day sharing of know-how, knowledge and expertise may also be transferred through mentoring, training and discussions or face-to-face interactions.

RESEARCH DESIGN

Respondents

The population comprised of foreign African doctors who obtained their degrees at medical schools outside South Africa and are living and practicing in South Africa. The population size is estimated at 5277 foreign qualifying doctors. However, it was not possible to determine exactly how many were from overseas and how many were from other African countries. Hence, the exact population size of foreign, African doctors cannot be deduced. Roscoe (1975), cited in Sekaran (2003), advises that as rule of thumb a minimum sample size of 30 is acceptable for statistical analysis. In line with this, the sample size of 62 relevant respondents is viewed as being adequate and appropriate for this study.

In this research, a non-probability sampling technique called snowball sampling was chosen. This was due to the fact that, firstly, the known number of the population of foreign African doctors in South Africa has not been determined. Secondly, this population is not easily accessible and is spread all over the country. The researcher was not able to access lists of foreign African doctors practicing in South African provincial hospitals due to the lack of authorisation from the South African Department of Health. This meant that the researcher had to choose a sample that would be representative of doctors from different parts of the African continent practicing in South African provincial hospitals and draw the sample based on referrals or links. First, the researcher obtained a pool of potential participants from diverse contacts who represent people from different African countries and meet the criteria for inclusion in the study. They were then asked to recommend others who they may know who also meet the criteria. The referral process continued until the researcher was continuously being referred to the same sample subjects. A sample of 62 foreign doctors was thus drawn. The adequacy of the sample was determined using the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (0.450) and the Barlet's Test of Spherecity (1923.330, $p = 0.000$), which respectively indicated suitability and significance. The results indicate that the normality and homoscedasticity preconditions are satisfied. In terms of the composition, 75.8% were male doctors and 24.2% were female, the majority were between the ages of 31 and 50 years (85.5%) with almost equivalent occupational tenure representation (1-3 years: 17.7%, 4-6 years: 25.8%, 7-9 years: 25.8%, 10 years and over: 30.6%). In terms of tenure in South Africa, the majority (50%) were in service for 1-3 years followed by 4.6 years (35.5%), thereby indicating that the majority of the foreign doctors sampled were in service for 1-6 years in South Africa. Whilst 30.6% of the doctors had work contract permits for 2 years and above, 19.4% had permanent work permits. The doctors varied in terms of country of graduation (such as Democratic Republic of Congo, Rwanda, Tanzania, Nigeria, Zimbabwe, Botswana) and worked in different departments/units (acute assessment, emergency, intensive care, neonatal, paediatric).

Measuring Instrument

Data was collected using a self-developed, pre-coded, self-administered questionnaire consisting of two sections. The first section (Section A) related to biographical information (gender, age, occupational tenure, tenure in South Africa, nature of work permit, country of graduation and deparment/unit of employment. The second section (Section B) comprised of 16 items relating to the process, barriers, channels and importance of knowledge transfer practices in the organization. Whilst Section A was nominally scaled with precoded option categories, Section B required the respondents to rate each item using a Likert Scale ranging from strongly disagree (1) to strongly agree (5). The questionnaire was formulated on the basis of identifying recurring themes that surfaced while conducting the literature review. This ensured face, content and construct validity. Furthermore, in-house pretesting was adopted to assess the suitability of the instrument. Pilot testing was also carried out using 8 subjects, selected using the same procedures and protocols adopted for the larger sample. The feedback from the pilot testing enabled the rephrasing of one ambiguous question and contributed to ensuring that the final questionnaire was appropriate in terms of relevance and construction.

Research procedure

The research was only conducted after ethical clearance was obtained for the study and upon completion of the pilot study.

Measures/statistical analysis of the questionnaire

The validity of the questionnaire was assessed using Factor Analysis. A principal component analysis was used to extract initial factors and an iterated principal factor analysis was performed using SPSS with an Orthogonal Varimax Rotation. In terms of the validity, four key dimensions of knowledge transfer with latent roots greater than unity (Eigenvalues: 6.038, 5.525, 4.936, 3.264) were identified. The items were also reflected as having a very high level of internal consistency and reliability, with the Cronbach's Coefficient Alpha being 0.879 with item reliabilities ranging from 0.871 to 0.883.

Administration of the measuring instrument

The questionnaires were sent out to the participants both personally by the researcher and by e-mail. The first round of participants were known to the researcher and were asked to provide names, phone numbers, and e-mail addresses of other possible participants. The researcher sent information about the study to these candidates by e-mail or by hand, depending on where about the candidate was located and the participants returned the completed questionnaires to the researcher by e-mail or by hand. Informed consent was obtained by means of an information leaflet and an authorisation letter that accompanied the questionnaire. The responders received a phone call a week letter after receiving the questionnaire to return it, if they had not already done so. All participation was voluntary.

Statistical analysis of the data

Descriptive statistics (means, standard deviations) and inferential statistics (t-test, Analysis of Variance, multiple regression) were used to evaluate the objectives and hypothesis of the study.

RESULTS

Descriptive statistics

The perceptions of respondents regarding knowledge transfer was assessed by asking respondents to respond to various items using a 1 to 5 point Likert scale. The results were processed using descriptive statistics (Table 1).

Table 1. Descriptive statistics: key dimensions of knowledge transfer

Dimension	Mean	95% Confidence Interval		Variance	Std. dev.	Min.	Max.
		Lower Bound	Upper Bound				
Knowledge transfer process	3.70	3.57	3.84	0.289	0.538	2	5
Importance of knowledge transfer practices in the organization	3.37	3.16	3.58	0.683	0.827	1	5
Different barriers to knowledge transfer	3.74	3.58	3.91	0.416	0.645	1	5
Channel of knowledge transfer	3.68	3.53	3.84	0.370	0.608	1	5

Table 1 indicates that the medical doctors perceive the dimensions of knowledge transfer differently, which in decreasingly level in terms of mean score values are: different barriers to knowledge

transfer (Mean = 3.74), the knowledge transfer process (Mean = 3.70), the channel of knowledge transfer process (Mean = 3.68) and lastly, the importance of knowledge transfer practices in the organization (Mean = 3.37). A comparison of the mean score values against a maximum attainable score of 5 indicates that there is room for improvement in each of the sub-dimensions of knowledge transfer. In order to gain further insight into these sub-dimensions of knowledge transfer, frequency analyses were conducted.

With regard to the knowledge transfer process, 89.2% of the respondents have a positive perception as they either agreed or strongly agreed that they have modified their own work activities to incorporate what they have learnt from others to better their performance. In addition, 84.9% of respondents also agreed or strongly agreed that they have made significant improvements in their work performance through knowledge gained from their colleagues. Furthermore, 77.4% of respondents agreed or strongly agreed that their method of work performance is more effective as a result of their experience gained in transferring knowledge. However, 22.6% of the respondents indicate that they do not express their opinions and thinking during discussions in meetings.

With regard to the importance of knowledge transfer practices in the organization, 74.2% of participants positively agreed that the overall transfer of knowledge within the organization will increase efficiency by using knowledge to improve work performance, as opposed to 9.7% of people who disagreed with this statement.

Regarding different barriers to knowledge transfer, 74.2% of respondents positively agreed that the intolerance for mistakes or need for help do constitute barriers for knowledge transfer, as opposed to 13.1% of respondents who disagreed with the statement.

With regard to the channels of knowledge transfer, 75% of respondents positively perceive the induction programme to be a most useful channel to transfer knowledge. In addition, 83.9% of the respondents also positively perceive the professional development programme to be a useful channel of knowledge transfer as opposed to 9.7% who did not believe so. Furthermore, a significant percentage of the respondents also had a positive perception about reflective practices (80.7%), project or collaborative work teams (77.4%) and networking (75%) as channels of knowledge transfer.

Inferential statistics

The influence of the biographical variables (gender, age, length of service as a medical doctor, country of graduation, length of service in South Africa, Department, length of working in own country, nature of work permit) on the dimensions of knowledge transfer respectively were evaluated using tests of differences (t-test and ANOVA).

Hypotheses 1

There is a significant difference in the perception of employees varying in biographical profiles (gender, age, length of service as a medical doctor, length of service in South Africa, Department, nature of work permit) regarding the dimensions of knowledge transfer (knowledge transfer process, importance of knowledge transfer practices in the organization, different barriers to knowledge transfer, and channels of knowledge transfer) respectively (Table 2 and Table 3).

Table 2. T-test: dimensions of knowledge transfer and gender

Knowledge transfer categories	Gender	N	Mean	Std. Deviation	t	df	p
Knowledge transfer process	Female	15	3.79	0.584			
	Male	47	3.68	0.526	0.687	21.739	0.499
Importance of knowledge transfer practices in the organization	Female	15	3.28	0.704			
	Male	47	3.40	0.867	-0.522	28.793	0.605
Different barriers to knowledge transfer	Female	15	3.57	0.725			
	Male	47	3.80	0.616	-1.114	20.854	0.278
Channels of knowledge transfer	Female	15	3.59	0.368			
	Male	47	3.71	0.668	-0.836	44.017	0.408

Table 3. Anova: dimensions of knowledge transfer and each biographical variable

Dimension	Age		Occupational tenure		Tenure in South Africa		Department or Unit		Nature of work permit	
	F	p	F	p	F	p	F	p	F	p
Knowledge transfer process	2.124	0.107	0.277	0.842	2.103	0.092	1.207	0.318	0.738	0.534
Importance of knowledge transfer practices in the organization	0.143	0.934	1.621	0.194	1.745	0.153	0.476	0.792	0.615	0.608
Different barriers to knowledge transfer	0.276	0.842	1.619	0.195	0.869	0.488	0.867	0.509	0.763	0.519
Channels of knowledge transfer	0.549	0.651	0.607	0.613	1.563	0.197	1.099	0.371	1.559	0.209

Tables 2 and 3 reflect that there is no significant difference in the perception of employees varying in biographical profiles (gender, age, length of service as a medical doctor, length of service in South Africa, Department, nature of work permit) regarding the dimensions of knowledge transfer (knowledge transfer process, importance of knowledge transfer practices in the organization, different barriers to knowledge transfer, and channels of knowledge transfer) respectively. Hence, hypothesis 1 may be rejected.

Hypothesis 2

The four dimensions of knowledge transfer (knowledge transfer process, importance of knowledge transfer practices in the organization, different barriers to knowledge transfer, channels of knowledge transfer) significantly account for the variance in determining knowledge transfer (Table 4).

Table 4. Multiple regression: knowledge transfer and its dimensions

Model	R	R Squares	Adjusted R Square	Std. Error of the Estimate
1	0.771	0.594	0.587	0.281
2	0.898	0.806	0.799	0.196
3	0.960	0.921	0.917	0.126
4	1.000	1.000	1.000	0.000

Coefficient					
Model	Unstandardised coefficients		Standardised Coefficients	t	Sig
	B	Std. Error	Beta		
4 (constant)	0.000	0.000		0.000	1.000
Importance of knowledge transfer practices in the orgisation	0.250	0.000	0.473	2.039E8	0.000
Knowledge transfer process	0.250	0.000	0.308	1.370E8	0.000
Different barriers to knowledge transfer	0.250	0.000	0.369	1.821E8	0.000
Channels of knowledge transfer	0.250	0.000	0.348	1.418E8	0.000

Table 4 indicates that the four dimensions of knowledge transfer (importance of knowledge transfer practices in the organization, knowledge transfer process, different barriers to knowledge transfer, channels of knowledge transfer) significantly account for 100% of variance in determining knowledge transfer. Beta analyses were conducted in order to determine the extent to which these four dimensions impact on knowledge transfer. The result of the Beta analyses indicate that the four dimensions impact on knowledge transfer in varying degrees which in decreasing level of impact are:

- Importance of knowledge transfer practices in the organization (Beta = 0.473)
- Different barriers to knowledge transfer (Beta = 0.369)
- Channels of knowledge transfer (Beta = 0.348)
- Knowledge transfer process (Beta = 0.308)

DISCUSSION OF RESULTS

Dimensions of Knowledge Transfer

The results indicate that the African foreign doctors perceive the dimensions of knowledge transfer differently, which in decreasingly level of impact, based on beta values, relate to the importance of knowledge transfer practices in the organization (Beta = 0.473), different barriers to knowledge transfer (Beta = 0.369), channels of knowledge transfer (Beta = 0.348) and knowledge transfer process (Beta = 0.308):

Importance of knowledge transfer practices in the organization

The importance of knowledge transfer practices in the organization was found to have the greatest influence on knowledge transfer (Beta = 0.473). Informational resources take on particular importance for the transfer of good practices. Lucas and Ogilvie (2006) conclude that behavioural-based incentives are designed to motivate employees to share information with colleagues about practices that can be adapted to their needs. Similarly, Ndlela and du Toit (2001) agree that knowledge transfer practices can bring a great deal of benefits to an organization. They pointed out that through sharing and capturing of experiences and information, a better exploitation and collection of knowledge of individuals, organizations and professional bodies can be accomplished. By sharing information and knowledge, individual employees can learn from the work experience and know-how of others in the organization (Kang, Kim & Chang, 2008). In addition, to this Kang et al. (2008) maintain that the sharing of knowledge should not only be viewed as a cost effective learning strategy but can also validate individual employees' accumulated knowledge.

Different barriers to knowledge transfer

Having the second largest impact on knowledge transfer, based on beta values, is different barriers to knowledge transfer (Beta = 0.369). Researchers indicate that, knowledge sharing is influenced by factors both at the individual and organizational level (Szulanski, 1995, 1996; Jensen & Szulanski, 2007; Bratianu & Orzea, 2010). At the individual level, one of the most important factors affecting the knowledge transfer process is trust. Most people are unlikely to share their knowledge and experience without a feeling of trust. People must have the feeling of trust that others will not misuse their knowledge, and that the information that one receives is accurate and credible due to the source of information. The level of trust that exists between the organization, its subunits, and its employees greatly influences the amount of knowledge that flows both between individuals and from individuals into the firm's databases, best practices achieved and other records (De Long & Fahey, 2000).

De Long and Fahey (2000) also suggested that culture influences behaviour central to knowledge creation, sharing, and use in several ways. Culture shapes assumptions about what knowledge is worth exchanging and also defines relationships between individual and organizational knowledge, determining who is expected to control specific knowledge, as well as who must share it. Also, culture creates the context for social interaction that determines how knowledge will be shared in particular situations shaping the processes by which new knowledge is created, legitimated, and distributed in organizations. Rigid, formal and command-and-control structures, for example, can promote functional efficiency at the expense of collaborative and innovative activities.

Szulanski (2000) agreed that the incapacity of the organization to identify key people who possess the knowledge needed to be transferred may also pose as a barrier to knowledge transfer. This happens because not knowing those who have the 'useful knowledge' makes it impossible for those who could benefit from it to access it.

In addition, Szulanski (2000) identifies lack of money, time, and management resources to pursue and study the knowledge in enough detail to make it useful as barriers to knowledge transfer. In a study undergone in eight companies, Szulanski (1995, 1996) analysed the internal stickiness of knowledge transfer. Stickiness refers to the difficulty of transferring knowledge. The study revealed that the most important barriers to the internal transfer of knowledge within a company are recipient's lack of absorptive capacity, causal ambiguity, and arduous relationship (Szulanski, 1995, 1996).

Furthermore, lack of interpersonal relationships is also a barrier to knowledge transfer because people absorb knowledge and practice from other people they know, respect, and often like. If two managers have no personal bond, no tie or link which pre-establishes trust, they are less likely to incorporate each other's experiences into their own work.

Lastly, lack of motivation has also been viewed as a barrier to knowledge transfer as people may not perceive a clear business reason for pursuing the transfer of knowledge of best practices if they lack motivation.

Channels of knowledge transfer practices

The channels of knowledge transfer practices in the organization were perceived as being third out of the four dimensions influencing knowledge transfer (Beta = 0.348). A distinction, which is often applied regarding knowledge transfer channels, is between informal and formal. The communality between informal and formal channels is that they both collaborate to allow individuals or organization(s) involved to share task-specific knowledge with a partner. Accordingly, research revealed that formal channels, such as consultancy, joint research projects, community of practice (Wenger, 1999), social network, project/collaborative teams, mentoring, training, collaborative research and development are among the most used channels for knowledge transfer with public research institutes and universities in the chemical industry (Arundel & Geuna, 2004) and has the potential to unite practitioners by shared practice and a shared sense of belonging (Kislov, Harvey & Walshe, 2011).

The Informal channels include informal interactions, observation, informal seminar,

communication process (Alavi & Leidner, 2001) and informal network (Johnson, 1992). In some cases, the informal channels of knowledge transfer allow knowledge transfer to occur when one is performing his his/her everyday work. Informal contacts are mainly considered to be useful for transferring knowledge between individuals. However, organizations still prefer a formal collaboration to prevent unwanted leaking or infiltration of firm specific knowledge/information. Furthermore, researchers have revealed that the informal channels are relatively simple, uncomplicated and more flexible (Hakansson & Johanson, 1988). Von Hippel (1994) found that informal know-how trading is a voluntary exchange of technical information and by nature it is a process which initiates technological spill-overs.

Knowledge transfer process

Knowledge transfer process was perceived as having the least, though significant, influence on knowledge transfer (Beta = 0.308). The knowledge transfer process involves the transmission of knowledge from the initial location to where it is needed and is applied. It is considered as an important facet of knowledge management. Some researchers have argued that knowledge transfer process provides a firm basis for developing a sustainable competitive edge especially in an unstable business environment (Argote & Ingram, 2000). Similarly, Davenport and Prusak (2000) suggested that the knowledge transfer process involves two actions: (i) transmission of knowledge to potential recipient; and (ii) absorption of the knowledge by that recipient that could eventually lead to changes in behaviour or the development of new knowledge. Knowledge processes (knowledge management activities) are considered as a structured coordination for managing knowledge effectively (Gold, Malthotra & Segars, 2001). Typically, knowledge processes include activities such as creation, sharing, storage, and usage. Knowledge processes represent the basic operations of knowledge, and enablers provide the infrastructure necessary for the organization to increase the efficiency of knowledge processes. Several empirical researchers investigated the relationship between knowledge characteristic (tacit versus explicit) and knowledge transfer processes, finding that the higher the tacit level of the knowledge, the more difficult the knowledge transfer process is (Simonin, 1999). Several contextual factors including the organizational culture, organizational structure, incentive system and information technology are seen as factors that most influence the knowledge transfer process (Al-Alawi, Al-Morzooqi & Mohammed, 2007; Cabrera, Collins & Salgado, 2006; Chen & Huang, 2007).

Impact of biographical variables on knowledge transfer

Gender

The results (Table 2) indicate that indicate that gender does not significantly influence foreign African doctors' perceptions of knowledge transfer. This result is in line with previous studies by Ojha (2005) who studied the impact of team demography on knowledge sharing in software project teams and Watson and Hewett (2006) who did a multi-theorical model of knowledge transfer in organizations and reported that gender had no significant impact on knowledge transfer. However, a study by Miller and Karakowsky (2005) indicated that there are significant differences between men and women in their effort to seek knowledge. Also, women gained more benefits from knowledge sharing (Irmer, Bordia & Karakowsks, 2002). A study by Lin (2006) indicated that women are more willing to share knowledge because they are more sensitive to instrumental ties and have a need to overcome traditional occupational challenges. Pangil and Nasrudin (2008) found that there is a significant difference between men and women in terms of tacit knowledge sharing behaviour.

Age

The results of the study (Table 3) indicate that age does not significantly influence foreign African doctors' perceptions of knowledge transfer. These findings are supported by that of Ojha (2005) and Watson and Hewett (2006) who showed that age does not affect knowledge sharing behaviour. However, Reige (2005) suggested that difference of age could be also a potential factor for knowledge sharing behaviour. Furthermore, Gumus (2007) found that there were significant differences between age groups concerning knowledge collecting and not knowledge donating; people with the age between 36 to 40 are poor on collecting knowledge. A study by Keyes (2008) uncovered a more definite relationship between age and knowledge sharing.

Length of service

The results of the study (Table 3) indicate that tenure does not significantly influence foreign African doctors' perceptions of knowledge transfer. However, contrary to our finding, in a research study undertaken by Chow, Harrison and McKinnon & Wu (1999) where the authors compared Chinese to the Anglo American culture, they established that employees with long work experience (7 years and over) displayed an unwillingness to share knowledge by not sharing their own errors made in an organization. The difference in the results obtained in the current study regarding length of service and that

of Chow et al. (1999) may be attributed to the fact that Chow et al. (1999) compared the Chinese and Anglo American cultures which is different from the African culture in this study.

Length of service in South Africa/Departments/Types of work permits

The results of the study (Table 5.7) indicates that there is no significant difference in the perceptions of medical doctors varying in the remaining demographic variables (length of service in south Africa, departments, types of work permits) regarding the dimensions of knowledge transfer. Due to the paucity of research that specifically assesses the influence of these demographic variables comparative findings could not be cited.

RECOMMENDATIONS

From the findings of the research carried out among African foreign doctors practicing in South African provincial hospitals, the following recommendations can be made:

Dimensions of knowledge transfer

In order to overcome different barriers to knowledge transfer:

- It is imperative to create and nurture an environment of **trust** among employees and between employees and management within the provincial hospitals; as trust is believed to be the emotional glue that binds followers and leaders together (Bennis & Nanus, 1985). In order to build trust among doctors in South African provincial hospitals an environment of fairness and consistency, mutual respect, accountability, cooperation and honesty with open communication must be created and shaped.
- It is also important to create a supportive culture that is collaborative, open and innovative; hence, conducive to knowledge sharing. To reinforce this culture, rewarding and recognising systems that support knowledge sharing is imperative. Strategies include rewarding group achievement rather than individual achievement, encouraging team-work, recognising individuals who share knowledge, encouraging social networking (community of practice, professional development programmes, social networks, reflective practices, organizational communities, project collaborative teams, promoting mentoring programmes, training, and discussion rooms). Introducing these formal and informal professional networks in the organization will encourage individual doctors to exchange their experiences, and knowledge. Overall, the adoption of these collaborative cultures will help the provincial hospitals to improve cooperation based on dialogue and mutual respect among peers (Ahmed & Hafez, 2010) and will also enable individual employees to learn from each other. It will also foster an open and innovative culture within the organization because an individual who is able to work well with others is essential for such a culture. The more interaction an individual has with peers and colleagues, the more the level of the interaction will improve.
- There is a need to locate subject-matter experts within the hospitals. The hospitals should also implement 'skills databases' in order to 'identify people with the right knowledge'. Skills databases will depend on individual doctors manually updating their profiles as their competencies and job functions change. A database administrator needs to be assigned to continually update the database as new employees are hired and existing employees leave or move within the organization. A knowledge directory will enable employees to locate subject-matter experts in order to share tacit knowledge, and their experiences, 'know-how and insights. After a user specifies the expertise she/he seeks, a knowledge directory returns a list of ranked subject-matter experts and their contact information based on the explicit knowledge assets those employees contribute to the knowledge management system. While a knowledge directory should eliminate the bulk of manual updating, it should also provide a way for administrators to modify the results returned.
- Time, money and management resources and support are success factors in knowledge management. It is, therefore, important for the hospitals to set aside periods of the workday for learning and practicing knowledge management. Employees with time for knowledge management also need coaching.
- The provincial hospitals should introduce an incentive system to motivate and encourage employees to share knowledge. This could be either extrinsically motivated, that is, achieve goals that are apart from the work itself, or intrinsically motivated, that is, gain personal satisfaction from doing the job (Amabile, 1997). Increased salaries, bonuses and promotions are included in the former, while organizations apply more "soft" instruments like acknowledgement and personal development to the latter. Researchers like Osterloh and Frey (2000) and Mudambi and Navarra (2004) note the importance of intrinsic motivation mechanisms to support knowledge creation and sharing in an organization. Neither incentives nor the type of incentives normally assumed effective, such as bonuses or promotions, are most effective at motivating knowledge sharing. Instead,

employees favour intrinsically motivated incentives, such as colleagues' acknowledgement and respect, improved reputation, and the possibility of professional or personal development.

In order to improve the process of knowledge transfer within the provincial hospitals:

- It is imperative that these organizations are able to create, share, store and use knowledge. This can be easily achieved by using methods such as Critical Incident Interviews or questionnaires. This will enable these organizations to tape the lessons of experience. By documenting the lessons of experience of the organization's most experienced performers, the organization can capture the fruits of experience. This can include, for example, the documentation of 'difficult cases' and how they were handled in order to lay the foundation for the development of their own knowledge that can be captured in a manual for employee reference.
- Information technology (IT) infrastructure is important for knowledge sharing and facilitates knowledge creation, knowledge storage, and knowledge sharing through better internal communication flows within an organization (Alavi & Leinder, 2001; Hsu, 2008). Knowledge sharing among project team members within the provincial hospitals could be increased through the use of IT, such as group decision support systems and networks, e-mail, chat sessions, online discussions, video conferencing, virtual classes, presentations, and reflective meetings (Song, 2009).

In order to enhance the channels of knowledge transfer in the organization:

- The provincial hospitals should introduce informal channels like job-shadowing programmes. A job-shadowing programme is one strategy by which to transfer knowledge from one person or group to another. A less-experienced performer is paired up with a veteran performer. The veteran is asked to share knowledge (and perhaps hands-on practice) in dealing with the most difficult situations which he or she has faced on the job.
- Communities of Practice: This would involve doctors within the hospital forming a group that comes together to share information about a common problem, issue or topic. Such communities of doctors may meet in person or online. This will allow the organization to store and transmit knowledge from one person (or group) to another person or group.
- Mentoring Programmes: A mentor is an experienced performer; a mentee is a less-experienced one. Mentors offer advice on what to do, how to do it and why it is worth doing in a particular situation. Such programmes will facilitate knowledge transfer among doctors.
- Information Exchanges: This strategy will require experienced doctors to sit at booths and dispense wisdom to less-experienced performers who visit them.
- Best Practice Studies or Meetings: One way to capture the lessons of experience is for the organization's decision makers to do better than they have historically done, by tapping into their retiree base. Individuals with valuable knowledge can be placed on retainer to provide one-on-one phone guidance or even online or video-conference advice to less-experienced workers as they face problems.
- Investing in research and development programmes will ensure that the provincial hospitals are abreast of trends in the field of medicine.

In order to maximise knowledge transfer in the organization, the organization needs to:

- Encourage knowledge transfer by introducing behavioural base incentives to motivate individual doctors to share information with their colleagues about the best practice that applies to their departmental needs. Hence, management should encourage individual doctors to attend and participate in the department's weekly meetings, which will give each doctor a platform to discuss different cases and complications. This will allow the hospital to capture experiences that can then be collected and exploited to improve the individual's performance.

CONCLUSION

Knowledge transfer plays a crucial role in the ever-changing organization where the success of the organization is significantly dependent on its ability to transfer its knowledge. The success of transferring knowledge is significantly dependent on the ability of the organization to create and shape an environment of knowledge sharing. The recommendations made, based on the results of this study, when dedicatedly and effectively implemented, can assist in this regard.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Time and resource limitations resulted in a data being collected from a sample of only 62 foreign doctors practicing in provincial hospitals in South African. Future studies may embark on drawing a larger sample comprising of foreign doctors in both the private and provincial sectors.

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