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Knowledge Sharing Among Veterinary and Medical Health Professionals on Zoonotic Diseases Control: A Social Exchange Theory Perspective

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ABSTRACT

Two constructs of social exchange theory explain the perception of veterinary and medical health professionals about knowledge sharing on zoonotic disease control. Two research questions were raised as follows: What is the perception of veterinary and medical health professionals about knowledge sharing in managing zoonotic diseases? How do the constructs of social exchange theory explain the perception of veterinary and medical health professionals about knowledge sharing in managing zoonotic disease? A qualitative method using a case study research design was used for the study. Purposive sampling technique was used to select participants for the study. Data were collected through a semi- structured interview and focus group discussion. The analysis was done using qualitative content analysis. Findings revealed that the two construct of social exchange theory “reciprocity” and “trust” explain the perception of health professionals about knowledge sharing in managing zoonotic disease.

Introduction

Zoonotic diseases are a major public health problem. These are infectious diseases from animal that affect man. These diseases are responsible for 2.5 billion cases of human illness and 2.7 million human deaths worldwide each year (Gebreyes *et al* as cited in Salyer, Silver, Simone and Barton-Behravesh; 2017). The 2015 Avian Influenza outbreak in the US has cost the poultry

industry US\$ 3.3 billion and led to the death of 48 million birds either from the flu itself or from culling (Greene, 2015; The Guardian 2015). The 2014-2015 Ebola outbreak in Guinea, Liberia and Sierra Leone led to 11,310 deaths and 28,616 confirmed cases (WHO 2016). It is worthy of note that veterinary public health is a component of public health activities devoted to the application of professional veterinary skills and knowledge in managing this disease in animals, thus reducing the spread from animals to the human population. In spite of this, the incidence of zoonotic diseases still persists since there is a limit to which the veterinary profession can reach in tackling the diseases. Hence, collaborative efforts between veterinary, medical and environmental health professionals could do much to improve human, animal health and the environment. One-way collaborative effort is made possible is through multidisciplinary knowledge sharing among these public health professionals. Multidisciplinary knowledge sharing is a social exchange processes where knowledge creation emerges spontaneously among individuals without any rules governing their behavior. Social exchange could be institutionalized and encouraged by organizations through rules, norms and values. Knowledge sharing as a social interactive process involving the exchange of knowledge, experiences and skills among professionals, organisations, friends, families, and communities (Wei, Choy, Chew and Yen, 2012). Over the years, scholars have proposed theories for studying the exchange of resources including knowledge and information. One of such theories that study knowledge as a resource for sharing in a social interactive context is Social Exchange Theory (SET). SET was introduced in 1958 by sociologist George C. Homans with the publication of his work "Social Behavior as Exchange" (Homans, 1958). Homans defined social exchange as the exchange of activity, tangible or intangible, and more or less rewarding or costly, between at least two persons (Homans, 1961). Several other exchange theorists emerged after Homans founded the theory, such as Peter M. Blau (1964), Richard M. Emerson (1976) and

Karen S. Cook (1987). The theoretical framework for this research is based on social exchange theory (SET) of Peter M. Blau (1964).

Social Exchange Theory of Blau (1964) is based on the works of George C. Homans' "Social Behavior as Exchange" (Homans, 1958) and Alvin W. Gouldner's "Norm of reciprocity" (Gouldner, 1960). Gouldner (1960) was concerned with the functionalist argument that reciprocity promotes the stability of a social system however; Social exchange theory of Peter M. Blau shifted its attention to the effects of reciprocity and trust on economic and social exchange relationships. While economic exchange is based on a formal contract that specifies the exact quantities to be exchanged, social exchange relationship is founded on implicit agreement of unspecified obligations. Thus, in contrast to economic exchange, where trust isn't essential and obligations are specified, social exchange tends to engender feelings of personal obligation, gratitude and trust (Blau, 1964). This study adopted social exchange theory of Peter Blau (1964)

Social exchange as the term is used by Blau (1964) refers to "the voluntary actions of individuals that are motivated by returns they are expected to bring and typically do in fact bring from others. Actions compelled by physical coercion are not voluntary, although compliance with other forms of power can be considered a voluntary service rendered in exchange for the benefits such compliance produces. The objective of exchange theory therefore, is to explain social life in terms of exchange principles (Blau, 1964). One of such is the principle of reciprocity.

To this end, the objectives of this study include: to ascertain the perception of public health professionals about multidisciplinary knowledge sharing in the management of zoonotic diseases and to determine how Social Exchange theory explains the perception of public health professionals about multidisciplinary knowledge sharing in the management of zoonotic diseases.

Social Exchange Theory and Perception about knowledge sharing

The key elements outlined in social exchange theory of Peter Blau (1964) are; building relationship through the exchange of tangible and intangible resources; reinforcement of relationship through reciprocation and trust as an essential ingredient for a stable relationship. These are further discussed below:

Building Relationship through the Exchange of Tangible and Intangible Resources

Homans (1961) defined social exchange as the exchange of activity, tangible or intangible, and more or less rewarding or costly, between at least two persons (Homans, 1961). In relation to social exchange, knowledge sharing is viewed as the behavior by which an individual voluntarily provides other members of an organization with access to his or her knowledge and experiences. This knowledge may be tangible/explicit or intangible/implicit. Knowledge sharing is also seen as an exchange of valuable resource between two parties which is expected to incur costs borne by the knowledge owner and bestow benefits to the recipient. An individual's motivation to share his/her knowledge would depend on his/her consideration of these costs and benefits (Cyr and Choo, 2010); and are willing to share the knowledge when the benefits of this action outweigh the costs (Krok, 2013). Furthermore, Blau (1964) found that benefits within social exchange do not have a specific quantifiable time frame, meaning that endured social patterns are created by social exchanges. Therefore, to share or not to share will largely depends on individual perception about costs and benefits, preferences about sharing outcomes, and relationship with the sharing target. Thus, in line with Blau (1964), perceptions of the benefit to the recipient from sharing knowledge will increase the tendency to share knowledge.

Reinforcement of Relationship through Reciprocation

Blau (1964) stated that the norm of reciprocity reinforces and stabilizes tendencies inherent in the character of social exchange. In essence, within a network of communities, there is a tendency towards greater collaboration and sharing; reciprocity therefore, reinforces the tendency (Choi and Berger, 2007). In view of this, reciprocity is a strong driver of knowledge sharing, where, in this context, a knowledge shared today with an individual may be followed by a request for knowledge from that individual tomorrow. Therefore, reciprocating knowledge received is most likely to reinforce and stabilizes relationship (Mergel, Lazer, and Binz-Scharf, 2008).

Trust as an Essential Ingredient for a Stable Relationship

While sharing of explicit knowledge can be easily codified and transferred indirectly through various means such as in books, reports, pictures and non-book media such as videos and tapes among others and can be transported and shared without difficulty (Awad and Ghaziri, 2007), sharing of complex tacit knowledge through the informal networks required direct interactions between two or more individuals. A direct tie with the knowledge source(s) must be built (Liebowitz 2008). In order for people to be willing to share their tacit knowledge, they must have trust. Trust is therefore, essential in the process of strengthening collaboration and knowledge sharing among the veterinary, medical and environmental health professionals in managing zoonotic diseases.

Methodology

The study adopted a qualitative research method to gain an in-depth understanding of the perception of public health professionals and how constructs of social exchange theory explain the perception of public health professionals about multidisciplinary knowledge sharing on zoonotic diseases. Purposive sampling technique was adopted in this study. This is a deliberate choice of a

participant due to the qualities the participant possesses that met some predetermined criteria that are important to the research problem (Patton, M. (2015; Etikan, Musa, Alkassim 2015).

Data Collection and Analysis

This study adopted Semi- structured interview for data collection. The words of the participants from the semi-structured interview and FGDs were recorded on an audio tape recorder and transcribed. The transcripts were analysed using thematic content analysis. All transcripts of the interviews were vigorously read and examined for phrases and sentences that form a convergence between the construct's "reciprocity" and "trust" of social exchange theory and the perception of public health professionals about knowledge sharing in managing zoonotic diseases using the analytic inductive process described by Creswell (2013). These phrases and sentences are consistent with the objectives of the study. The analysis is presented on Table 1 and the narratives that follows.

Table 1: The perception of public health professionals about knowledge sharing in managing zoonotic diseases

Objective	Categories	Sub-Categories	Freq	Percentage	
The perception of public health professionals about knowledge sharing in managing zoonotic diseases	1) Effective Management	1.2 Identify zoonotic diseases	1	2.08	
		1.3 Effective control	3	6.24	
		1.5 Break the chain of transmission	1	2.08	
		1.6 For easy diagnosis	2	4.16	
		Group Total	8	16.64%	
	2) Knowledge Gap exist	2.1 There is a limit to which the veterinary profession will be able to reach in tackling the disease conditions	1	2.08	
		2.2 Knowledge gap exist	1	2.08	
		2.5 Human doctor has a limited level of knowledge of animal diseases	1	2.08	
		Group Total	3	6.24%	
	3) Save humans lives	3.1 Lives are saved	3	6.24	
		Group Total	3	6.24%	
	Grand Total			14	29.12%

Narratives on the Perception of Veterinary and Medical Health Professionals about Knowledge Sharing in Managing Zoonotic Diseases

1. Effective Management of Zoonotic Diseases

Effective management of zoonotic diseases category (21/48: 43.75%) describes the narratives related to the perception of public health professionals about knowledge sharing in managing zoonotic diseases in Plateau state. It consists of six sub categories: Identify zoonotic disease (4/48:8.33%) effective control (12/48:25%) break the chain of transmission (2/48:4.16%). For easy diagnosis (1/48: 2.08%)

Identify zoonotic disease: This sub-category emerged as one of the perceptions of public health professionals in managing zoonotic diseases. Emerging infectious diseases often originate from animals, making it important to identify infectious agents in the animal populations for effective management. In line with this, Participant 1 puts it this way *Identifying and understanding the root and how people get infected with zoonotic diseases is important this can be done when we share knowledge*. This is important because this information provides several insights; first, it gives information on the host range and specificity of the infectious agent. Second, it provides information on the geographic distribution of the infectious agent in animals.

Effective control: Effective control sub category gives explanation on the perception of public health professionals in managing zoonotic diseases. Participant 2 narrated that *if there is going to be an effective control of zoonotic diseases, it means health professionals must have to collaborate*, in the same manner Participant 6 commented that *knowledge sharing between those that know these diseases in animals and those who are managing these diseases in humans will help in effectively controlling the infection. That's how important knowledge sharing is in mitigating zoonotic diseases*. In a similar way, Participant 9 stated that *when you share knowledge, especially in disease management, it helps in the effective control of such diseases when you share common knowledge; it creates room for effective control of such diseases in a locality*.

Break the chain of transmission - Break the chain of transmission is another sub category that explains the perception of health professionals about knowledge sharing in managing zoonotic diseases. Participant 14 said *the sole aim of knowledge sharing is to be able to break the cycle of transmission*. In addition, Participant 28 explained by saying *knowledge sharing among various health personnel is to ensure that we break the chain of transmission of zoonotic diseases*

For easy diagnosis - This sub-category emerged as one of the perceptions of public health professionals in managing zoonotic diseases. Thus Participant 4 narrated that *information sharing is key because without it, you cannot diagnose. You diagnose disease based on the history of the cases, and the clinical signs of the case, so information must flow once you don't have information; there is nothing you can do*

2. Knowledge gap exist

Knowledge gap exists category (3/48: 6.25%) includes narratives related to the perception of public health professionals about knowledge sharing in managing zoonotic diseases. This category consists of three sub-categories: there is a limit to which the veterinary profession will be able to reach in tackling the disease condition (1/48:2.08%); Knowledge gap exist (1/48:2.08%); human doctor has a limited level of knowledge in managing zoonotic diseases (1/48:2.08%)

There is a limit to which the veterinary profession will be able to reach in tackling the disease condition - This sub category explains the perception of public health professionals about the limitation the veterinarian has in managing zoonotic diseases. Participant 7 commented that: *as I have earlier explained since this disease condition occurs both in human and animals; there is a limit to which the veterinarian can be able to reach in tackling the disease condition. While he is an expert in animal disease condition, the human medical doctor is an expert in handling diseases within the human beings.*

Human doctor has a limited level of knowledge of animal diseases - This subcategory depicts narrative on the perception of public health professionals about the limited level of Knowledge of human doctors in managing zoonotic diseases. Participant 18 puts it this way;

...the human doctor has a limited level of knowledge of animal diseases; if they want to know more about these diseases, they will have to contact the people who are

really in it; like veterinarians know more about these diseases because this is their area

Knowledge gap exist - Knowledge gap exist sub category depicting narratives on the assertion that each professional has limited capacity in handling zoonotic disease cases. Participant 8 said “*knowledge gaps exist, and these gaps can only be closed when there is communication*The way zoonotic diseases occur, no single professional group will claim exclusive reservoir of knowledge of how to handle it. Also, Participant 20 has this to say *nobody knows it all if I am aware and you are not aware, and I try to enlighten you, that is part of sharing I can see there is knowledge gap outbreak of diseases that emanate among us the two professions have a say in it. The medical doctor and the veterinary doctor, if they come together, they will achieve a lot.*

Each profession is insufficient in its own capacity- This sub category expressed the fact that each of these professions has insufficient knowledge in managing zoonotic diseases. Participant 16 expressed this opinion thus, *...each profession in zoonotic disease management is insufficient in its own knowledge capacity.*

No profession is an island - This sub category expressed the fact that each of these professions has insufficient knowledge in managing zoonotic diseases. Participant 11 has this to say “*The essence and relevance of knowledge sharing hinge on the fact that no man is an island, so the professionals involved; the veterinarians and human medical practitioners even the environmental scientists are needed in this type of work.*

3. Save humans lives

Save humans lives (1/48:2.08%) captures narratives on the perception of health professionals about knowledge sharing in response to the high rate of mortality in humans and animals. It encompasses 1 sub category: Save the lives of humans (1/48:2.08%).

Save the lives of humans - this shows the narratives on the perception of health professionals on the need to share knowledge in order to reduce the rate of mortality in humans. Participant 3 responded that *it is very relevant to share knowledge, because the goal is to preserve human lives.* while Participant 17 said this, *it is very relevant to share knowledge, because give or take the goal is to save humans on the earth, and to make sure human lives are still preserved because by the time you don't share knowledge and these diseases go on, human lives are lost, animal lives are lost; and most of the time zoonotic diseases are epidemic, and it's good we share knowledge.*

Constructs of reciprocity and trust of social exchange theory explaining the perception of public health professionals about knowledge sharing on zoonotic disease

Blau's (1964) theory of social exchange suggests that reciprocity and trust influence an individual's knowledge sharing behavior. Findings of this study indicate that Blau's (1964) theory can explain perception of public health professionals about knowledge sharing in managing zoonotic diseases. For instance, Blau's concept of reciprocity refers to a set of socially accepted rules regarding a transaction which a party extending a resource to another party obliges the latter to return the favour. This definition captures three major components of reciprocity namely, obligations in exchange, expectations from exchange and benefits of exchange. These three major components are explained below in relation to the findings of this study.

Obligations in exchange. According to Blau (1964) Obligations in exchange refers to the act of giving a favor to others legally or morally. There is a moral obligation to exchange resources. Consequently, in Nigeria, Public health professionals consider knowledge sharing a moral choice on issues pertaining to management of zoonotic diseases. Moral obligation to share knowledge feature prominently as a theme in the course of interaction with participants of this study. Public health professionals felt obliged to share knowledge because they consider it a responsibility. A veterinary

health professional asserted that he has the responsibility to share knowledge with other health professionals outside his field of knowledge so that they can prevent zoonotic diseases. This response indicates that moral obligation to share knowledge is rooted in the desire to effectively manage zoonotic diseases through collaborative endeavour with other public health professionals (Refer to Table 1 and Narrative).

Expectations from exchange. According to Blau, (1964) Expectations from exchange connote future returns for contributions between exchange partners. Accordingly, in Nigeria, Public health professionals expect future contributions to knowledge from other health professionals outside their field of knowledge when they share knowledge. Expectations from other health professionals when knowledge is shared were expressed in the course of interaction with participants of this study. A medical health professional stated that he expects knowledge in return for the knowledge shared because it will help raise his intellectual capacity and develop competence in effective management of zoonotic diseases. Similarly, a veterinary health professional state that he expects knowledge in return from other health professional because this is the only way knowledge gaps in managing zoonotic diseases can be closed. (Refer to Table 1 and Narrative). This response shows that health professionals recognised the importance of the knowledge of other health professionals and taking advantage of it will lead to effective handling of zoonotic diseases.

Benefits of exchange. Benefits of exchange according to Blau (1964) are rewards and resources gained from exchange. Thus, in Nigeria, public health professionals anticipate some benefits when knowledge is shared with other health professionals. Benefits of knowledge sharing emerged under various themes during the course of interaction with participants of this study. A medical health professional stated that if health professionals share knowledge with other health

professionals outside their field of knowledge, human lives will be saved (Refer to Table 1 and Narrative).

Trust in exchange relationship. Apart from reciprocity, trust can also explain the perception of public health professionals about knowledge sharing in managing zoonotic diseases. Blau (1964) stated that trust is a necessary feature of all social relations. Trust is referred to as that willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor (Schoorman, Mayer, Davis, 2007). Trust as a theme feature prominently in the course of interaction with Participants of this study. A Veterinary health professional said that “trust is important in relationship because if there is no trust, there won’t be any relationship...if health professionals trust one another; they will be able to freely share knowledge about zoonotic diseases and how to manage it (Refer to Table 1 and Narrative). This response shows that trust increases the confidence of health professionals in the desire to share knowledge in managing zoonotic diseases.

Conclusion and implication

This study has been able to contribute to knowledge by providing empirical data and findings on how the two constructs ‘reciprocity’ and ‘trust’ of social exchange theory explain the perception of public health professionals about knowledge sharing in managing zoonotic diseases. This confirms the role of social exchange as a key theory in interpreting individual's behavior in knowledge sharing. The findings also highlights the significance of social relationships and values in understanding knowledge sharing and recommends that public health stakeholder take advantage of the positive perception of public health professionals about knowledge sharing on zoonotic diseases, by strengthening the capacities in the human and animal health sectors and also create the mechanism necessary to effectively share knowledge in order to detect and respond to emerging health threats of zoonotic diseases. The findings also established that public health professionals anticipate

benefits from knowledge sharing. Therefore, public health stakeholder should provide adequate incentive programs to motivate knowledge transfer among health professionals. These programs can focus on extrinsic rewards as remuneration, good working condition, availability of good source for information and job security.

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