

# Closing the gaps in defining and conceptualising acceptability of healthcare: A synthesis review and thematic content analysis

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## Research article

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# Closing the gaps in defining and conceptualising acceptability of healthcare: A synthesis review and thematic content analysis

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## Abstract

**Background:** Acceptability of healthcare is gaining ground in public health research and practice. Overlooking healthcare acceptability when designing, implementing, monitoring and assessing healthcare interventions may lead to those interventions failing. Despite the importance of acceptability, the public health community still has to agree on an explicit definition and conceptual framework of acceptability. We considered different definitions and conceptual frameworks of healthcare acceptability, and identified commonalities to develop an integrated definition of healthcare acceptability.

**Methods:** We conducted a synthesis review and thematic content analysis of research articles that attempt to define healthcare acceptability. We searched online databases including MEDLINE/PubMed, Cochrane Library and Google Scholar for relevant articles. The retained articles were imported into ATLAS.ti 8.4. Using thematic content analysis, we deductively and inductively coded categories and themes related to definitions and frameworks of healthcare acceptability.

**Results:** Our review of the literature described the complexity of healthcare acceptability. The concept of acceptability remains poorly defined limiting its application in public health. We propose a definition of acceptability that includes the needs and expectations of the healthcare recipient, healthcare provider as well as the capacity of the healthcare systems. We define acceptability as a multi-construct concept describing nonlinear cumulative combination in parts or in whole of expected and experienced degree of healthcare from patient, provider or health systems and policy perspectives in a given context. We provide a conceptual framework of acceptability, applicable to the public health research and practice.

**Conclusion:** We present a definition of acceptability that can be applied to different actors of public health including patients, providers, and health systems or policy. The proposed definition of acceptability, together with the conceptual framework provides a coherent conceptualisation that can be used by the broader public health community.

**Key words:** acceptability of healthcare, provider acceptability, healthcare acceptability, community acceptability, acceptability constructs, acceptability conceptual framework, public health.

## **Background**

Acceptability of healthcare is gaining momentum in the literature and is evolving as an emerging discipline of public health [1]. Healthcare acceptability has become a vital and strategic factor in designing, implementing, monitoring and assessing health systems and policy interventions [2]. Despite the importance of healthcare acceptability, the public health community is still lacking a comprehensive definition and conceptual framework of acceptability.

Acceptability of healthcare is a complex and many-sided concept describing appropriateness of healthcare [1-3]. Acceptability reflects interactions amongst patients, healthcare providers as well as health systems' managers and policymakers [1, 3]. Acceptability should thus be considered from the perspectives of all these stakeholders. Although acceptability can be approached as a stand-alone concept, it is one of the dimensions of access to healthcare [4]. Acceptability encompasses the social and cultural factors that influence access to healthcare [3, 4]

Acceptability is defined by terms conveying beliefs, perceptions, attitudes and experiences, and how these factors influence the use of healthcare services [3-5]. Healthcare users are personally influenced by interactions including shouting at, assistance, privacy, confidentiality, trust, understanding and respect. These terms often have broad meaning and overlapping values [5]. Many researchers have argued that these terms should be categorised under specific constructs of acceptability based on the best-fit theory [1, 3, 5].

Given the broad meaning of terms associated with human interactions and perceptions, the concept of acceptability in healthcare remains poorly defined [1, 2]. Existing literature also reveals a poorly defined conceptual framework [1, 2, 6]. The lack of clarity makes it difficult to implement the concept of acceptability especially from a health systems and policy point of view. There is also little research investigating acceptability from healthcare providers' perspectives, indeed most publications approach acceptability from patients' perspectives [1, 2, 5].

In an effort to create a workable definition and framework of healthcare acceptability for the public healthcare community, we explored existing definitions and conceptual frameworks of healthcare acceptability. Specifically we (1) explore and describe the complexity of acceptability within the context of access to healthcare; (2) re-examine and clarify the context and semantic domains of acceptability of healthcare to inform its definition and (3) review and elucidate the conceptual framework of acceptability of healthcare and its interpretation.

## **Methods**

We conducted a literature review to identify articles on acceptability of healthcare [7]. In this case, we searched MEDLINE/PubMed, Cochrane Library and Google Scholar databases for relevant papers, using acceptability of healthcare as keywords. The database search was refined by adding terms such as concept, conceptualisation, construct and framework in various combinations. Using a snowball strategy, we checked the reference lists of retrieved papers to identify additional documents.

We included only full-text English documents that were freely available or accessed via the University of Pretoria Library Portal. Following retrieval and selection of appropriate research articles, we analysed the content using a qualitative thematic content approach [7]. All retained articles were imported into ATLAS.ti 8.4 and deductively and inductively analysed to develop a preliminary coding system.

To ensure validity, the researchers discussed the preliminary coding system; revised the system twice until a final coding system was adopted. The researchers assessed the intra-coding reliability for the first five coded documents and there was a perfect agreement (100%) in length and location for the relevant codes [8]. The research

has been approved by the Faculty of Health Sciences Research Ethics committee (Ethics reference No: 547/2019).

We performed a stakeholder analysis to identify networks of actors that have a vested interest in a coherent definition and framework of healthcare acceptability [9]. Actor-networks theory was applied to make sense of identified interconnections and to decide which actor had the largest vested interest [10].

## **Results**

The main themes emerging from this literature review and thematic content analysis firstly consisted of acceptability with the context of access to healthcare. Secondary, emerging themes were about complexity, context, semantic domains and definition of acceptability. Then, acceptability conceptual framework together with its interpretation and application were the last key themes to emerge from this study.

### **Acceptability within the context of access to healthcare**

The concept of access to healthcare was introduced in health literature around the early 1970s [11]. Different researchers have recognised the complex nature of access to healthcare. Many authors have contemplated that the definition of access to healthcare should be beyond simply travelling to the health facility. In fact, some authors have theorised access to healthcare as a “functional relationship” between people and medical facilities providing healthcare [11, 12]. Acceptability of healthcare was also thought to encompass enablers and barriers for the people benefiting from available healthcare [11, 12]

Though access to healthcare was initially understood as a complex concept, specific dimension(s) were not ascribed to this concept in 1971. It took about five years for “financial accessibility” and “physical accessibility” to be recognised as two dimensions of access to healthcare [13]. Since then, various authors have attempted to improve the definition and conceptual framework of access to healthcare with a variety of definitions and frameworks [14, 15]. Very recent literature on access to healthcare, published within the last three years (after 2017), have been inspired by one of the following four conceptual frameworks:

1. Seven-dimension Framework of Access to Primary Healthcare (PHC) including (1) Availability; (2) Geography; (3) Affordability; (4) Accommodation;

(5) Timeliness; (6) Acceptability; and (7) Awareness [14]. Dassah et al [16] applied this framework to explore the factors affecting access to primary healthcare for persons with disability. They also looked at how this framework can inform policies, clinical practices and future research projects [16].

2. Five-dimension Framework of Access to Healthcare comprising (1) Approachability; (2) Acceptability; (3) Availability and Accommodation; (4) Affordability; and (5) Appropriateness [15]. Anto-Ocrah et al [17] applied this framework to develop an adapted framework for integrating emergency medicine with maternal health to reduce the maternal mortality in sub-Saharan Africa.
3. Four-dimension Framework of access to healthcare consisting of (1) Availability; (2) Accessibility; (3) Acceptability; and (4) Quality [18]. This framework is particularly interesting because it reflects the idea of right to health. It has been endorsed and adopted by the United Agencies such as World Health Organisation and the United Nations Populations Fund. Horner et al [19] used this framework to explore barriers and strategies for addressing the acceptability and quality of the maternal health workforce.
4. Tri-demensional Framework of Acces to Healthcare containing (1) Affordability; (2) Availability; and (3) Acceptability [4]. Bucyibaruta et al [1] applied this framework but focussed on acceptability dimension to assess patients' perspectives of acceptability of Anti Retroviral Therapy, tuberculosis and maternal health services in a subdistrict of Johannesburg.

It is beyond the scope of this paper to discuss the definition of access to healthcare and different conceptual frameworks, but it is important to note that acceptability is included in all of these aforementioned frameworks of access to healthcare. Therefore, acceptability is widely recognised as one of the different dimensions of access and it should be considered within the context of access to healthcare[4, 14, 17, 20].

### **Complexity of acceptability**

Some authors have referred to acceptability of healthcare as a unitary construct [2] without clearly integrating the different elements or constructs of acceptability [1]. Other authors have used the terms such as acceptance, satisfaction, feasibility,

enjoyment and uptake as proxies for acceptability [6]. There is growing support that these proxy terms are different to the concept of acceptability [2].

Acceptability was first introduced in the literature as a complex concept describing the best fit between the healthcare expectations of the patient and the healthcare system [12]. Subsequently, many researchers have expanded on the original definition of acceptability provided by Penchansky and Thomas in 1981. Acceptability was later referred to as socio-cultural acceptability [21]. Later on, Gilson proposed three elements of acceptability namely patient-provider, patient-health service organisation and patient-community interactions [3]. More recently Sekhon and colleagues defined acceptability as *“a multi-faceted construct that reflects the extent to which people delivering or receiving a healthcare intervention consider it to be appropriate, based on anticipated or experienced cognitive and emotional responses to the intervention”* [2].

Acceptability of healthcare remains a complex, poorly defined concept which is often misapplied in public health. Table 1 summarises the various definitions of the constructs of healthcare acceptability published between 2016 and 2020.

### **Context of acceptability**

Most of the articles we reviewed emphasised that acceptability of healthcare could only be interpreted effectively if the context was considered [1-6]. However, the context of acceptability was seldom clearly described in most of the reviewed studies. The reviewed articles showed that the context of acceptability goes beyond the setting and population, embracing the content, scope and focus of acceptability.

The articles we reviewed adequately outlined the setting, population and content of their analyses related to healthcare acceptability. Setting often referred to geographic location such as rural, urban, Sub-Saharan region, developing or developed countries, etc. The population could be seen as participants in healthcare intervention such as pregnant women, disabled people, children, patients living with chronic conditions, etc. The content could be understood as acceptability of a specific healthcare intervention such as maternal and child, HIV, PMTCT, TB, and non-communicable diseases.

**Table 1: Definitions of acceptability of healthcare constructs from reviewed articles**

<b>Author</b>	<b>Constructs</b>	<b>Definition</b>
<b>Dayer et al [5]</b>	Experiential	Meeting patients' expectations by their experiences of care
	Social/Legitimacy	Services legitimacy including ethical principles, values, rules and regulations
	Effective Attitude	How an individual feels about intervention
	Burden	The perceived amount of effort that is required to participate in the intervention
	Ethicality	The extent to which the intervention has good fit with an individual's value system
<b>Sekhom et al [2]</b>	Intervention Coherence	The extent to which the participant understands the intervention and how it works
	Opportunity Costs	The extent to which benefits, profits, or values must be given up to engage in the intervention
	Perceived Effectiveness	The extent to which the intervention is perceived to be likely to achieve its purpose
	Self-efficacy	The participants' confidence that they can perform the behaviour(s) required to participate in the intervention
	Patient–health provider interaction	The relationship between the patient and health provider, which is understood through the expectations and beliefs from one toward another
<b>Bucyibaruta et al [1]</b>	Patient–health service interaction	The experiences lived by a patient when seeking health services and their perceptions about health service organization and delivery, including the length of queues, facility cleanliness and opening hours
	Patient-community interaction	The patient is not isolated but lives in a family and in a community with relatives and friends who might positively or negatively influence the patient's acceptability of health care. This element draws attention to the roles of family, friends and community often not emphasised enough in understanding the acceptability of health services to patients

However, most of the studies we reviewed grappled to define the scope and focus of healthcare acceptability. Those articles used one of two theories defining the scope of acceptability of healthcare. Acceptability was either referred to as a unitary [23] or a multi-construct concept [2]. The researchers who approached acceptability as a



unitary construct provided a unitary definition and those who approached it as a multi-construct offered a multi-construct definition [6]. All the researchers who used a multi-construct concept used different definitions for acceptability of healthcare [1, 2, 5]. Some authors identified and described two constructs of acceptability [5], others three [1, 3] and others seven constructs [2].

With regard to the focus, many researchers approached acceptability of healthcare from patients' perspectives [1, 2, 5]. Some articles mentioned acceptability from health providers' point of view but did not clearly explain how to apply their definition in practice [2]. Few articles considered acceptability of healthcare from a health systems and policy (decision makers or managers) perspective.

### **Semantic domains of acceptability**

The concept of acceptability of healthcare is broad [5] and encompasses components with overlapping meanings [2]. Many researchers suggest using best-fit theory to assign components into the most appropriate constructs [1]. This means that one component only should be used to describe no more than one construct. The components used to describe the constructs of acceptability should thus remain mutually exclusive.

Much confusion surrounding healthcare acceptability arises from the use of synonymous terms describing acceptability. For example the term "multi-dimensional concept" has been used to refer to both "Access" and to "Acceptability" [4, 22]. While it is linguistically correct to describe both "access and acceptability" by using synonymous words such as "multi-dimension" or multi-construct", it could potentially create confusion in this context. Acceptability is considered as one of the dimensions of access [1, 4, 15]. Thus, access and acceptability are not at the same level of complexity and should not be defined using synonymous terms. We call for a stricter designation of terms used to describe acceptability.

Acceptability is described as a multi-levelled or multi-layered complex concept [5]. However, few papers describe the various levels of complexity of acceptability. Several authors agree that acceptability is one of the dimensions of access [1, 4, 15]. We have thus chosen the term 'dimension' to define the highest or macro level describing acceptability. Various authors agree that acceptability is also a multi-construct concept [1, 2, 5]. The term 'construct' has been chosen to describe the

medium or meso level explaining the specific constructs of acceptability. However, there is lack of agreement on the number and type of acceptability constructs [1, 2, 5]. Nonetheless, three constructs or elements of acceptability suggested by Gilson [3] and later confirmed by Bucyibaruta and colleagues [1] were maintained in our definition. Those constructs were retained because they fully explain acceptability when considered together and in different combinations. They consist of patient-provider, patient-healthcare and patient-community interactions. We prefer the term 'component' to label the unitary or micro level relating to individual information or variables explaining acceptability.

### **Definitions**

Multiple definitions of acceptability in the literature were reviewed and they all appeared to describe different aspects within the continuum of acceptability (component, construct or dimension) [5, 6], with no clear-cut definition [1, 6]. Theories used to define acceptability are often drawn from different disciplines especially social sciences, health psychology, health economics and public health [4-6]. When carefully analysed, those theories are complementary and explain the heterogeneous nature of a complex concept such acceptability. We suggest that a definition of acceptability of healthcare be based on two critical issues: 'acceptability of what and acceptable to whom?'

### **Acceptability of what?**

The theory of complex systems, including mathematic modelling, proposes that we define acceptability as a complex phenomenon either from microscopic or macroscopic levels [23]. The theory of complex systems is best suited to describe part or whole of hierarchical constructs for any given phenomenon deemed to be complex [24]. Complex phenomena involve many constituents or parts that are autonomous yet interdependent, obeying certain rules and interactions – linear or nonlinear- to create the whole structured organisation [24].

Linear interactions lead to additive effect with the outcome of the sum greater than the effect of separate parts, while nonlinear interactions lead to non-additive effect where the sum amounts to greater or lesser effect than separate parts [24]. Acceptability would follow nonlinear interactions rules as different components might explain opposing directions of acceptability; either positive (acceptable) or negative (unacceptable). Application of theory of complex systems allows us to appreciate the

heterogeneity of acceptability definitions at micro, meso or macro levels and any interval between them. Therefore giving insight into responding to the question: Acceptability of what?

The definition of acceptability should effectively describe the nature of relationships (acceptable or unacceptable) between one actor and the rest of the involved actors. This reflects multiple definitions of acceptability identified in the literature [1, 2, 5]. What is missing is a more explicit and systematic definition of acceptability to clearly describe what is acceptable or unacceptable. We argue that one way of tackling this problem is to define acceptability of healthcare at micro, meso or macro levels.

The definition of acceptability at macro level should encompass all relationships observed within the acceptability concept. This entails describing patient-provider, patient-healthcare or patient-community interactions in their different possible combinations to obtain one cumulative result [1, 3].

The definition of acceptability at meso level should clarify relationships related to one specific construct of acceptability either patient-provider, patient-healthcare or patient-community interactions [1, 3]. Acceptable or unacceptable patient-provider interactions are referred to as “*provider acceptability*”. Acceptable or unacceptable interaction between the patient and health system and policy are referred to as “*healthcare acceptability*”. Acceptable or unacceptable interactions between the patient and the community are referred to as “*community acceptability*”.

The definition of acceptability at micro level should describe any given component of acceptability taking into consideration its broad meaning [5]. Intermediary levels could be defined for practical considerations. When the interest is drawn at fewer components than necessary number of components to make up a construct; then the term of ‘sub-construct’ level should be used. The term of ‘sub-dimension’ should be applied when the focus of acceptability is on two constructs rather than all three constructs altogether defining acceptability.

### **Acceptable to whom?**

Many authors agree that one of the best ways of approaching acceptability is from patients, healthcare providers or health system managers or policy makers’ perspectives [1, 2, 25]. Few articles clearly describe how acceptability could be

approached from health system managers and health policy makers' perspectives. Most articles described acceptability from the patient's perceptions [1, 2, 25]. We propose using stakeholder analysis and actor-network theories to best answer the question: Acceptability to whom?

The stakeholder analysis is a process of thoroughly collecting and investigating information to decide whose interests matter the most when developing, implementing or assessing health policy or programmes [9]. Network theory describes how interconnections within a complex phenomenon can be used to gather and analyse the most relevant information to decide particular interest of any stakeholder [24]. The actor-network theory helps to make sense or logic of identified interconnections which are more powerful than the force of those networks [10].

In this review, we put ourselves into the shoes of different public health researchers and practitioners to provide more insight into the retained construct of acceptability. We labelled acceptability by the name of actor from whom another actor (in this case the patient) is describing the nature of interactions between them either as acceptable or unacceptable.

*“Provider acceptability”* refers to acceptable or unacceptable patient-provider; provider–provider and healthcare–provider interactions from patient, provider and healthcare manager or policymaker viewpoints respectively. *“Healthcare acceptability”* refers to acceptable or unacceptable patient- healthcare manager or policymaker, provider–healthcare manager or policymaker and healthcare–healthcare manager or policymaker interactions from patient, provider, and healthcare standpoints respectively. *“Community acceptability”* refers to acceptable or unacceptable patient-community, provider–community and healthcare–community interactions from patient, provider and healthcare perspectives respectively.

Building on existing literature and having explored the context as well as the basic theories helping to unpack the complexity and semantic domains of acceptability, we propose a comprehensive definition of acceptability. Thus, acceptability could be defined as *‘a multi-construct concept describing nonlinear cumulative combination in parts or in whole of expected and experienced degree of healthcare from patient, provider or health systems and policy perspectives in a given context.’*

## **Conceptual framework**

Acceptability of healthcare is thought to be poorly conceptualised [1, 2, 5]. The articles in this review did not offer a shared framework of acceptability [1, 2, 5]. Though acceptability is widely believed to reflect patient, provider and health systems or policy views [2, 25], almost all frameworks have approached acceptability of healthcare from the patients perspective [1, 2, 5]. Figure 1 illustrates our conceptual framework of acceptability which is based on our proposed definition of acceptability.

## **Interpretation of Acceptability of Healthcare Conceptual Framework**

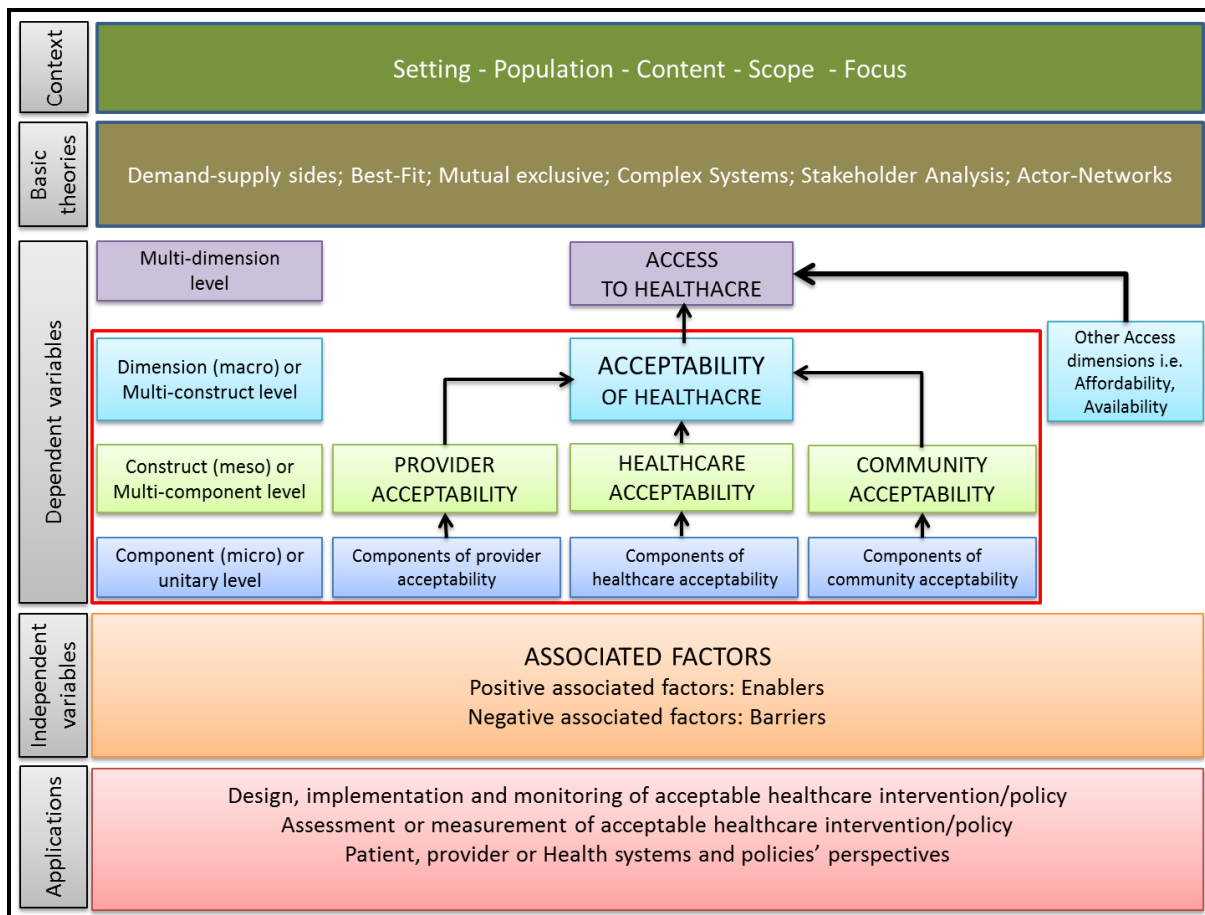
Different interpretations of conceptual frameworks may affect the use of acceptability as an important indicator in public health systems and policy [1, 6]. Therefore, we provide a guide for interpreting our conceptual framework of acceptability enabling the public health community to use our framework. Our interpretation guide highlights key information to create a shared understanding allowing users to apply it in a more confident way. While this framework is open to creativity and innovation, it is also resolute on the rigour required for both qualitative and quantitative designs of research on acceptability.

Suggested approach to our conceptual framework is based on five essential features: (1) context, (2) basic theories, (3) dependent variables, (4) independent variables and (5) applications of acceptability in public health.

Context of acceptability as well as basic theories have been explained in detail. As a reminder, the context of acceptability consists of setting, population, content, scope and focus. The basic theories to gain a shared understanding of acceptability include demand-supply sides, best-fit, mutual exclusivity, complex phenomenon, stakeholder analysis and actor-network.

Dependent variables include a set of elements that define acceptability of healthcare. Those elements include different components that comprise provider, healthcare and community acceptability and together define acceptability of healthcare. Those components are selected based on the focus of acceptability either from patient, provider or healthcare viewpoints. At the level of dependent variables only descriptive statistics such as comparisons are possible [7]. In other words, inferential statistics such as regression analysis are not possible at this level [7].

From the patient’s perspective, dependent variables would refer to components depicting provider, healthcare and community acceptability through the lens of the patient. Components characterising provider acceptability indicate any information describing the relationships between patients and healthcare providers such as shouting, confidence, privacy and empathy [1, 3]. Components describing healthcare acceptability imply any information explaining the patients’ experiences and perceptions about healthcare organisation and delivery such as ethicality, efficacy, long queues and operating hours [1, 2]. Components depicting community acceptability denote any information illustrating support from family, friends and community at large [1, 3].



**Figure 1: Conceptual Framework of healthcare acceptability**

From the provider’s perspective, dependent variables would include components characterising acceptability from the provider’s viewpoint. Components illustrating provider acceptability would be any information showing the support from other health providers including acceptance and feeling part of the team, team copying

skills and friendships [26]. Components defining healthcare acceptability would be any information related to conducive working conditions and supervisor/administrative support leading to job satisfaction [27]. Components identifying community acceptability would be any information portraying understanding and support from the patient, patient's family or their own family to the provider when it is most needed like when breaking bad news [28].

From the healthcare perspective, dependent variables would include components characterising provider, healthcare and community acceptability from a health systems and policy standpoint. Components characterising provider acceptability would be any information referring to enthusiasm and motivation of healthcare staff to specific healthcare delivery or policy implementation [29]. Components describing healthcare acceptability would be any information related to feasibility and success of specific health priorities and strategic plans as well as associated cost-effectiveness within larger integrated health systems [30]. Components explaining community acceptability would be any information pointing to compliance by patients and the community at large. This is possible when health systems and policy are imbedded in community cultures, values, preferences and expressed needs [30].

Independent variables could be understood as elements that are not part of acceptability definition but can or have proved to have significant impact on it either positively or negatively [7]. Independent variables could therefore be seen as factor or predictor variables associated with acceptability of healthcare [7]. Therefore both descriptive and inferential statistics are possible at the level of independent variables [7].

Independent variables could refer to demographic and socio-economic status of the population; such as age, gender, marital status, education level and poverty [7]. Most of the elements mentioned in the context section for interpretation of this framework could also be considered as independent variables if they are not taken into account in the context. For example, if the context is about a country, then urban and rural settings could be considered as independent variables. If the context talks about global acceptability of a specific health intervention, then developing and developed or specific countries could be considered as independent variables.

## **Applications**

The proposed framework was designed to be flexible and adaptable to various elements. The framework is also quite open to accommodating potential additional elements through future research either as supplementary contextual elements, novel theories or specific applications. The essential added value of this framework is to clarify the description of acceptability of healthcare from patient, provider or healthcare outlooks. In addition, this framework provides practical and targeted application for assessing acceptability either at micro, meso or macro levels. In line with Sekhon and colleagues regular data collection on acceptability through national surveys or cohort studies will allow us to assess retrospectively, concurrently or prospectively acceptability of healthcare [2]. We hope that a distinctively enunciated conceptual framework would inform unbiased assessment of acceptability and create consensus on acceptability definition and its conceptualisation among public health professionals.

## **Discussion**

In this paper, we present a coherent definition of healthcare acceptability, which we converted into a conceptual framework. We considered acceptability within the context of access and, as a multi-construct, complex concept. Our literature review confirmed that imprecise definitions of acceptability and not having a coherent conceptual framework have hindered the application of health acceptability in health systems and policy.

Our findings agree with other publications describing acceptability as a dimension of access to healthcare [15-17]. This is particularly important and could help in resolving some misunderstandings surrounding the definition of acceptability. Ignoring acceptability as a facet of access to health care would probably result in using some components that are better suited to describing other dimensions of access. This has been noted in Sekhon and colleagues' theoretical framework of acceptability (TFA) considering "*Opportunity Costs*" among the seven constructs of acceptability [2]. "*Opportunity Cost*" was defined as "*the extent to which benefits, profits, or values must be given up to engage in the intervention*" [2]. One could argue that the construct of "*Opportunity Cost*" would be best-fit into the dimension of affordability also called financial access [4].



The findings from this review supported the claim of acceptability of healthcare as a multi-construct concept [1, 2, 5], even though not all articles agreed on the number and types of acceptability constructs [1, 2, 5]. We propose that definitions of acceptability retain the constructs or elements of acceptability suggested by Gilson [3] later confirmed by Bucyibaruta and colleagues [1]. These constructs offer a holistic explanation of acceptability, and include patient-provider, patient-healthcare and patient-community interactions. Those constructs are also called provider acceptability, healthcare acceptability and community acceptability respectively. Most articles reviewed here only described specific aspects of acceptability such as relationships between patient or participant and intervention [2] and missed some key aspects of acceptability such as the community component [2, 5].

This review aligns with descriptions of acceptability as a multi-level complex concept [5]. Usually there are too little data describing the levels of complexity for acceptability leading to inconsistent definitions. This review added to existing literature in describing the semantic domains of acceptability corresponding to their level of complexity. The semantic domains include 'dimension' corresponding to the highest or macro level of acceptability, 'construct' corresponding to medium or meso level of acceptability and 'component' corresponding the lowest or micro level of acceptability. The constructs of acceptability should be mutually exclusive i.e. no component should be used to explain more than one construct of acceptability which is defined by broad and often overlapping components [2, 5].

Our findings agree with other studies which declared a lack of clear-cut definition of acceptability [1, 5, 28]. However, the application of complex system theories such as mathematic modelling of complex phenomenon, stakeholder analysis and actor-networks would provide insight in defining acceptability of healthcare at macro, meso and micro level. A comprehensive definition should consider patient-provider, patient-healthcare and patient-community relationships. Accordingly, acceptability of healthcare was defined as: *“A multi-construct concept describing nonlinear cumulative combination in parts or in whole of expected and experienced degree of healthcare from patient, provider or health systems policy makers in a given context”* which informed the development of acceptability conceptual framework.

The results from this review corroborated with the lack of shared interpretation of acceptability frameworks reported in the published literature [1, 2, 6]. Lack of common understanding of acceptability frameworks significantly hampers the use of such frameworks in health systems and policy. Therefore, we suggested a systematic way of interpreting an acceptability conceptual framework based on five essential features. Those features include: (1) context, (2) basic theories, (3) dependent variables and (4) independent variables of acceptability of healthcare, and (5) application of acceptability conceptual framework in health systems and policy.

### **Limitations**

While everything was done to ensure internal validity, external validity fell short in this paper. In fact, independent review of included literature was not done. We did not assess inter-coding agreement. The proposed conceptual framework of acceptability has not been validated and adopted by any public health experts on this topic except the authors of this paper. Moreover, this paper does not offer practical ways to measure acceptability of healthcare. We believe this paper provides substantial information contributing toward forging consensus on the concept of acceptability among public health researchers and practitioners.

### **Conclusion**

Public health researchers are increasingly recognizing the growing role of acceptability of healthcare in designing, implementing and assessing health interventions, but are hampered by the lack of a coherent definition and framework of acceptability.

Our literature review revealed that certain authors do not consider acceptability to be a facet of access to healthcare. Another barrier to defining acceptability, is that authors do not agree on the complexity of acceptability, with some considering acceptability as unitary construct whilst others seeing it as a multi-construct concept. These inconsistencies create confusion and limit application of the concept.

Drawing on existing literature, we suggested acceptability be defined as *‘a multi-construct concept describing nonlinear cumulative combination in parts or in whole of*

*expected and experienced degree of healthcare from patient, provider or health systems and policy perspectives in a given context.*' This definition was guided by application of the complex system such as mathematic modelling of complex phenomenon, stakeholder analysis and actor-networks theories together with other theories applied by other researchers in published literature.

Finally, we proposed a conceptual framework of acceptability that will allow any researcher, health policymaker and health programme manager to understand and apply the concept of acceptability. The proposed definition of acceptability together with interpretation guide of its conceptual framework will facilitate convergence toward consensus of its definition among wider community of public health. It will also increase its relevance in designing, implementing or assessing any health intervention.

### **List of abbreviations**

ART: Anti-Retroviral Therapy

MEDLINE: Medical Literature Analysis and Retrieval System Online

PHC: Primary Healthcare

PhD: Philosophiae Doctor

PMTCT: Prevention of Mother-To-Child Transmission

PubMed: Public/Publisher MEDLINE

TB: Tuberculosis

TFA: Theoretical Framework of Acceptability

UNFPA: United Nations Fund for Population Activities

WHO: World Health Organisation

### **Declarations**

#### **Ethics approval and consent to participate**

The research was approved by the Faculty of Health Sciences Research Ethics committee with Ethics reference No: 547/2019.

### **Consent for publication**

Not applicable

### **Availability of data and materials**

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

### **Competing interests**

The authors declare that they have no competing interests

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### **Authors' contributions**

Joy Blaise Bucyibaruta is the principal author. He designed and carried out the literature review. He developed the preliminary coding system and drafted initial manuscript. Annatjie van der Wath participated in the revision of coding system. Doriccah Peu and Lesley Bamford approved the final coding system. All authors revised the manuscripts for academic satisfaction and approved the final manuscript for publication submission.

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# Figures

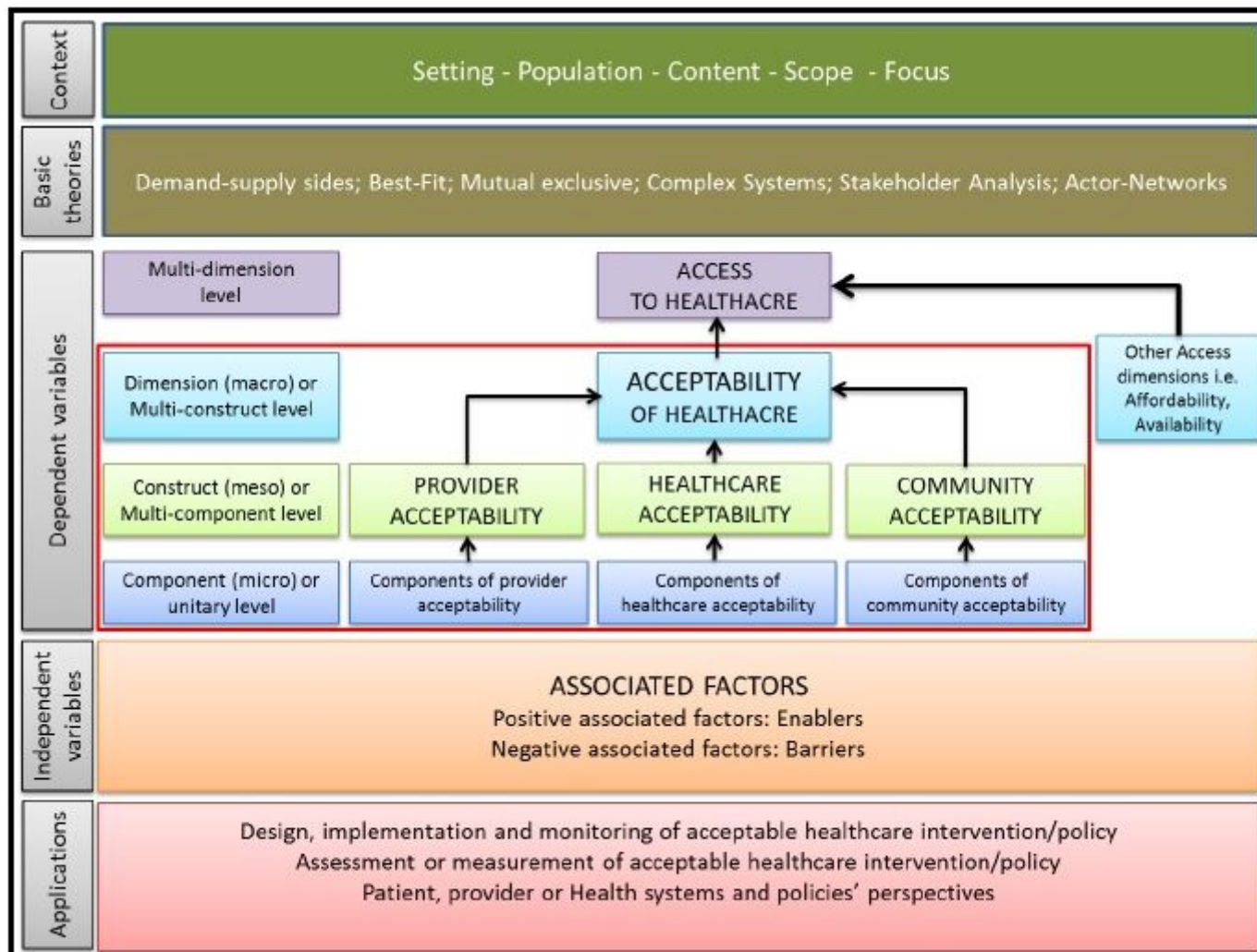


Figure 1

Conceptual Framework of healthcare acceptability

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