MEDICAL TEACHERS' AND UNDERGRADUATE MEDICAL STUDENTS' PERCEPTIONS OF ROLE MODELS IN MEDICAL EDUCATION

By: - DR. FASIKAWIT ENGIDA

A thesis submitted to College of Health Sciences, Addis Ababa University in partial fulfillment of master of science degree in Health Sciences Education.

Advisors: -: Prof. Amha Mekasha

Dr. Laura Dempster

Dr. Robert Paul

July 2020

Addis Ababa University

School of graduate studies

This is to certify the thesis prepared by DR. FASIKAWIT ENGIDA entitled “Medical teachers’ and undergraduate medical students’ perceptions of role models in medical education” and submitted in partial fulfillment of requirements for the degree of masters of sciences in Health Sciences education complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by examining committee

External examiner:	Signature	Date
Internal examiner:	Signature	Date
Advisor:	Signature	Date

Medical Teachers' and Undergraduate Medical Students' Perceptions of Role Models in Medical Education

In

Addis Ababa University

College of Health Sciences

School of Medicine

By: Dr. Fasikawit Engida

Abstract

This paper focuses on role model and role modeling impact on undergraduate medical students and medical teachers encountered in the School of Medicine, College of Health Sciences at Addis Ababa University. To become successful in their education path and future endeavors, academic members have to proceed with extensive phases with several potential role models. Students and teachers agreed on the lack of a positive influence in terms of integrity, respect, and motivation. The paper analyzes a highly unpopular topic that silently affected the academic member morale and efficiency. It incorporated different hypotheses toward role-modeling assessed from the formal and informal study. The study identified two-perception phases: teachers, and students; with a precise analogy of positive modeling, negative modeling, and role modeling. Based on the causes and effects emphasized in the paper, the appointed problems were not adequately addressed earlier. The difficulties might continue and harm the audacity of the students and teachers to join the medical school when the country's demand rises.

Keywords: Role Model, Positive Model, Negative Model, Role Modeling

Table of contents

Acknowledgment

First of all, I would like to praise God almighty. I thank my local advisor, Prof. Amha Mekasha for his in-depth and thorough guidance and feedback throughout the completion of this study. I would also like to thank Dr. Laura Dempster and Dr. Robert Paul from University of Toronto for their timely and insightful feedback.

I am grateful to all the participants of this study. I would also like to thank Dr. Yared Gebermeskel for organizing participants and venues for the study.

Finally, I would like to express my heartfelt gratitude for my parents, brothers & sisters, and close family for their unwavering support. I am truly blessed.

Introduction

Human beings learn necessary survival skills and language through observation and modeling. Individuals imitate behaviors of parents, siblings, teachers, and community leaders to praise or to scold. Through this mental process, learning and adjustment to their environment occur. Modeling describes learning or acquiring new information, skills, or behavior through observation rather than through direct experience or trial-and-error efforts. Learning is viewed as a function of observation rather than direct experience (Holland & Kobasigawa, 1980). Researches have shown that modeling is an effective instructional strategy in that it allows students to observe the teacher's thought processes. Using this type of instruction, teachers engage students in imitation of particular behaviors that encourage learning. The observational skill and the act of modeling take different forms. Through modeling frequency of previously learned behaviors can be influenced, or new behaviors can be learned, or even modeling can encourage previously forbidden behaviors (Bandura A, 2006b).

Modeling can influence education outcomes, particularly in disciplines that require longer contact hours between learners and teachers. Notably, medical education can significantly benefit from it. Medical schools expected to produce competent, skillful, devoted, and kind physicians. Curriculums' around the globe are designed to meet those expectations. Even though they strive to achieve them through the creation of a written curriculum, they also must recognize that other forces are acting upon the learners in the form of what is called the "hidden curriculum" (Lempp H & Seale C, 2004). The hidden curriculum is a concept identified by educational researchers to describe the informal educational forces acting upon learners outside of the formal classroom, forces that act upon and influence their professional identities (Cribb A & Bignold S, 1999). This concept has been argued to affect student behavior (s) and their professional integrity outside of formal educational activities. In informal conversations with their professors in elevators, in the observations of clinicians as they perform their duties and arguably in the varied interactions learners have with their formal and informal mentors. It is a relationship between hidden curriculum and role modeling that this research explores focusing on the research gaze on the early stage of medical education when undergraduate medical students are establishing their academic careers and the foundation (s) of the professional identity.

During clinical training, students undergo a process of professional identity formation (Hafferty F, 2006) as they learn the 'rules' of the new community of practice they are joining. (Lave J and Wenger F, 1991). A hidden curriculum is argued to influence this process as students navigate their educational journey and study subjects such as ethics and professionalism (Steinert Y,2009) (Cruess RL& Cruess SR,2006).

The hidden curriculum mentioned above can be defined as a set of unwritten, unofficial, and unintended lessons, values, and perspectives that students learn in medical school and more formal aspects of education (Lempp H, Seale C, 2004). These effects act upon teachers and learners in the context of both

the formal and informal curricula. Hidden aspects of the curriculum are essential in professional education, including long periods of contact with the predominant culture (Cribb A, Bignold S, 1999; Bloom SW, 1972). Hidden curriculum explains what is implicit and embedded in educational experiences in contrast with the formal statements about curricula and the surface features of educational interaction' (Sambell and McDowell,1998). It is impossible to extirpate the teacher and student from the learning equation. This overlooks both parties' unique individual features, their experiences and relationship, differences in learning contexts (Saari 2016; Kohlberg and Mayer,1972), and the rich diversity of unexpected, 'collateral learning' that can, therefore, result from the encounter between a teacher, a curriculum and a student (Dewey 2007).

The existence of the hidden curriculum has been argued to play a critical role in students' professional identity formation and potentially contribute to a value conflict that students can encounter in a clinical setting. There is a gap between what students knew before entering university, what they learn during pre-internship, and the reality of the internship phase, which creates a contradiction in value. The reason for this contradiction can be the conflict between formal learning and students' perceptions of the real environment as well as between speech and the behavior of faculty members. Therefore, students receive sophisticated directions, which lead them to confusion in their roles. It is heavily influenced by the often non-overt attitudes and behaviors of peers and teachers. There is a potential for learners to have a struggle between the process of becoming a genuine professional and what is necessary to 'fit' into a new environment.

Medical schools in Ethiopia are booming at an alarming rate to counteract the shortage of physicians, which could be attributed to a combination of the limited number of medical schools, brain-drain, poor motivation and retention, and internal displacement of physicians. The high annual attrition rate, fast population growth, governmental and nongovernmental health institution expansion, low production, and increased postgraduate enrollment in the last 3-4 years contributed to a meager physician-to-population ratio in Ethiopia. Studies also show other countries like Nepal, Bhutan, Papua New Guinea, Afghanistan, Cambodia, seriously lack doctors, but the problem is especially severe in sub-Saharan Africa. Although many of these countries have made considerable efforts to train local doctors, the rate of loss by migration often outstrips production. In sub-Saharan Africa, 24 of the 47 countries have only one medical school; 11 have no medical school at all (Hagopian A, 2004). Migration, at least in the context of Africa, is nearly always towards a country with more doctors than the source country. The medical carousel of doctors continuously rotates to countries offering a better standard of training, more attractive salaries and working conditions, and a higher standard of living (Naicker et al, 2009). Although the Ethiopian government and private sector worked and achieved much on health infrastructure construction and midlevel health professionals training, it does not appear that the medical doctor's retention mechanisms are sorted out so far (Berhan Yifru, 2008).

The effects of this demand are strongly felt in Ethiopia. Responding to these demands, the School of Medicine at Addis Ababa University in the College of Health Sciences has had to triple its intake capacity in recent years. This expansion of enrolment has been challenging as it has had to be done by faculty, resource and infrastructure have remained relatively unchanged. This increased demand has also resulted in increasing diversity in the students admitted as the School of Medicine has enrolled undergraduate medical students from every part of the country. This has resulted in a student group with increased diversity in culture, ethnicity, religion, economic, and social upbringing. And, with that increased diversity comes with a more varied perspective on academic, social obligations and roles. The importance of producing health professions using health professionals' curriculum who have a shared and common sense of professional duty and identity, implementing modeling, and the hidden curriculum is vital.

These observations also endure when applied to the diverse medical teachers at the school as they have vast variations in age, gender, ethnicity, years of experience, and medical expertise. These same medical educators have also observed the school revolutionize, a process that is likely to have had effects on them and their understanding of what it is to be a clinician and an educator in Ethiopia. Through their years of service, they will have learned skills, knowledge, and behavior through observation of individuals, through modeling their behavior from their observations of these changes. These observations can be expected to flow through them, to be what they are modeling to their undergraduate medical students and each other.

This study will investigate the relationship between role modeling and role models in the hidden curriculum by exploring the perceptions of undergraduate medical students and medical teachers' role models for undergraduate medical students.

Literature review

Based on my review of the literature, there is limited scholarly focus on these relationships and concepts. Several bodies of work identified are essential to consider in the context of this work.

First, some studies suggest that medical trainees take an active role in improving their clinical competence through educational sessions during which clinical trainers act as teachers, as well as through actively responding to the feedback they receive from clinical trainers acting as mentors (Elzubeir MA et al, 2001). Besides, trainees grow into their future role as physicians by imitating clinical trainers acting as role models. (Weissmann PF et al, 2006) A role model doesn't have distinct definition scholars have defined it in various ways. "A teacher …facilitates learning, while role-models are persons from whom [one] wants to gain some of their attributes" (Ibry DM, 1986) other variation can be "faculty members demonstrate clinical skills, model, and articulate expertise thought processes and manifest positive professional characteristics". (Paice et al, 2005). The term "role model" was first used to refer to a person who "occupies

the social role to which an individual aspires" (Scott and Joseph, 2002). This definition is consistent with claims that medical students are drawn to figures of status. However, it is at variance that medical education research defines a role model: a person who is considered a standard of excellence to be imitated because of his or her professional attributes (Kravet et al, 2001).

Second, other studies suggest that role models have distinctly different levels of involvement in student identity formation compared to advisers and mentors these various roles are seen to be quite distinct. Advisors are individuals who are officially assigned and have a particular role in the academic setting: they are responsible for ensuring that the graduate student fulfills departmental and institutional requirements for an advanced degree. Though advisors may provide advice about other activities, what the administration of the institution and colleagues in the department will notice is whether one's students fulfill these requirements (Swazey et al., 1996). Mentors, however, are individuals whose relationships with students emerge through less official channels, and as this happens generally, take on unofficial counsel roles in which they share their experience and expertise. They reflect on their successes and failures and can explain what they have learned. Mentors also are interested in the professional development and career advancement of those they mentor (Bird, S.J., 1994). The role model serves as an object of admiration, emulation, and respect. Role models have shown as a way to inculcate professional values, attitudes, and behaviors in students and young professionals (Tadayon & Razie, 2012).

Having role models is essential to any individual's growth and development because they serve as a source of learning, motivation, self-definition, and career guidance (Glaser, 1978). According to Gibson 2003, role models have a crucial purpose in early career socialization by helping individuals create and experiment with their self-concept. Role model constructed in a combination of the concepts of role, which defined as a form of behavior and set of activities associated with or expected as part of status or position such as leader or teacher (Katz and Kahn, 1978), with the concept of modeling, the psychological matching of cognitive skills and patterns of behavior between a target and an observing individual (Bandura, 1986). Role model selection has recently conceived as a social comparison process; the basis of this referent is whether the individual finds a role model relevant to his or her needs and goals or; views role models position or expertise to be potentially attainable. (Lockwood and Kunda, 1997). The social environment sometimes restricts this search process by making role models more or less available. The environment will impose some role models, and some will be self-selected by individuals. Not all aspects of even an important model are adopted by the individual; rather, the individual actively gleans lessons from a model. Gibson 2003, defined role modeling as a cognitive process in which individuals actively observe, adapt, and reject attributes of multiple role models.

Modeling is one of the most efficient modes of learning any new skill or knowledge (Bandura, 1986). It isn't easy to imagine any society that has not relied on models in one form or another to transmit the most important and fundamental cultural values, customs, and beliefs from one generation to the next. Learning simple cognitive skills, such as basic arithmetic or reading skills, as well as more complex cognitive skills, such as critical thinking or problem solving, are facilitated when models verbalize their own thought processes as they engage in these activities (Salisu et al., 2014). Thoughts are thus made observable and potentially modeled through the overt verbal representation of the model's actions. Modeling both thoughts and actions has several helpful features t+32hat contribute to its effectiveness in producing lasting cognitive skills improvements. Nonverbal modeling gains and holds attention, which is often difficult to sustain by talk alone. It also provides an informative semantic context within which to imbed verbalized rules (Holland C& Kobasigawa A, 1980).

Theoretical lens

Theories guide and give meaning to what we see as researchers. Using theory helps scholars explain, predict, and understand phenomena and, in many cases, to challenge and extend existing knowledge within the limits of critical bounding assumptions. When a researcher investigates and collects information, he/she needs a clear idea of what information is important to collect. Therefore, the theory is a tool that enables us to identify a problem and plan a means for altering the situation. This study is based on social learning theory, which states that we learn from our interactions with others in a social context. Social learning theory clarifies the summative perspectives of medical teachers and undergraduate medical students, explains the findings of the study, and constructs a road map to navigate role modeling in the school. The study used an educational setting as a base for the interview guide and facilitated an understanding of role models and their portrayal.

Social learning is assumed to operate in the same way throughout life (Digger, Nussbam & Haddock, 1993). Social learning theory hypothesized that people learn from one another by observation, imitation, or modeling (Wunshell et al., 2007). Social learning theory extends the learning process beyond the teacher-learner relationship to the broader context. Learning is often a social process, and other individuals, especially significant others, provide compelling examples or role models for how to think, feel, and act. Role modeling is a central concept of the theory. Through observation, the behavior of other people develops similar behaviors. After observing others' behavior, people assimilate and imitate that behavior, especially if their observational experiences are positive or include rewards related to the observed behavior.

Albert Bandura, a leading scientist on social learning theory wrote learning can occur without a change in behavior (REF). In other words, behaviorists say that learning has to be represented by a permanent change in behavior. In contrast, social learning theorists say that because people can learn through observation alone, their learning may not necessarily be shown in their performance (Bandura,1965) and

later on added learning may or may not result in a behavior change (Bandura,2002b). Albert Bandura outlined the four-step internal process that directs social learning: attention phase, retention phase, reproduction phase, and motivation phase.

The first step in Bandura's model is the attention phase; it is necessary for any learning to occur. Researches indicate that role models with high status and competence are more likely to be observed. However, learner's characteristics, such as needs, self-esteem, and competence, are the most significant determiner of attention. It can also be influenced by features of the model or the observer, such as the observer's expectation or level of emotional arousal. The second step is the retention phase: it involves storage and retrieval of the observed of what is observed. This process depends on the observer's ability to code or structure the information in an easily remembered form to mentally or physically rehearse the model's action. The third step is the reproduction phase: it comes when the learner copies the observed behavior. Observers must be physically and intellectually capable of producing the act. Mental rehearsal, immediate enactment, and corrective feedback enhance the behavior. But sometimes, reproducing the model's action may involve skills the observer has yet not acquired. The last is the motivational phase: which indicates the learner's level of motivation to perform a certain type of behavior. The observer will perform the act only if they have some motive or reason to do so. The presence of reinforcement or punishment, either to the model or directly to the observer, becomes most important in this process. Attention and retention phases account for acquisition or learning of the model's behavior, while reproduction and motivation control the performance.

Statement of the problem

Role models can serve as an object of admiration, emulation, and respect. Role models have shown us how to inculcate professional values, attitudes, and behaviors in students and young professionals (Paice et al. 2005). However, the rapport between an undergraduate medical student and medical teacher appears tense in the School of Medicine due to cultural and behavioral constructs. Social interactions with individuals with some level of authority, elders, and religious leaders are commonly uneasy and can be very stressful for Ethiopian youth. The culture condemns talking back to and interrupting these individuals and only focuses on what not to do. That leaves little room for proper communication and shared understanding. Students have to interact with teachers on formal and social demeanor to attain professionalism, ethics, medical skills, and knowledge. For students to acquire the mentioned requirements, they might need to "observe" and "navigate" the educational setting to idolize individuals; role models.

The concept of role model and role modeling in the School of Medicine, College of Health Sciences at Addis Ababa University, is unknown. The perceptions of role models have not studied in the past. The evolution of the role model and role modeling through time and understanding of how role modeling works at various levels is a goal of the study. To address these issues, I studied the concept of role model and role

modeling from two educational components; undergraduate medical students and medical teachers. The experiences of the medical teachers (with long years of service) compared to the undergraduate medical student (who joined in recent years) provided a baseline finding to define the term “role model” and “role modeling” in this context..

Central research question

The study will investigate the attributes of role models by final-year undergraduate medical students and medical teachers and why they are considered role models in our context at the School of Medicine, College of Health Sciences at Addis Ababa University.

Objective

The general objective of the study was to explore who is considered a role model by the medical teachers and undergraduate medical students of the School of Medicine, College of Health Sciences at Addis Ababa University.

The study defined role models, inspected why and how they came to be; through assessment of perception of medical teachers and undergraduate medical students on role models. It elaborated role modeling for the specific context. It also compared medical students’ and medical teachers’ perceptions of attributes they consider essential for role models to possess. It examined the medical teacher role modeling experience or if there was any.

Methodology

Study Design

Qualitative phenomenological research was conducted using a constructivist methodology. The phenomenon of interest was medical students’ and medical teachers’ perceptions of attributes important for role models to possess.

Study Duration

The study conveyed from September 2019 to May 2020.

Study Site

The site of the study was in the School of Medicine, College of Health Sciences at Addis Ababa University, located Addis Ababa, and the capital city of Ethiopia.

Study Participants

The study was conducted on a heterogeneous sample. The participants were medical teachers and final year undergraduate medical students in in School of Medicine, College of Health Sciences at Addis Ababa University.

Inclusion Criteria

The study included willing participants' final year undergraduate medical students and medical teachers who teach undergraduate medical students more than or equal to 3 months per year. On this basis, the medical teachers in the department of Internal medicine, Surgery, Pediatrics and Gynecology & Obstetrics were included.

Sampling

Final year undergraduate medical students of all the medical student cohorts were purposefully sampled as they spent seven years in the school. Through convenience sampling; sixteen out of one hundred fifty-four final year students were willing for participation.

Medical teachers who have over twenty-five years of experience in their respective specializations' were purposefully selected. Through convenience sampling; only three out of thirty-six of medical teachers were willing for participation.

Data Collection

The study has two distinct data collection phases, one for the medical teachers and the second for undergraduate medical students. A focus group discussion was conducted on January 2nd 2020 as a pilot test of the question for medical students. The participants were undergraduate dental medicine students who are excluded in the study but are exposed to the same learning environment with the undergraduate medical students. Data collected for medical students utilized focus group discussions using semi-structured interviews (*Appendix 5*). These included two focus group discussions with six members' each and one focus group discussion with four members; two of the appointed members' were unable to participate at the last minute. The focus group discussions were administered in an available class room; each discussion lasted for an hour and half using both English and Amharic for enhanced communication. Participants were asked about if they consider individuals as role models, their encounters with them and its impact on the outcome of their education.

Due to medical teachers' strict schedule semi-structured interviews were feasible data collection tool. Three semi-structured interview were done in English by their preference, at each participant's office. The participants were asked questions related to role model and role modeling with probing questions to facilitate further discussions as needed *(Appendix 4).*

The focus group discussion and the one to one interviews were audiotaped. Additional field notes were taken to record participants' non-verbal cues, unique usage of words, and pronouns and record important context.

Data Storage

The raw data were converted to computer files on a password-protected personal computer. Files for each focus group or interview were named using the standard convention specific for the transcribed

data. For safety and integrity, the data was organized and archived in correlation with time, place, and data collection method.

Data Transcriptions

Focus group and interview discussions were recorded, transcribed and coded for each phase. I coded and transcribed the data. I reviewed the Medical teachers *(phase one)* and the undergraduate medical students *(Phase two)* separately. English translations were done for segments of the data that are used to report the findings.

Data Rigor

The credibility is to create confidence in clarification of the meaning of the data. In this study, complete explanations were used that decreased the probability of losing information. In order to obtain dependability, in-depth methodological explanation was used to permit the repetition. Transferability explains the extent to which study findings can be appropriate in contexts outside the study condition. Total explanation of the phenomenon under study was delivered to allow readers, thereby allowing them to associate the instances of the phenomenon defined in the research report with those they had observed to appear in their situations.

Ethical approval

Three hard copies of the proposal of the study were submitted to the department of health sciences education to be reviewed by local advisors. The proposal was approved on October 30th 2020 by the institutional review board of the School of Medicine, College of Health Sciences, in Addis Ababa University.

Disclosure

The participants notified of the method and the aim of the study, and they voluntarily participated. They advised that they could withdraw from the interview at any time. Also, they were ensured their identity would be kept secret in research reports. Ethical consideration of the discussion was assured by privacy and confidentiality with each study participant with documented informed consent. There were no power relationships among undergraduate medical students, as they were all from the same cohort. Participants were provided by participant's numbers to preserve anonymity. And, they were instructed to address each other with their respective numbers for the duration of the focus group discussions.

Results

I planned to conduct the study with twenty-two participants, but it was done on nineteen participants; three medical teachers and sixteen final year undergraduate medical students. Ten prospective participants' declined the request, so I proceed with data analysis. The majority of the data was in English, but the portion of the Amharic data was translated into English using phrasings and words with similar

meanings. The collected data from the six data points (three focus group discussion and three interviews) was suggestive of data saturation. I encoded and constructed the themes using the four phases of social learning. The theory served as guidance in formulating interview questions, understanding the data, and in theme creation. The encoding was done in two phases *(Phase1 & Phase two*), which correlate with the finding report. The coding trees for both phases are displayed in *Appendix 6 and Appendix 7*. The data acquired from the undergraduate medical students and medical teachers were encoded similarly, yielding different findings.

The concept of role model reaches far beyond the lecture hall and, particularly in clinical education which encompasses numerous environmental factors and contexts. It is not regularly investigated because the analysis is not straightforward, despite its implication on teaching and learning. The qualitative approach using focus groups and interviews was chosen to establish undergraduate medical students and medical teachers' perceptions of role models within the school. Students appear to be good at recognizing influences of positive and negative role models, particularly the adverse impacts of the negative role models on their quality of education, such as loss of interest and psychological trauma. Meanwhile, the medical teachers identified the attributes and actions toward becoming a positive role model but revealed constrictions such as low pay and lack of recognition. Three themes were developed from the study; positive role model, negative role model, and role modeling. The themes are discussed from the perspective of medical teachers (*Phase one*) the undergraduate medical students (*Phase two*).

PHASE ONE: - Medical teachers' perceptions of role models

The medical teachers that participated had over twenty-five years of experience as an educator. The participants range from pediatric surgeons, Pulmonary, and intensive care specialists to gynecologists. Three themes emerged while discussing encounters with prominent individuals throughout their training and career: positive role model, negative role model, and role modeling.

Positive role model

This theme was selected when medical teachers talked about personal experience with individuals who left good impressions and regarded them as a positive role model. They mentioned clinicians they trainer under and previously worked with as their positive role model. The conversation comprised three categories; the admirable attributes of the positive role models, their constructive impact, and affirmative social acceptance. The frequently mentioned admirable attributes were humility towards students, punctuality for academic sessions, integrity during practice, compassion towards patients' and meticulousness of medical interventions. One medical teacher expressed this as:

> *"He was real academician…I have witnessed his dedication, love to his profession and his patients'."* MT_3

Another one added

"It is in bedded in his character, it's the package not a special episode .....he comes in time for the morning sessions…he takes things seriously. He always examined the patient properly, he believes in discussion, he doesn't force you to do something but convince you scientifically." MT_1

The medical teachers identified the constructive impact of positive role models, which happened overtime on formal and social interaction. They said it influenced their career inclinations, being more empathic towards patients, exercising fairness to students, and becoming a diligent researcher and physician. A medical teacher said: *"I involve with students… I am emphatic and compassionate towards patients' and parents.... I try to be a good teacher …"* MT_2

In addition, these role models reportedly respected by other colleagues and sometimes received low-scale promotions such as a unit or department head. However, the positive role models rarely recognized for their effort and character by the school's administration. One medical said:

"… we are colleagues now and tell him about it …. he is not only my role model …. many people tell him even raise certain incidents "MT_2

And another one expressed it as:

"he is highly respected by his colleagues…. I heard that he is a leader in his religious and social life."MT_1

Negative role models

This theme was discussed by the participants with a concerned tone when they recalled their personal experiences with individuals who left wrong impressions and their current observations on the misconduct of fellow educators and labeled them as negative role models. It was discussed in three categories; unethical attributes, destructive impacts, and slight social acceptance. Procrastination, harassment and belittling students' and colleagues, disrespect to patients', attendants and students, and professional incompetence were frequently mentioned as unethical attributes of the negative role models. They noted educators behaving in that manner were common during their training years. Though times have changed, it is still observable in educators. One medical teacher expressed it as:

"… loading the students with all the activity and leaving everything for them even forming and leading a gang against a student …someone should have his own stand and attitude towards a student." MT_1

Medical teachers acknowledged the destructive impacts of these individuals and few mentioned being personally unaffected due to personal and professional growth. A medical teacher said:

"Sometimes I may not control my emotion but I feel bad after that …I used to get angry easily …. but I matured and improved …" MT_3

However, they noticed its effect on students such as lose of interest. One medical teacher expressed it as:

"…I understand it can be very discouraging for undergraduate students…." MT_2

According to the medical teachers, negative role models were unevaluated for their clinical and ethical competence and were rarely punished for misconduct; there for has a slight social acceptance. A medical teacher said:

> *"…. his personal and professional life was in turmoil…. he was not liked in the department and was considered a bossy leader…the negative outcomes of his interventions were widely spoken."* MT_2

Role modeling

The theme of role modeling was developed when medical teachers articulated the net effect of the positive and negative role models as they passed on knowledge, skill, and value. It has three categories; Performance of role models, the performance of medical teachers, and mode of learning. Role models' performance illustrates medical teachers' observations on their role models; as they worked hard, lead, treated patients', harassed, belittled, intimidated patients' and students'. Some medical teachers reported improved negative role models, while positive role models became recognized for their efforts. A medical teacher stated:

> *"…. they disrespected and harassed students, but it was more of the social aspect other than that they were excellent clinicians… eventually I saw them changing through time ... they were lacking the human component ...they recognized that and tried to socialize."* MT_2

The performance of medical teachers as a result interaction of their role models was inspiring. The findings were; be open-minded towards students', becoming better educators and researchers. A medical teacher stated:

> *"When I am with students I don't want to say bad things…I try not to point on a specific person ...not discriminate"* MT_1

Based on self-assessment some participants viewed themselves as a positive role model for medical students'. A medical teacher said:

> *"I do consider myself as a role model …I feel like am successful and accomplished …I know what I have is not an ideal but you know I have feel accomplished …. I got married and have kids …I feel like I am a good teacher … clinical teaching is not similar to other discipline. You coach and teach your trainees by sharing your experiences … I give constant feedback for students … also the research aspect I have many publication …my papers are quoted in many presentations …I feel like there are some positive things that impacted my trainees"* MT_2

While another one argued:

"…it is hard to define self as a role model…it is others who define you as a role model as a bad or good or partially good …so I cannot say …. some times more than 50% of role modeling is bad…unless it is reflective it is not good …there are negative thing you teach your students whether you know it or not …" MT 1

The medical teachers also mentioned constraints to be a positive role model, such as low pay, lack of encouragement, and proper evaluation system, which considered a faculty member to be the bigger opportunity. A medical teacher stated:

*"…the salary the faculty is earning is very low …you cannot leave with it.so, people should look for other source of money …it's not peculiar for me…. everyone is doing it…it has affected the outcome and quality of public service"*MT 3

The learning model described when participants spoke about how they attained the attributes and actions of their role models. They had differing views on role modeling as a learning tool. One medical teacher said:

"I pick the positive behaviors and practice it in my own way…I don't copy it…I am not that kind of person" MT 2

Another medical teacher expressed it as:

"I copied that unintentionally… we grow up seeing our teachers beating students… but I learned that people can learn more if you encourage them…I don't want to harass anyone" MT 3

PHASE TWO: - Undergraduate medical students' perceptions of role models

The undergraduate medical students who participated were in their final year and had the most experience in medical school. While discussing encounters with prominent individuals throughout their training, three themes developed; positive role model, negative role model, and role modeling.

Positive role model

According to participants, individuals that leave a good impression on the medical student are very few, but when they do, they were regarded as positive role models. Some medical teachers were repeatedly mentioned on that accord. The theme is discussed in three categories; the admirable attributes of the positive role models, their constructive impact, and confirmatory social acceptance. Excellent clinical knowledge and skill, punctuality, dedication, objectivity, and humility were stated as admirable attributes of a positive role model. The students stressed respect for patients and especially students, was considered the finest attribute. Some of the descriptions of positive role model attributes were as follows

One student explained about her positive role models as:

"*For me it is women who are seniors …our educational system is more of a hieratical thing …I really love those women who are friendly but smart at the same time …I don't have a specific person but I am inspired by them"* FG_1P_6

Another one spoke about added:

"*Medical school is all about helping people and making life easier for others…for me being humble as a person is a big deal…. having a good interpersonal relationship with colleague and students. When a person is humble; respects the people around, is always open for discussion, listens to idea, understands other people, have good communication …is a positive thinker and will be very supportive…for me the biggest thing is being humble."* FG_3P_4

Students recognized the constructive impact of positive role models on their medical training, such as becoming more empathic towards patients, having endurance, being more attentive, and retaining the subject matter. One student said:

"When I become fatigued and don't have the energy to go on anymore.... I feel his concern towards me and see him care for patients…. I reflect on myself and find my last ounce of energy to go on with my day." FG_2P_1

During the focus group discussions, the participants agreed on individuals' mentioned positive role models. The positive role models were respected, loved, and repeatedly awarded by students. One medical student said:

"I can vouch for individuals mentioned by P5, P6, P3…. the three of them. Prof. Y is exemplary woman, Dr. S was like our father [group laughter] and Dr. A's dedication is on another level and my role model Dr. T …" FG_1P_2

Negative role model

Students reported this theme with despair. They regarded seniors, residents that left a wrong impression as a negative role model. The medical students' experiences with the negative role models were shared among the discussion participants'. There were many nodding heads with nervous laughter. Most switched from English to Amharic to fully express incidents. It is explained in three categories as unethical attributes, destructive impacts, and social reluctance. Disrespecting students', harassment and intimidation, coercing false patient history, student generalization were conveyed as unethical attributes of a negative role model. A medical student said:

"The most common thing is belittling and disrespecting individuals…Mostly it is not directed to a colleague but at inferiors who are still in the education process from C1 till residents. The second is patient handling, they don't have a good relationship with patients .....they don't treat the

patients at all …even they don't care while breaking bad news they say things like 'you're going to die'. We feel devastated when we see that…. Even the relationship among colleagues are very bad. We are all working for the same goal…. some feel superior when insulting other…" FG_2P_3

The participants admitted negative role models had a destructive impact on the quality and outcome of their education, such as discouragement, loss of interest, and psychological trauma. Also, they reported students' withdrawal from training because it was often common. A student explained his personal experience as:

"….. out of nowhere…they attack you personally even when they see they don't identify you as a human being… they prove themselves by diminishing you. They might get into a very sensitive issue…. even on oral exam …I have been asked personal questions and was evaluated by that. The best part is … you can't be emotional…if you are they consider it as disrespectful…. You are their inferior…they define your identity." FG_3P_5

The students also revealed social reluctance towards negative role models. Individuals' were rarely evaluated and punished for unethical behaviors. The participants added these deeds were sometimes observed in the majority of the clinical department's staff. One student said:

"*Some character of the seniors is socially accepted …. It is not a good thing but it is their own thing …Most of the time the seniors want to be seen as a God and we will see them as a God too…. if you go against them …the consequence is really bad. You don't want to risk yourself so you just accept it and go with it until the time passes."* FG_3P_3

Role modeling

The theme role modeling emerged through the performance of role models, subsequent students' performance, and mode of learning. It discusses the summative effects of role models on undergraduate medical students and their process. The performance of role models illustrates the observation of students as their role models; they conducted academic sessions and interacted with patients', harassed, and intimidated students. Medical students said:

"*…it is more of consistent…. I consider it as their personality trait. It seems like they started it in the past, I never saw episode of them diverting. They show these behaviors in a daily basis …that was surprising because some of it demands energy and you have to go out of your way to do it …but they do that persistently….it seemed like they life was painted by it"* FG_2P_4

Another one added:

"…they don't act as monitors; they don't consider us like students. You will be insulted equally at your first and last bedside. They are not teachers …they only look for your bad side. They don't

follow up on what you read and should read. Their common feature is that they will pick a bad side and insult you" FG_3P_2

While students reflected on their performance, most reported they were inclined to act as the negative role models than positive role models due to lack of proper guidance, supervision, and coercion. One student explained it as:

"I have been affect in both ways ... in gyn/obs department…. lying or creating new patient at a morning session is common ...I am accustomed to lying…even if that angers me…it is my only choice to survive. We (from C1 till R4) sit down in the morning and create new patient…. If something wrong occurs, you change the patient's history …. I used to say no but the residents kept insulting me so I got used to it. Currently, if you ask me a patient's vital sign ...I will tell you (group laughter) ...to tell you the truth I am disappointed in myself. ……when you see patients' being mistreated you will be shocked; they will teach you how to do it their way… ...then it is normal…. I don't like it…and I always contemplate why I lie. If I have told the truth, I know I would have not graduated…this is clear. …. the good qualities at least I have learned patience …. starting from the janitors till the seniors you have communicate with patience. Now I can at least communicate with people and be patient" FG_2P_4

The learning model described how undergraduate medical students attained a role model's attributes and actions. Participants mentioned intentional copying or rejecting of attributes and unintentional replication. For instance, medical students in the same focus group expressed it as:

"It is about survival [laughter]" FG_3P_5

"….. I barely remember, acquiring that intentionally …." FG_1P_1

Discussion

This study showed that medical teachers and undergraduate medical students are directly affected by role models. Medical teachers and students explored the attribute and performance of individuals before labeling as positive and negative role models. The results of phase one and phase two indicated overall similarities, such as attributes of role models and overlooked aspects of academic evaluations.

As identified by Lockwood and Kunda 1997, medical teachers recognized attributes of role models mostly based on the social aspect and selected positive role models with the expertise to be potentially attainable. The presence and performance of positive role model also influenced their inclination while resisting adverse influences of negative role models. Medical teachers also noted; colleagues regarded as negative role models are hindering undergraduate medical students' education. Low payment, lack of

acknowledgment, and punishment were seen as the contributing factors for the poor performance of medical teachers.

Undergraduate medical students also described influences of role models mainly; negative role models. Even though studies show, role models serve as an object of admiration; teach professional values and behavior in students and young professionals' (Tadayon & Razie, 2012). The students mentioned harassment and intimidation even confessed to falsifying patients' records. They also added positive role models that were rarely accredited, and the negative role model's misconduct was never addressed. The study revealed collateral learning of medical students through their encounter with a medical teacher, and the curriculum was mostly unprofessional and unethical conduct.

Bandura 1986, stated modeling as one of the most efficient mode of learning. The medical teachers selectively learned attributes from role models and described themselves as a role model. They viewed role modeling to be directed towards students. A study showed learning and critical thinking are facilitated when role models engage in activities and verbalize the process (Salisu et al.,2014), are attentive to nonverbal modeling to construct context (Holland C& Kobasigawa A, 1980). The undergraduate medical students observed behaviors' and intentionally learned actions of positive and negative role models with conscious rejection in some exceptions. However, medical students lacked proper guidance, which affected their professionalism, personality, and new rules of practice. According to Hafferty F 2006, professional identity formation is done during clinical training. Therefore, undergraduate medical students were more affected by negative role models when medical teachers resisted it.

Conclusion

This study revealed that role modeling is present in the School of Medicine. However, it also revealed that it is something that is acting upon a learner's professional identity formation in a majorly detrimental way, an unexpected finding. Furthermore, I concluded that role modeling was not something that most medical teachers were aware of, nor were they aware of the potential for it to act in a destructive and/or detrimental way on their student's professional identity formation in the crucial period of undergraduate medical education. More specifically, I found that, in many instances, that the administration, faculty, and students refrained from addressing these concerns at all or as a collective group. As a result, this study exposed or made visible, a significant crack in the evaluation criteria of educators in our sites. To move forward, this study suggests that medical educators consider how they might become more attentive to the power, and the effect, of role-modeling and how it might be possible to harness it to provide a more positive impact upon the learning experiences for students and on their professional identity formation. Future research seems necessary in this domain, research that builds upon this work, further investigating the effects of role models and role modeling on learners' professional identity formation from

other viewpoints and locations. It is the hope of this study, it can be a help to promote a better understanding of the role models in medical education in Addis and stimulate further dialogue about role model and role modeling.

Strength and limitation of the study

This study's qualitative nature means that issues have been explored in-depth, although the results will have limited generalizability to other institutions. Focus groups and interviews provide an excellent source of qualitative data, but by their nature are influenced by group dynamics. The transcription and translation were done only by the author. The other limitation is the study did not examine the role model from the complete stakeholder of medical education.

Work plan

The study was conducted from September 2019 till May 2020.	September - October	November- January	February – March	March-May	May	June
Proposal submission						
Ethical approval						
Data collection						
Data analysis						
Preliminary result						
Thesis dissertation						

Budget

Category	**Amount**	**Unit cost per birr**	**Total cost per birr**
Instruments			
Tape recorder	1	5,000.00	5,000.00
Storage device	2 pcs	500.00	1,000.00
Consumable materials			
Paper	2 packs	300.00	600.00
Writing utensils	1packs	800.00	800.00
Airtime	20 hours	50.00	1,000.00
Logistics			
Printings	100 pcs	3.00	300.00
Data security	1	4,000.00	4,000.00
Travel cost	50 round	100.00	5,000.00
Key personnel			
Transcriber	1	3,000.00	3,000.00
Refreshments			
Focus group discussion	35	30.00	1,050.00
Interviews	4	30.00	120.00
Total		13,813.00	21,870.00

References

Allen I. Committed but critical: an examination of young doctors' views of their core values. London: Health Policy and Economic Research Unit, BMA, 1997.

Alma, B. 2013. Entrepreneurship. Revised Edition. 19th Prints. Bandung. Alfabeta, Co.

Balmer D, Serwint JR, Ruzek SB, Ludwig S, Giardino AP. Learning behind the scenes: Perceptions and observations of role modeling in pediatric residents' continuity experience. Ambul Pediatr. 2007; 7:176–181.

Bandura, A. Influence of models' reinforcement contingencies on the acquisition of imitative responses. Journal of personality and social psychology, 1965: 16: 589.

Bandura, A. Aggression: A social learning analysis. Englewood Cliffs, NJ: Prentice-Hall.1973.

Bandura, A. Toward a psychology of human agency. Perspectives on Psychological Science.2006b: 1:164

Berhan, Yifru. Medical doctors profile in Ethiopia: production, attrition and retention. In memory of 100-years Ethiopian modern medicine & the new Ethiopian millennium. Ethiopian medical journal. 2008: 46 Suppl 1. 1-77

Bloom SW. Innocence in education. School Rev. 1972;80:333–52.

Cribb A, Bignold S. Towards the reflexive medical school: the hidden curriculum and medical education research. Stud Higher Educ.1999;24:195–209.

Cruess RL. Teaching professionalism: theory, principles, and practices. Clin Orthop Relat Res 2006;449:177–85

Cruess RL, Cruess SR. Teaching professionalism: general principles. Med Teach 2006

Dewey, J. 2007. Experience and education. New York: Touchstone (Simon & Schuster).

Driggers DL, Nussbaum JS, Haddock KS. Role modeling: An educational strategy to promote effective cancer pain management. Oncol Nurs Forum. 1993;20:959–962.

Glaser, B. G. (1978). Theoretical sensitivity: Advances in the methodology of grounded theory (Vol. 2). Sociology Press Mill Valley, CA.

Goldie J, Dowie A, Cotton P, Morrison J. Teaching professionalism in the early years of a medical curriculum: a qualitative study. Med Educ 2007;41 (6):610–7.

Hafferty F. Viewpoint: the elephant in medical professionalism's kitchen. Acad Med 2006;81 (10):906-14.

Hagopian A, Thompson MJ, Fordyce M, Johnson KE, Hart LG. The migration of physicians from sub-Saharan Africa to the United States of America: measure of the African brain drain. Hum Resources Health 2004; 2: 17.

Hussein, M. E., Hirst, S., Salyers, V., & Osuji, J. (2014). Using Grounded Theory as a Method of Inquiry: Advantages and Disadvantages. The Qualitative Report, 19(27), 1-15. Retrieved from https://nsuworks.nova.edu/tqr/vol19/iss27/3

Holton G, Merton RK. Biographical memoirs. Proc Am Philos Soc. 2004;148:4. http://www.jstor.org/discover/10.2307/1558145?uid=3738240&uid=2&uid=4&sid=21102319880727. Accessed December 11, 204.Irby DM. Clinical teaching and the clinical teacher. J Med Educ. 1986; 61(9): 35-45

Irby DM. Clinical teaching and the clinical teacher. J Med Educ. 1986; 61(9): 35-45.

Khan,shahid.(2014).Qualitative research methods :grounded theory. International journal of business and management.9.10.5539/ijbm.v9n11p224.

Kenny NP, Mann KV, MacLeod H. Role modeling in physicians' professional formation: Reconsidering an essential but untapped educational strategy. Acad Med. 2003;78:1203–1210

Kohlberg, L., and R. Mayer. 1972. Development as the aim of education. Harvard Education Review 4(4): 449–496.

Kravet SJ, Christmas C, Durso S, Parson G, Burkhart K, Wright S. The intersection between clinical excellence and role modeling in medicine. J Grad Med Educ. 2011;3: 465–468

Lave J, Wenger E. Situated Learning. Cambridge: Cambridge University Press 1991

Lempp H, Seale C. The hidden curriculum in undergraduate medical education: qualitative study of medical students' perceptions of teaching. BMJ. 2004;329(2):770–3.

Luluk Tri Harinie, Achmad Sudiro, Mintarti Rahayu, Achmad Fatchan. Study of the Bandura's Social Cognitive Learning Theory for the Entrepreneurship Learning Process. Social Sciences. Vol. 6, No. 1, 2017, pp. 1-6. doi: 10.11648/j.ss.20170601.11

Naicker, Saraladevi & Plange-Rhule, Jacob & Tutt, Roger & Eastwood, John. (2009). Shortage of Healthcare Workers in Developing Countries—Africa. Ethnicity & disease. 19. S1-60.

Mir MA, Marshall RJ, Evans RW, Hall R, Duthie HL. Comparison between videotape and personal teaching as methods of communicating clinical skills to medical students. Br Med J (Clin Res Ed). 1984;289:31–34.

Morgenroth, T., Ryan, M. K., & Peters, K. (2015, November 23). The Motivational Theory of RoleModeling: How Role Models Influence Role Aspirants' Goals. Review of General Psychology. Advance online publication. http://dx.doi.org/10.1037/gpr0000059

Mutha S, Takayama JL, O'Neil EH. Insights into medical students' career choices based on third and fourth year students' focus group discussions. Acad Med 1997;72:635±40.

Newman, B. M., & Newman, P. R. (2007). Theories of human development:Mahwah,NJ,US: Lawrence Erlbaum Associates publishers.

Paice, E., Heard, S., & Moss, F. (2002). How important are role models in making good doctors?. BMJ (Clinical research ed.), 325(7366), 707–710. doi:10.1136/bmj.325.7366.707

Saari, A. 2016. Knowledge without contexts? A Foucauldian analysis of EL Thorndike's positivist educational research. Studies in Philosophy and Education 35(6): 589–603.

Sambell, K., and L. McDowell. 1998. The construction of the hidden curriculum: Messages and meanings in the assessment of student learning. Assessment and Evaluation in Higher Education 23: 391–402.

Scott M. Wright,Joseph A. Carrese. Excellence in role modelling: insight and perspectives from the pros CMAJ 2002;167(6):638-43

Sinclair S. Making doctors: an institutional apprenticeship. Oxford, UK: Berg; 1997. As quoted by: Paice E, Heard S, Moss F. How important are role-models in making good doctors? BMJ. 2002;325:707–710.

Steinert Y. Educational theory and strategies for teaching and learning professionalism. In: Cruess RL,

Cruess SR, Steinert Y, eds. Teaching Medical Professionalism.New York, NY: Cambridge University Press2009;31–52.

Swick HM, Szenas P, Danoff D, Whitcomb M. Teaching professionalism in undergraduate medical education. JAMA 1999;282:830-2.

Tadayon Nabavi, Razieh. (2012). Bandura's Social Learning Theory & Social Cognitive Learning Theory.

Wear D. On white coats and professional development: the formal and the hidden curricula. Ann Intern Med 1998;129:734-7.

Weissmann PF, Branch WT, Gracey CF, Haidet P, Frankel RM. Role modeling humanistic behavior: Learning bedside manner from the experts. Acad Med. 2006;81:661–667.

Wuenschell CW, Dalrymple KR, Shuler CF. PBL core skills faculty development workshop 2: Training faculty in grouplearning facilitation skills through role modeling and role-play activities. J Dent Educ. 2007;71:606–618.

Wright S, Wong A, Newill C. The impact of role models on medical students. J Gen Intern Med 1997;12:53±6.
Wright SM, Kern DE, Kolodner K, Howard DM, Brancati FL. Attributes of excellent attending physician role models. N Engl J Med 1998;339:1986±93.

Wright SM, Carrese JA. Excellence in role modelling: Insight and perspectives from the pros. CMAJ. 2002;167:638–643.

Wright SM, Carrese J A. Serving as a physician role model for a diverse population of medical learners. AcadMed.2003; 78(6):623–8.Epub2003/06/14.PMID:12805043.

Whitcomb ME. Medical professionalism: can it be taught? Acad Med 2005;80 (10):883–4.

Appendix 1: - Working definition

It is the contextual meaning of words or phrase to correlate with the study. **Table 3**

	Term	Definition
1	Senior	Medical consultants
2	Resident	Post graduate medical student
5	C1	3rd year undergraduate medical student
6	R_n	Post graduate medical student $_{N= \text{year of program}}$
7	MT_n	Medical teacher participant $_{number}$
8	FG_nP_n	Focus group $_{number}$ participant $_{number}$

Appendix 2: - Interview Consent Form

Addis Ababa University

College of health sciences

School of Medicine

Research title: **Medical teachers' and undergraduate medical students' perceptions of role models in medical education.**

Research investigator: Dr.Fasikawit Engida
Research Participants name:

The interview will take thirty minutes. We don't anticipate that there are any risks associated with your participation, but you have the right to stop the interview or withdraw from the research at any time.

Thank you for agreeing to be interviewed as part of the above research. Ethical procedures for academic research undertaken from the School of Medicine institutional review board requires that interviewees explicitly agree to being interviewed and how the information contained in their interview will be used. This consent form is necessary for us to ensure that you understand the purpose of your involvement and that you agree to the conditions of your participation. Would you therefore read the accompanying **information sheet** and then sign this form to certify that you approve the following?

• the interview will be recorded and a transcript will be produced
• you will be sent the transcript and given the opportunity to correct any factual errors
• the transcript of the interview will be analyzed by Dr.Fasikawit Engida as research investigator
• access to the interview transcript will be limited to Dr.Fasikawit and academic colleagues and researchers with whom she might collaborate as part of the research process
• any summary interview content, or direct quotations from the interview, that are made available through academic publication or other academic outlets will be anonymized so that you cannot be identified, and care will be taken to ensure that other information in the interview that could identify yourself is not revealed
• the actual recording will be kept in a password protected storage device.

• Any variation of the conditions above will only occur with your further explicit approval

All or part of the content of your interview may be used;
☐ In academic papers, policy papers or news articles
☐ On our website and in other media that we may produce such as spoken presentations
☐ On other feedback events
☐ In an archive of the research as noted above

By signing this form, I agree that;

- I am voluntarily taking part in this research. I understand that I don't have to take part, and I can stop the interview at any time;

- The transcribed interview or extracts from it may be used as described above;
- I have read the Information sheet;
- I don't expect to receive any benefit or payment for my participation;
- I can request a copy of the transcript of my interview and may make edits I feel necessary to ensure the effectiveness of any agreement made about confidentiality;
- I have been able to ask any questions I might have, and I understand that I am free to contact the researcher with any questions I may have in the future.

Participant's signature Date: -

Researcher signature Date: -

Contact information

Name of researcher:-Dr.Fasikawit Engida
E-mail: Fasika.engida@gmail.com
You can also contact Dr.Fasikawit 's supervisor:
Name of researcher:-Professor Amha mekasha
E-mail: amekashaw @yahoo.com

Appendix 3: - Focus group discussion consent form

Addis Ababa University

College of health sciences

School of Medicine

Research title: **Medical teachers' and undergraduate medical students' perceptions of role models in medical education.**

Research investigator: Dr.Fasikawit Engida
Research Participants name:

The interview will take 1 hour. We don't anticipate that there are any risks associated with your participation, but you have the right to stop the interview or withdraw from the research at any time.

Thank you for agreeing to be in the focus group discussion as part of the above research. Ethical procedures for academic research undertaken from the School of Medicine institutional review board requires that participants explicitly agree to being interviewed and how the information contained in their discussion will be used. This consent form is necessary for us to ensure that you understand the purpose of your involvement and that you agree to the conditions of your participation. Would you therefore read the accompanying **information sheet** and then sign this form to certify that you approve the following?

	YES	NO
I have read and understand the participant information and have had answers to my questions that I am happy with.		
I understand that I have free choice of whether to take part or not.		
If I withdraw from the study I understand that any anonymized data collected from me up to this point will be kept.		
I understand that I have the right to refuse to answer any question or discuss any topic that I do not want to talk about.		
I give my permission for the interview/ discussion to be audio-recorded. I also understand that the audio-recording will be destroyed at the end of the project and the transcript will be archived.		
I understand that what I talk about in the interview/ discussion will be kept strictly confidential.		
I agree to take part an in-depth interview/ focus group discussion (please delete as appropriate)		

Participant's signature Date: -

Researcher signature Date: -

Contact information

Name of researcher:-Dr.Fasikawit Engida
E-mail: Fasika.engida@gmail.com
You can also contact Dr.Fasikawit ‘s supervisor:
Name of researcher:-Professor Amha mekasha
E-mail: amekashaw @yahoo.com

Appendix 4: - Interview questions for medical teachers

Addis Ababa University,

College of health sciences,

School of Medicine

Research title: **Medical teachers' and undergraduate medical students' perceptions of role models in medical education.**

Researcher investigator:-Dr.Fasikawit Engida

Moderator name: -

Transcriber name: -

Duration: - 30 minutes

- When did you join medical school?
- When did you choose that specialty program?
    - What Is your job in the School of Medicine?
    - Why did you choose that specific specialty?
    - If there was a specific experience or a person that lead you to choose that specific specialty
    - How did that affect you?
    - Do you think you would have chosen differently if…?
- Through your experience was there a person or people that you looked up to
    - What make him/her distinct (character)
    - Was there a special episode that you observed
    - Can you please elaborate
    - How did he/she handle routine task (patient care, skill, attitude, teaching...)
    - Do you think it was also known for others, socially acceptable?
    - Can you please mention an individual with the characteristics' listed above?
- Through your experience was there a person or people that had a negative impact
    - What make him/her distinct (character)

- Was there a special episode that you observed
- I can see how that was difficult for you, can you please elaborate
- How did he/she handle routine task (patient care, skill, attitude.)

- After all of these point being said
  - Do you recognize those character in yourself?
  - Intentionally or Unintentionally (was not meant to copied)
  - Is it socially acceptable
  - How did that influence your daily routine (patient care, teacher and learning)?
  - Do you think he/she were aware of the influence or impact?
  - If not for this, do you think you thing could be different

- Through your years of service
  - Do you think you have developed qualities or character to be considered by undergraduate medical student?
  - Has that been support by your colleagues or the institution reward or reprimand
  - Please explain more
  - Are you aware that you are portraying those to students?
  - Please describe on how

- Have you observed the stated character on the undergraduate medical students /student?
  - Has that been observed by your colleagues and students too
  - Do you consider yourself as role model?
  - Can you explain why

- What do you think is?
  - The challenge of became a role model in this context
  - The opportunity became a role model in this context
  - Please add any ideas you think are relevant which were not raised in our discussion

Appendix 5: - Focus group discussion questions for undergraduate medical students

Addis Ababa University,

College of health sciences,

School of Medicine

Research title: **Medical teachers' and undergraduate medical students' perceptions of role models in medical education** Researcher investigator:-Dr.Fasikawit Engida

Moderator name: -

Transcriber name: -

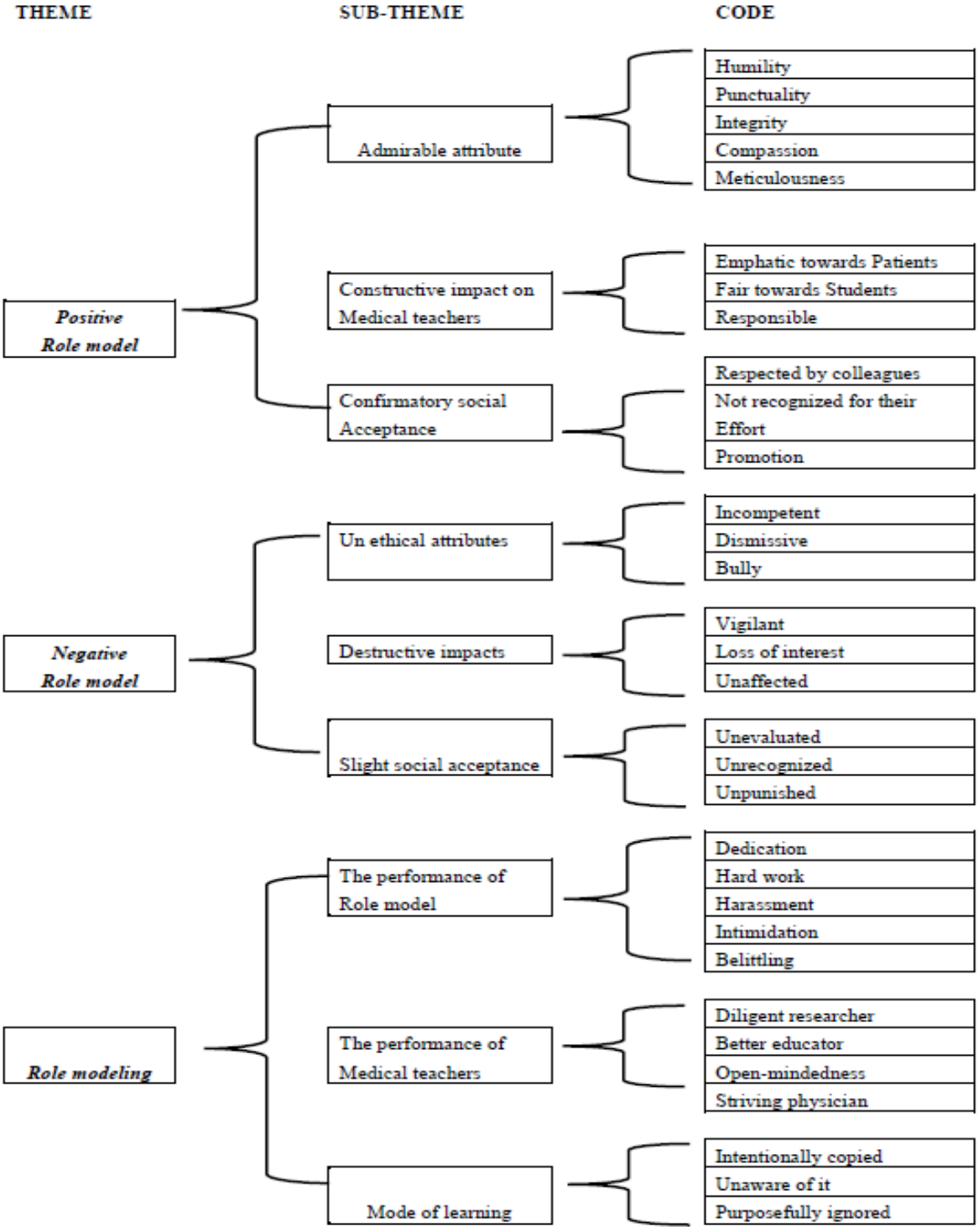
Duration: -1 hour

- When did you join medical school?
    - How long was that
- How was your experience of undergraduate medical education?
    - Can you please elaborate
    - How did your upbringing and background influence those experience?
    - Why did you think that happened?
    - Really, do you think that happens to undergraduate medical students' now
- Through your experience was there a person or people that you looked up to
    - What make him/her distinct (character)
    - Was there a special episode that you observed
    - Can you please elaborate
    - How did he/she handle routine task (patient care, skill, attitude, teaching...)
    - Do you think it was also known for others, socially acceptable?
    - Can you mention an individual with the mentioned characteristics'?
    - Do the other group members agree?
- Through your experience was there a person or people that had a negative impact
    - What make him/her distinct (character)
    - Was there a special episode that you observed

- I can see how that was difficult for you, can you please elaborate
- How did he/she handle routine task (patient care, skill, attitude.)

- After all of these point being said
  - Do you recognize those character in yourself?
  - Intentionally or Unintentionally (was not meant to copied)
  - Is it socially acceptable
  - How did that influence your daily routine (patient care, teacher and learning)?
  - Do you think he/she were aware of the influence or impact?
  - If not for this, do you think you thing could be different
  - What is the way forward?

Appendix 6: - Coding framework for perceptions of medical teacher of role model



Appendix 7: - Coding framework for perceptions of undergraduate medical students of role model