

Doctoral Dissertation
St. Luke's International University, Graduate School, 2016

Prevalence of and Factors Relating to Nurses' and Midwives'
Self-Reported Disrespect and Abuse of Women During
Facility-Based Childbirth in Tanzania

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Introduction

Background

On 25th September 2015, a new sustainable development agenda including 17 new sustainable development goals (SDGs) was adopted by member states of the United Nations (UN) as a 15-year global guide (United Nations Development Programme [UNDP], 2015). The new SDGs focus more strongly on equity and people-centeredness from a human rights perspective (World Health Organization [WHO], 2015). Since the SDGs evolved from the Millennium Development Goals (MDGs), improving the maternal and neonatal mortality ratio has remained as one of the unfinished agenda items.

To reduce those maternal and neonatal deaths, a key strategy, over the past decade, has been the utilization of health care facilities with delivery care by skilled birth attendant. Globally the strategy of facility-based births has resulted in a higher proportion of avoidable mortalities moving to health facilities. Although national level implementation historically has been given much attention to areas such as health coverage, or quantity of resources, the quality dimension has received much less attention until last decade (van den Broek & Graham, 2009). In this context, quality of care facility-based care during childbirth has been become an important subject of discussion among maternal-child health policy makers and research (Tunçalp et al., 2015). Quality of care not only reflects physical safety care, but also interpersonal relationships between healthcare providers and women that encompass respect for women's basic human rights (Mannava, Durrant, Fisher, Chersich, & Luchters, 2015; Miller, & Lalonde, 2015; White Ribbon Alliance, 2011).

The White Ribbon Alliance (WRA) developed the first charter for women as a mandate to protect their human rights in the childbearing process. It draws on previous established instruments that delineate human rights and applies those principles to women in the child-bearing process (White Ribbon Alliance, 2011). The WRA along with researchers recognizes that the health provider's attitude and behavior are important elements of quality of care and as such protecting childbearing women's rights directly affects delivery outcomes and influences women's childbirth experiences positively and

negatively (Bohren et al., 2014; Chadwick, Cooper, & Harries, 2014; Mannava et al., 2015; White Ribbon Alliance, 2011).

However, during recent years, there is mounting evidence reported that worldwide some women experienced disrespectful and abusive care during facility-based childbirth by healthcare providers (Bowser & Hill, 2010). Bowser and Hill's landmark review of research about disrespect and abuse (D&A) at facilities (2010) identified a number of qualitative studies finding physical abuse, non-consented care, non-confidential care, non-dignified care, discrimination, abandonment, and detention in facilities. In Tanzania, similar negative treatment and women's experiences during childbirth have been reported in previous studies (Kruk et al., 2014; McMahon et al., 2014; Mselle, Moland, Mvungi, Evjen-Olsen, & Kohi, 2013; Sando et al., 2014). Likewise, according to the previous quantitative studies in Tanzania, the prevalence of any D&A experiences reported by postpartum women was 12% to 70 % (Kruk et al., 2014; Kujawski et al., 2015; Sando et al., 2014, 2016).

Policy makers and clinicians are beginning to express a growing concern about the quality of care during childbirth in health facilities in both low-middle income and high-income countries. The WHO statement titled "The prevention and elimination of disrespect and abuse during facility-based childbirth" was issued in 2014, and indicated that there is still no internationally agreed upon definition and no measurement tool of D&A even though it is becoming an urgent problem (WHO, 2014).

Consequently, there has been little study done concerning how D&A occurs and what are the contributing factors. Most international qualitative and quantitative studies about health provider's disrespectful and abusive behaviors focused on women's reports, and there are limited data reported by providers. Also, there have been no published quantitative studies comparing correlates of provider's D&A. Therefore, this study aims to quantitatively measure the prevalence of D&A of women during childbirth in health facilities in Tanzania, and to explore the drivers and contributors.

Purpose of the Study

- 1) To estimate the prevalence and frequency of nurses' and midwives' D&A of women during childbirth with their experience.
- 2) To determine the drivers and contributors of nurses' and midwives' D&A of women during childbirth in terms of their individual and health facilities' factors.

Significance of the Study

Through implementation of this study, the following items are expected to be derived from the findings:

Explorations of nurses' and midwives' perspectives and reflections on their own practice.

Despite of growing global concern on D&A during facility-based childbirth, there has been little study done concerning research in this area. Most studies focused on measuring the prevalence of D&A as reported by women's experiences. In this study, the nurses' and midwives' perspectives on their own care will be described, and the participating nurses and midwives would be able to reflect on their own practice by answering the questions.

Extracting potential correlated factors with D&A.

Although the prevalence of D&A during childbirth at health facilities has become increasingly clear through previous studies, little is known the contributors. Some researchers indicated sufficient information about the contributors was established through qualitative studies provided by the 'victims' perspective. However, there are no quantitative studies. Therefore the results of this study should provide the important details to understand why and how D&A of women occurs, what would cause it, what would be barriers to prevent D&A, or how D&A might be reduced.

Implications for education and health system development.

The results might reveal some issues and needs for pre- or/and in-service nursing and midwifery training in Tanzania. This study will be expected to provide valuable

information for the next study and suggestions for developing nursing and midwifery educational programs in Tanzania and other countries, which have similar problems. Likewise, it may provide information to improve health systems leading better health services for women and for better working condition for nurses and midwives.

Definition of Terms as Used in This Study

Disrespect and Abuse (D&A) - a continuum of disrespectful and abusive care practices on women by nurses and midwives during childbirth at a health facility whether done intentionally or not, and regardless of surrounding conditions. It is based on the seven categories defined by Bowser and Hill (2010), and reported as disrespectful and abusive by women in other research:

- 1) physical abuse (slapping, pushing, and not using anesthesia)
- 2) non-consented care (not telling the measurement results, no explanations and not asking for consent for medical procedures)
- 3) non-confidential care (lack of physical privacy and disclosure of woman's private information)
- 4) non-dignified care (scolding, threatening, and restricting women's behavior)
- 5) discrimination based on specific patient attributes (denied of service due to HIV status, regarding adolescent pregnancy as bad)
- 6) abandonment of care (ignore, neglect, and not coming quickly)
- 7) detention in facilities (discharge postponed until women pay her bill, and requesting bribe)

Also, three categories which are derived from the findings of the preliminary study (Shimoda, Horiuchi, Leshabari, & Shimpuku, 2017) are included:

- 8) inflicting physical harm (harmful, unsanitary and unauthorized medical procedure)
- 9) lack of empathy and compassion (emotional neglect such as not genuinely sympathizing or considering the women's situation)
- 10) unethical clinical practice (making false reports)

Nurse(s) - midwife(ves) – a nursing midwifery staff who conduct deliveries at participating settings including a registered nurse-midwife, an enrolled nurse-midwife, and a nursing assistants.

Study Framework

Since there were no existing frameworks suitable for studying D&A of women during facility-based childbirth in Tanzania, therefore the conceptual framework of this study (Figure 1) was constructed by the researcher. It is guided by seven relevant frameworks from related areas: 1) Donabedian's quality assessment model (Donabedian, 1980), which provides the overall structure; 2) Bronfenbrenner's socio-ecological model (Bronfenbrenner, 1981), 3) WHO's Quality of Care Framework for maternal and newborn health (Tunçalp et al, 2015), 4) Mannava's conceptual framework: influences on and inputs of maternal health care providers attitudes and behaviours (Mannava et al., 2015), 5) Bowser and Hill's conceptual framework of D&A (Bowser & Hill, 2010), 6) Bohren's systematic review (Bohren et al., 2015), and 7) the findings of preliminary study (Shimoda et al., 2017). These frameworks provide the foundation for the entire study, and only the concepts which are enclosed by solid lines and arrows: structure and process are focused on in this study. As structure of D&A the facility and nurses' and midwives' factor are formulated based on the extant literature and results of pilot studies. Processes of D&A is understood as ten types of behaviors, and outcomes are based on the consequences of D&A.

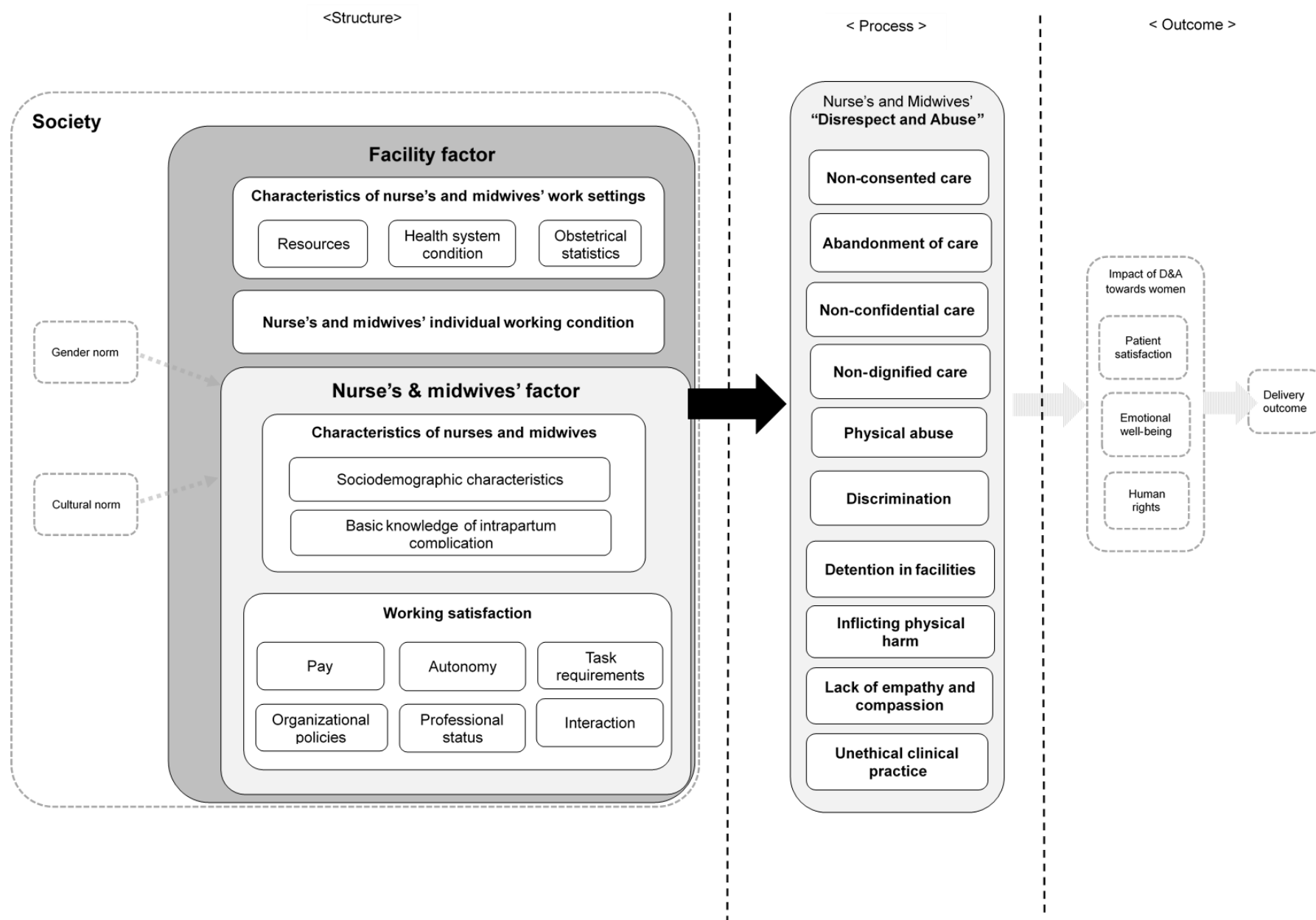


Figure 1 Conceptual framework of the study: Factors relating participants' D&A of women during childbirth

Review of the Literatures

Quality of Care (QoC) During Childbirth

QoC for maternal and newborn health.

The framework of QoC for maternal and newborn health was conceptualized in 2015, with a special focus on the care at facilities included evidence based, effective, respected, supportive care based on solid health systems foundation (Tunçalp et al, 2015). Based on this framework, along with two key dimensions: provision and experience of care, QoC is composed of eight factors: 1) evidence based practice for routine and emergency care, 2) actionable information system, 3) functional referral systems, 4) effective communication between providers and women, 5) respect and dignity care for women, 6) emotional support from providers, 7) competent and motivated human resources, and 8) essential physical resources available. Researchers found that only increasing the institutional delivery rate was insufficient to reduce maternal and neonatal mortality and morbidity; it was indicated that high quality obstetric care, which supported robust health systems would be crucial to saving their lives (Miller et al., 2003; Sharma et al, 2015). In addition, McConville and Lavender (2014) mentioned in their study that improving the QoC might not only influence better delivery outcomes but also achieve women's good childbirth experiences, which might remain in their memories for years after delivery (Takehara, Noguchi, Shimane, & Misago, 2014).

QoC and nurses and midwives.

It is well reported in a number of previous studies that nurses and midwives have a critical role in providing quality care during childbirth for both women and infants (McConville & Lavender, 2014; Renfrew, et al, 2014; The Partnership for Maternal, Newborn & Child Health [PMNCH], 2011; United Nations Population Fund [UNFPA], 2011). According to the International Confederation of Midwives (ICM), midwives are required to implement appropriate and high quality care (ICM, 2013), and they should also be required to have sufficient knowledge and skills not only to carry specific tasks, but also to support quality care (McConville, & Lavender, 2014).

D&A of Women During Facility-based Childbirth

Categories of D&A.

From the early 2000's, studies using the word 'disrespect' in the title began to be conducted in health care, but not in the obstetric area. However, after the first review of 'D&A in facility-based childbirth' reported by Bowser and Hill in 2010, related studies with the word 'D&A' in the title have been gradually increasing from six years on. In Bowser and Hill's review (2010), seven categories were described as disrespectful and abusive care: 1) physical abuse, 2) non-consented care, 3) non-confidential care, 4) non-dignified care, 5) discrimination based on specific patient attributes, 6) abandonment of care, and 7) detention in facilities (Table 1). Likewise, Freedman et al. (2014) also defined D&A as "interactions or facility conditions that local consensus seems to be humiliating or undignified, and those interactions or conditions that are experienced as or intended to be humiliating or undignified" (p.916). However, these categories may overlap (Miller & Lalonde, 2015), and can occur along a continuum from subtle discrimination to overt violence (WRA, 2011).

White Ribbon Alliance (2011) founded the charter for protecting childbearing women from disrespect and abuse during childbirth process which were derived from Bowser and Hill's D&A categories, and also which were grounded in the terms of human rights instruments from other declarations and conventions of human rights (Table 1). D&A of women are considered as serious infringement against women's human rights, and respectful maternity care is required to protect their autonomy and right to self-determination from a humanitarian point of view.

Prevalence of D&A.

According to two exhaustive systematic reviews, including both qualitative and quantitative studies across all regions and country income levels (Bohren et al., 2015; Mannava et al., 2015), the most common negative behavior was verbal abuse – for instance, threatened with poor outcomes for women's babies as a result of their behavior during childbirth. Also, the majority of abuse report occurred in Africa with fewer reports in other areas in the world (Mannava et al., 2015). Another negative behaviour,

Table 1 D&A categories and WRA's childbearing women's rights

Categories of D&A (Bowser & Hill, 2010)	Corresponding rights of childbearing women (WRA, 2011)
1 Physical abuse e.g. slapping, pushing, and beating	1 Freedom from harm and ill treatment Every woman has the right to be free from harm and ill treatment
2 Non-consented care e.g. no explanation or asking for consent for medical procedures such as episiotomy and caesarian section	2 Right to information, informed consent and refusal, and respect for choices and preferences, including the right to companionship of choice wherever possible Every woman has the right to information, informed consent and refusal, and respect for her choices and preferences, including the right to her choice of companionship during maternity care, whenever possible
3 Non-confidential care e.g. lack of physical privacy and disclosure of woman's private information	3 Confidentiality, privacy Every woman has the right to privacy and confidentiality
4 Non-dignified care e.g. shouting, scolding, using undignified language, and being demeaned	4 Dignity, respect Every woman has the right to be treated with dignity and respect
5 Discrimination based on specific attributes e.g. denied of service due to age, HIV status, and social status	5 Equality, freedom from discrimination, equitable care Every woman has the right to healthcare and to the highest attainable level of health
6 Abandonment or denial of care e.g. ignored, and care dangerously delayed	6 Right to timely healthcare and to the highest attainable level of health Every woman has the right to equality, freedom from discrimination, and equitable care
7 Detention in facilities e.g. discharge postponed until bill paid, and requesting bribes for service	7 Liberty, autonomy, self - determination, and freedom from coercion Every woman has the right to liberty, autonomy, self-determination, and freedom from coercion

which often occurred as much as verbal abuse was neglect and abandonment. A common experience of those women was being left alone in the labour room and resulted in the delivery by themselves without any support (Bohren et al., 2015; Mannava et al., 2015).

There were 10 published quantitative studies that measured D&A (Abuya et al., 2015; Asefa & Bekele, 2015; Kruk et al., 2014; Kujawski et al., 2015; Okafor, Ugwu, & Obi, 2015; Rosen et al., 2015; Sando, et al., 2014, 2016; Sudhinaraset, Treleaven, Melo, Singh, & Diamond-Smith, 2016; Warren, Beebe, Chase, Doumbia, & Winch, 2015), as shown in Table 2. Of those studies four were conducted in Tanzania (Kruk et al., 2014; Kujawski et al., 2015; Sando et al., 2014, 2016), only one reported provider's perspective

in Mali (Warren et al., 2015), and three studies conducted direct observation of women during childbirth (Sando et al., 2014, 2016; Rosen et al., 2015).

In Tanzania, over one in eight postpartum women (12 - 19%) reported experiencing some type of D&A at facilities in the exit surveys (Kruk et al., 2014; Kujawski et al., 2015; Sando et al., 2014, 2016), and 28.2 % (Kruk et al., 2014) and 70 % (Sando et al., 2016) in the follow-up surveys one month after deliveries. According to those women's reports, most commonly experienced was non-dignified care (i.e. shouting, scolding, and threatening) (4.8 - 53 %) and abandonment of care (i.e. being ignoring, and delivery without attendants) (6.8 - 52 %). Moreover, according to direct observation studies (Sando et al., 2014, 2016), almost all women (80 - 100 %) did not provide consent for examinations, and 5 % of women experienced undignified language by providers, and 6 – 60 % of women were shouted during history taking.

The influences on the D&A.

Bowser and Hill (2010) described potential contributors to D&A which were derived from qualitative studies in their landscape review: 1) individual and community, 2) national laws & policies, human rights and ethics, 3) governance & leadership, 4) service delivery, and 5) providers factors. Mannava, et al. (2015) also described three broader level determinants: 1) individual-level factors, 2) organizational-level factors, and 3) societal-level factors, that influenced maternal health care provider's attitude and behaviors. Focusing simply on provider individual level, there are some factors such as provider's stigmatization, stress, job satisfaction, demoralization, provider-patient & provider-provider hierarchy, lack of awareness of right issues, and lack of respect and reward. Likewise, facility level factors such as work conditions and working environment were widely reported (Mannava et al., 2015), and there were work-related factors such as heavy workloads, long working hours, weak supportive supervision, poor relationships with co-workers, insufficient salaries, and lack of space (Bohren et al., 2015; Bowser & Hill, 2010; Mannava et al., 2015; Reis, Deller, & Smith, 2012). It is hard to explain provider's violent behavior toward women by any single factor, but violent behavior is caused by the complex interplay of individual, relationship, social, cultural and

environment factors (Krug, Mercy, Dahlberg, & Zwi, 2002).

The consequences and impact of D&A.

D&A directly affects outcomes when women are ignored or abandoned during childbirth (Miller et al., 2003). Indirectly, it negatively affects women's experiences particularly during childbirth and leads to fear of facility-based childbirth, and it erodes women's expectation of childbirth care (Bohren et al., 2014; Chadwick et al., 2014; Miller & Lalonde, 2015). Not only the woman who experienced D&A at facility negatively impacted, but it will also influence others surrounding the woman. Those who received negative experiences and become fearful of that facility, recommended that their family and friends not to go the place where she gave a birth (Mrisho et al., 2007).

Women's underutilization of health care facilities for childbirth is noted in previous studies (Ensor & Cooper, 2004; Kruk et al., 2009; Larson, Hermosilla, Kimweri, Mbaruku, & Kruk, 2014; Moyer, Adongo, Aborigo, Hodgson, & Engmann, 2014; Mselle et al., 2013). Several reasons for women's keeping a distance from health facilities are explained, however, a key cause is losing trust in health care facilities because of poor quality childbirth care. The trust between women and health-care providers are violated by poor treatment including disrespectful, abusive and neglectful care, and those violations of trust between women and their health-care providers create a disincentive for women to seek skilled attendance (Kruk et al., 2009; Kujawski et al., 2015).

Table 2 Research summary of the prevalence of quantitatively measured disrespect and abuse of women in labor.

Authors	Country	Method	Participants	Any form of D&A	Specific form of D&A						
					Physical abuse	Non-consented care	Non-confidential care	Non-dignified care	Discrimination	Abandonment of care	Detention in facilities
Sudhinaraset et al. (2016)	India	Interviewer administered questionnaire	Women (N=392)	54.7%	15.5%	4.6% (Lack of information)	-	28.6 % (Verbal abuse) 12.2% (Threats to withhold treatment)	16.8%	10.2 % (Abandoned or ignored) 10.5% (Delivered alone)	24.2 % (Requested payment or bribe)
Sando et al. (2016)	Tanzania	Interviewer administered questionnaire (Postpartum)	Women (N=1914)	15.0%	5.0%	0.2%	2% 2 % (Lack of privacy)	6.0%	-	8.0%	0.2%
		Interviewer administered questionnaire (Community follow-up)	Women (N=64)	70.0%	52.0%	5.0%	54% 53 % (Lack of privacy)	53.0%	-	52.0%	2.0%
		Direct observation	Women (N=197)	-	5.0%	81 - 84 %	19% 5 - 85 % (Lack of privacy)	5 -91 %	-	-	-
Abuya et al. (2015)	Kenya	Interviewer administered questionnaire	Women (N=641)	20.1%	4.2%	4.3%	8.5%	18.0%	-	14.3%	8.1% (Detention in facility for failure to pay) 0.9 % (Request for a bribe for services)
Asefa et al. (2015)	Ethiopia	Interviewer administered questionnaire	Women (N=173)	78.6%	32.9%	94.8%	21.4%	12.1%	19.7%	39.3%	0.6%
Kujawski et al. (2015)	Tanzania	Interviewer administered questionnaire	Women (N=1388)	18.0%	-	-	-	-	-	-	-

Table 2 Research summary of the prevalence of quantitatively measured disrespect and abuse of women in labor. (Continued)

Authors	Country	Method	Participants	Any form of D&A	Specific form of D&A						
					Physical abuse	Non-consented care	Non-confidential care	Non-dignified care	Discrimination	Abandonment of care	Detention in facilities
Okafor et al. (2015)	Nigeria	Interviewer administered questionnaire	Women (N=437)	98.0%	35.7%	54.5%	26.0%	29.6%	20.0%	29.1%	22.0%
Rosen et al. (2015)	Tanzania (Included other Eastern and Southern African countries)	Direct observation	Women (Tanzania: N=306, 320)	-	-	(Explains procedures before proceeding = 72.1%) (Informs client of findings = 69.0 %)	(Provider drapes client before delivery = 46.1 %)	-	-	-	-
Warren et al. (2015)	Mali	Interviewer administered questionnaire (Asking provider's perceptions of how often Malian auxiliary midwives preform D&A)	Auxiliary midwives (N= 67)	-	(Force legs open: sometimes =47%, rarely=30%) (Hold down: sometimes =36%, rarely=47%) (Slap: sometimes =21%, rarely=42%)	-	-	(Yell: sometimes =30%, rarely=49%) (Insult: sometimes =23%, rarely=47%)	-	-	(Detain for fees: always=4%, sometimes =62%, rarely=15%)
Kruk et al. (2014)	Tanzania	Interviewer administered questionnaire (Postpartum)	Women (N=1779)	19.5%	2.9%	0.06%	4.4%	12.9%	-	8.5%	1.9%
		Interviewer administered questionnaire (Community follow-up)	Women (N=593)	28.2%	5.1%	0.17%	6.2%	18.9%	-	15.5%	3.4%
Sando et al. (2014)	Tanzania	Interviewer administered questionnaire (Postpartum)	Women: HIV negative. (N=1807/2000)	15.0%	4.7%	0.2%	1.8% 2.0% (Lack of privacy)	6.5%	-	7.9%	0.1%
			Women: HIV positive. (N=147/2000)	12.2%	2.7%	1.4%	0.7% 0.7% (Lack of privacy)	4.8%	-	6.8%	0.7%
		Direct observation	Women: HIV negative. (N=183/208)	-	3.3 - 4.4 %	79.8 - 85.3 %	6.2 - 20.2 % 65.0 - 91.3 % (Lack of privacy)	4.9 - 64.0 %	-	-	-
			Women: HIV positive. (N=18/2000)	-	5.6%	88.9 - 100 %	0 - 22.2 %	0 - 70.6 %	-	-	-

Methods

Research Design

The design was a descriptive retrospective cross-sectional study, using self-completed questionnaire with nurses and midwives.

Settings

This study was conducted in three regions in Tanzania. Only public hospitals where deliveries were conducted during the study period were conveniently chosen from those regions to be included in this study, since there are many differences between the private and public health systems. The facilities were selected to reflect the different levels of hospitals including referral, regional, district, and health center levels. The total number of settings included was 30: three referral, five regional, seven district hospitals, and 15 health centers.

Participants

A nurse, a midwife or a nursing assistant, who; 1) has ever conducted deliveries at participating settings within the last three years; 2) can read and speak Swahili language was included to participate for the study. The reason for limiting the period of time to three years was to include nurses and midwives who had ever conducted a delivery- not necessary quite recently, and had been engaged in the laboring process even though she/he had not conducted a delivery recently, and to exclude those who had not conducted deliveries for a long period of time.

Sample Size

The estimation of sample size was based on Polit and Beck's (2010), recommendation for increasing power by having five subjects for each variable studied. In this study, since the Index of Working Satisfaction (IWS) is the scale, which has the most question items: 44 items, by using Likert-type scale, the minimum sample size was 240. Considering the dropout rate as 30% and the missing values as 15%, therefore the

sample size was 403 to attain the minimum sample size necessary. In addition, to compare the results within different institution levels, minimum 100 was recruited from each facility level.

Procedure

Duration of data collection.

The data were collected between September and October 2016.

Measurement instruments.

The self-completed retrospective questionnaire to measure the nurses' and midwives' factors and the facility checklist for collect participating facility's data were used as measurement instruments.

After the researcher developed all the question items in English, native Tanzanians performed the translation work from English into Kiswahili in four steps: 1) translation from English to Kiswahili by one local master degree holder midwife who was a bilingual (Kiswahili-English) interpreter; 2) cross-checking the translated questionnaire comparing with the original English by three other native Tanzanians: two PhD candidates who are a midwives, an obstetrician, and one language specialist; 3) one other bilingual Tanzanian PhD candidate, who is an PhD candidate physician, back-translated the cross-checked questionnaire from Kiswahili into English to confirm the contents; and 4) after the researcher compared the back-translated one and the original questionnaire, the researcher discussed the contents again with the two Tanzanians, who had back-translated and the other who had participated in the second step, to correct and confirm the results.

To establish face validity of the questionnaire, five midwives who had clinical experiences working at health facilities responded to the questionnaire and from that, the items were modified.

The process of substruction is used to show the relationships between the concepts and measurements (Figure 2), and Table 3 shows also all measurement items, which are included in each concepts.

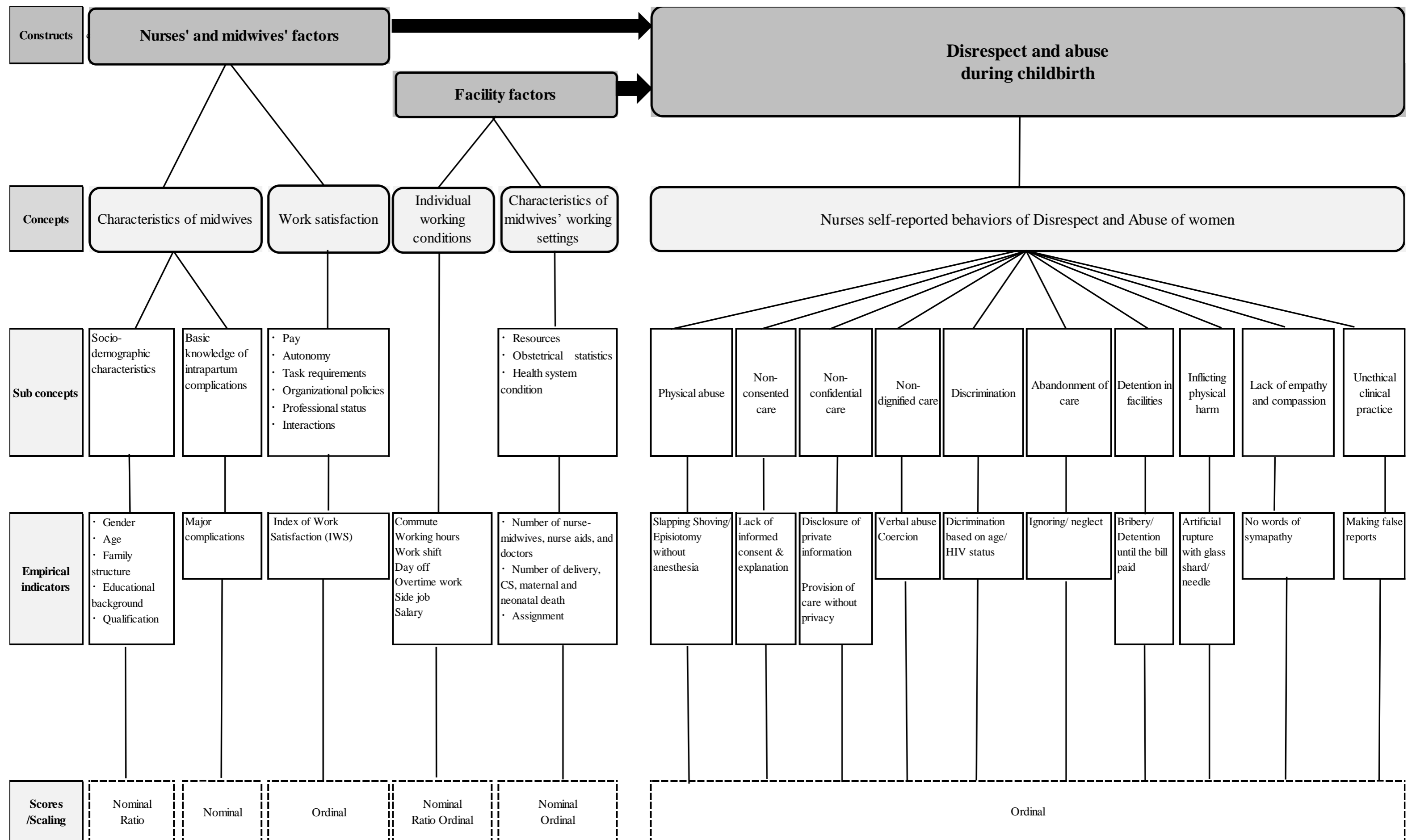


Figure 2 Substruction of the relationships between the measured concepts and the measurements

Table 3 The relationships between the measured concepts and the measurements

	Concept	Subconcept	Category	Empirical indicator	Scores/ Scaling	Tool		
Structure	Nurse's and midwives' factors	Characteristics of nurses and midwives	Sociodemographic characteristics	Gender	Nominal & Ratio (14 items)	Questionnaire Section 2		
				Age				
				Family structure				
				Educational background				
				Qualification				
				Job status				
			Basic knowledge of intrapartum complications	Major complications	Nominal (5 items)	Questionnaire Section 5		
	Working satisfaction	Pay	Index of Working Satisfaction	Ordinal (44 items)	Questionnaire Section 1			
						Autonomy		
						Task requirements		
Organizational policies								
Professional status								
	Interactions							
Facility factors	Individual working conditions	Commute Working hours Work shift Day off Overtime work Side job Salary Busyness	Nominal, Ordinal, Ratio (14 items)	Questionnaire Section 3				
					Characteristics of work settings	Level of the facility	Nominal (1 items)	Facility checklist
						Resources	Staff Beds Partitions between beds	
					Health system condition	Restricting the companion	Nominal (4 items)	
						Job assignment		
						Patient assignment		
						Supervision system		
						Obstetrical statistics		Numer of vaginal deliveries
	Number of caesarian sections							
	Number of maternal deaths							
	Number of still births							
	Process	D&A	Nurses' self-reporter behavior	Non-consented care	Lack of informed consent & explanation	Ordinal (22 items)	Questionnaire Section 4	
				Abandonment of care	Ignoring/ neglect			
				Non-confidential care	Disclosure of private information Provision of care without privacy			
				Non-dignified care	Verbal abuse/ coercion			
Physical abuse				Slapping/ shoving/ episiotomy without anesthesia				
Discrimination				Dicrimination based on age/ HIV status				
Detention in facilities				Bribery/ detention until the bill paid				
Inflicting physical harm				Artificial rupture with glass shard/ needle				
Unethical clinical practice				Making false reports				
Lack of empathy and compassion				No words of sympathy				

Structure: determine question items about nurses' and midwives' factors.

Characteristics of nurses and midwives.

There are two sub concepts derived under the category, characteristics of nurses and midwives: 1) sociodemographic characteristics, and 2) basic knowledge of intrapartum complication. Items about nurses' and midwives' characteristics and educational background are considered to affect their D&A behaviors were extracted from research regarding abusive behavior or violence (Bohren et al., 2015; Bowser & Hill, 2010; Krug et al., 2002; Mannava et al., 2015; Warren et al., 2015). To establish empirical indicators of the first sub-concept, 14 items were asked of nurses and midwives using nominal and ratio level scales to determine their: gender, age, family structure, educational background, qualification, and job status (Appendix 1, Section 2, no.1-14), and five items were asked using a nominal scale to determine knowledge: postpartum hemorrhage, eclampsia, placenta abruption, prolonged labor, and infection (Appendix 1, Section 5). The researcher developed all items.

Working satisfaction.

Healthcare provider's negative behaviors are influenced by their stress, fatigue, frustration, and poor job satisfaction, and those emotion are affected by working conditions such as heavy workloads, insufficient salaries, and poor relationships with co-workers (Mannava et al., 2015). Stamp's (1997) Index of Working Satisfaction (IWS) was used to measure nurses' and midwives' working satisfaction, which includes their feelings and satisfaction toward their own working conditions and job, and which may affect their D&A behaviors. There are two parts to the IWS; part B was used, which is composed of 44 attitude expressions about the six components of job satisfaction: pay (dollar remuneration or fringe benefits received for work done), autonomy (amount of job related independence, initiative and freedom, either permitted or required in daily work activities), task requirements (tasks or activities that must be done as a regular part of the job), organizational policies (management policies and procedures put forward by the hospital and nursing administration of the hospital), professional status (overall

importance or significance felt about one's job, both in one's view and in the view of others), and interaction (opportunities presented for both formal and informal social and professional contact during working hours), with two subscales: nurse-nurse interaction, and nurse-physician interaction. As empirical indicators, 44 items were asked (Appendix 1, Section 1), using a seven-point Likert-type scale: (1) *strongly disagree*, to (7) *strongly agree*. Score range from 44 to 308 points, and the higher score means higher levels of job satisfaction. Internal consistency was demonstrated by the Cronbach's alpha coefficients with .82 for the overall scale and for each component between .52 to .81. Moreover, the researcher obtained a license to use the IWS from the copyright holder.

Structure: determine of question items about facility factors.

Nurses' and midwives' individual working condition.

Items about nurses' and midwives' individual working condition that might affect their D&A behaviors were extracted from research regarding D&A during childbirth (Bohren et al., 2015; Bowser & Hill, 2010; Mannava 2015; Reis et al., 2012). As empirical indicators of the concept, 14 items were asked using nominal, ratio, and ordinal scales including: nurses' and midwives' commute, working hours and break, work shifts, overtime work, side jobs, salary, and busyness (Appendix 1, Section 3). The researcher developed all items.

Facility checklist.

To assess the health facilities where participating nurses and midwives have worked in terms of their working environment, the facility checklist, which was developed by the researcher based on previous studies regarding D&A during childbirth (Bowser & Hill, 2010; Bohren et al., 2015; Mannava et al., 2015; Reis et al., 2012), were used (Appendix 2).

Process: determine question items about nurses' and midwives' D&A behavior.

Items about nurses' and midwives' behavior of D&A were drawn from a literature review including two key reviews regarding D&A behavior during childbirth (Abuya et al, 2015; Asefa & Bekele, 2015; Bohren et al., 2015; Bowser & Hill, 2010; Kujawski et

al., 2015; Kruk et al., 2014; McMahon et al., 2014; Okafor et al., 2015; Sando et al., 2014; Shimoda et al., 2017; Warren et al., 2015). Consequently, contents considered to exemplify D&A were extracted based on Bowser & Hill's seven categories: 1) physical abuse, 2) non-consented care, 3) non-confidential care, 4) non-dignified care, 5) discrimination based on specific patient attributes, 6) abandonment of care, and 7) detention in facilities. In addition, the following three categories derived from researcher's preliminary study were added: 8) inflicting physical harm, 9) unethical clinical practice, and 10) lack of empathy and compassion. As empirical indicators of each subconcept, a total of 22 items using five-point Likert-type scale: (1) *never*, to (5) *always* (Appendix 1, Section 4) are included. The researcher developed all items. The Cronbach alpha coefficient was .631 for the total 22 items, and indicated moderate internal consistency. Although the coefficient alpha was more robust at .7 ($\alpha = .703$) after reducing three items, which had unique answer tendencies, for the purpose of the present study, all 22 items were used in order to measure the prevalence of D&A.

Data collection.

Recruitment strategy of study participants.

The researcher and research assistants (RAs) visited to the regional or municipal, and district medical officer of participating regions with the approval of ethical clearance of the National Institute for Medical Research (NIMR) (Appendix 3) and the Muhimbili University of Health and Allied Sciences (MUHAS) (Appendix 4) to seek permission for the researchers to conduct this study at hospitals of those regions (Appendix 5). Subsequently, the researcher went to each hospital with RAs to explain to director and nursing officers in charge, or/and the gate keeper of the antenatal and the labor ward, and made a presentation about this study before starting data collection (Appendix 6, 7).

Participants were recruited by purposively sampling method through nursing officers in charge, or/and the gatekeeper of the antenatal and the labor ward. The researcher and RAs asked them to introduce some nurses and midwives who were eligible according to the inclusion criteria (Appendix 7), and subsequently, the researcher and RAs individually explained to those participants about the contents of the study by using

printed documents (Appendix 8). The participants were instructed that putting the completed questionnaire in the collection big envelope was regarded as their agreement to participate in this study. Likewise, the participants were informed that non-participation did not influence their employment status or relationships. Also they were informed that the director was not involved in any way in the study.

Procedure of data collection.

The questionnaire was self-administered. Combining placement method and group test were done according to the facilities' condition to collect data and based on the principles of voluntarily participation. The participants were informed about the purpose, methods, and ethical considerations by the researcher or/and RAs, and the participation request (Appendix 8), the questionnaire (Appendix 1), a self-seal opaque envelope, and a token gift was given to those who participated in this study. The opaque collecting big envelopes were put at the nurse stations of the antenatal and labor wards. After completing the questionnaire, the participants were required to put it in the collecting big envelopes. Completion of the questionnaire and returning it to the collecting big envelope was regarded as their agreement to participate in this study. The total number of pages of the questionnaire was 14, and the time required for completing it was 20 to 30 minutes. The researcher or RA collected the completing questionnaires, and only the researcher opened them.

The data related to characteristics of each facility were answered by the nursing officers in charge, or/and the gatekeeper of the antenatal and labor ward after gaining permission to conduct the study at the hospital (Appendix 2). Moreover, the researcher sought verbal permission from the nursing officer in charge, or/and the gatekeeper of the antenatal and labor ward at each facility to collect obstetrical statistics data from the records.

Hiring and training research assistants.

Native Tanzanian RAs were the interpreters and translators (Kiswahili-English). The RAs had one day training by the researcher to assist with data collection. The training included education on the purpose and objectives of the study, procedure of data

collection, and ethical considerations. In addition, RAs were hired from outside of MUHAS SON and participating settings.

Data Analysis

The statistical analysis was performed to answer the following research questions.

1. What is the estimated prevalence and frequency of nurses' and midwives' D&A of women during facility-based childbirth?
2. Which factors emerged in 1) nurses' and midwives' individual and 2) facility factors that might be important determinants of committing D&A?

The analyses were performed using SPSS version 22 J. statistical software. Descriptive statistics were used to summarize the participants' and facilities' background. Categorical variables were presented as numbers (%) and continuous variables were presented as means and standard deviations (SD). To examine the bivariate relationships between D&A behaviors and key demographic factors, nurses' and midwives' working condition, nurses' and midwives' attitudinal, and facility's variables, *t*-tests, one-way analysis of variance, and calculation of correlation coefficients were used. Moreover, all the facility data was inputted and treated as midwives' individual data for each facility. Multivariate analysis was used to examine the relation of selected variables on nurses' and midwives' D&A behaviors and to model. Level of significance was set at $p < 0.05$, two-sided. The academic supervisor and statistician oversaw the research and analyses process.

Ethical Consideration

The study was conducted based on the principles of ethics such as harmlessness, voluntarily participation, anonymity, and protection of privacy and personal information. The following considerations were written on the participation request (Appendix 8), and were informed participants by the researcher or research assistants.

Informed consent.

The participants were informed that putting the completed questionnaire in the collection big envelopes was regarded as their agreement to participate in this study.

Likewise, the participants were informed that non-participation would not influence their status or relationships. The participants were informed about the purpose, methods, and ethical considerations by the researcher or/and RAs, and the participation request (Appendix 8), the questionnaire (Appendix 1), a self-seal opaque envelope, and token gifts were given to all those who participated in this study.

Ensuring safety of participants.

The participants were informed that they did not need to answer any questions, if they did not want to, and they did not incur any physical injury or harm due to this study. If the answering questions, however, evoked their unwanted memories of disrespectful and abusive care, they always could make contact with the researcher or research assistants to get counseling from a professional.

Protection of privacy.

The participants were informed that the information they provided the researcher was used for this study only. All the information, which were answered on the questionnaire remained anonymous and never identified by using serial number.

Data management.

All the paper data of the questionnaire were managed as electronic data using a personal computer. All the electronic data has been kept and managed using the password-locked computer to be private and secure. Also, all the paper data has been kept in the private locker in the researcher's university. All the data will be kept at least five years after this study is finished. Then, the electronic data will be deleted from the computer and the paper data will be shredded.

Approval of ethical review boards.

The researcher sought ethical approval from the: the Ethics Committee of St. Luke's International University (16-A002), the Ethics Committee of National Institute for Medical Research (NIMR), Tanzania (Appendix 3), and Muhimbili University of Health and Allied Sciences (MUHAS) Research and Publication Committee (Appendix 4).

Results

During this study, 456 questionnaires were distributed to nurses, midwives, and nursing assistants who were eligible, and all of them participated in this study (response rate 100%). Of these, 61 cases, which had any missing data for question items of D&A behaviors and five cases, which had more than 10% missing data for the IWS were excluded from the analysis. Therefore 391 participants were included (ratio of valid responses 84.1%): 103 from referral level hospitals, 101 from regional level hospitals, 93 from district level hospitals, and 94 from health centers. Also missing data of the IWS were replaced with mode value.

Characteristics of Participants and Health Facilities

The mean age of participants was 34.2 ± 8.29 (range 22-59) with 8.5 ± 7.94 years of experience as nurses and midwives (range 0-45). Almost all participants (87.5 %) were female and lived with family members (84.7%). Most of them had children (79.8%) and about half (56.8%) of them had children under five years' old. Regarding educational background, the majority (97.0%) had completed upper college and had at least a diploma as nursing qualification (83.1%). Approximately 95% of participants were enrolled or registered nurse - midwives and a few nursing assistants (3.8%) were also included. Many participants (74.2%) had conducted a delivery quite recently, and the average number of total deliveries conducted in the last month was 24.8 ± 27.40 (range 0 - 200) (Table 4).

The mean working hours per week was 49.4 ± 22.1 (range 2-150), and more than 60% of participants worked the night shift, as shown in Table 5. There were few differences among four facility levels for working conditions except for the condition of overtime work and breaks during shifts. Only 23.3 % of participants of health centers were paid for the overtime work, whereas more than 60% of them were paid at higher-level facilities, 65.3% at referral facilities and 60.4% at regional facilities. Likewise, many participants (62.7 %), who worked at health centers could take a break during the night shift, only 35 % of participants from referral levels could take breaks.

Table 4 Sociodemographic and working experience characteristics of participants (N=391)

		N (%)	Mean [SD]	Range
<i><u>Sociodemographic Characteristics</u></i>				
Age			34.2 [8.29]	22 - 59
Gender	Male	49 (12.5)		
	Female	338 (86.4)		
	Missing value	4 (1.0)		
Family members				
Living with family members	Yes	331 (84.7)		
	No	60 (15.3)		
Having children	Yes	312 (79.8)		
	No	79 (20.2)		
Having children aged under 5 years	Yes	222 (56.8)		
	No	162 (41.4)		
	Missing value	7 (1.8)		
Having to care for other persons at home	Yes	318 (81.3)		
	No	70 (17.9)		
	Missing value	3 (0.8)		
Having a house keeper	Yes	249 (63.7)		
	No	133 (34.0)		
	Missing value	9 (2.3)		
Educational background				
Level of educational attainment	Primary	1 (0.3)		
	Secondary	5 (1.3)		
	College	339 (86.7)		
	University	35 (9.0)		
	Post graduate school	5 (1.3)		
	Missing value	6 (1.5)		
Nursing qualification (N=379)	Certificate	153 (39.1)		
	Diploma	172 (44.0)		
	Degree	42 (10.8)		
	Post graduate	4 (1.0)		
	Missing value	8 (2.0)		
Employment status				
Occupation	Enrolled nurse-midwife	148 (37.9)		
	Registered nurse- midwife	226 (57.8)		
	Nursing assistant	12 (3.8)		
	Missing value	5 (1.3)		
Job status level (N=379)	Head nurse	23 (5.9)		
	In-charge nurse	86 (22.0)		
	Staff nurse	256 (65.5)		
	Missing value	14 (3.6)		
<i><u>Work experiences</u></i>				
Length of the nursing experience (years)			8.5 [7.94]	0 - 45
Number of deliveries conducted in the last month			24.8 [27.40]	0 - 200
The time of last conducted delivery	≤ 7 days	290 (74.2)		
	7 days – 1 month	43 (11.0)		
	2 – 6 month	16 (4.1)		
	7 – 12 month	11 (2.8)		
	1 ≤ 3 years	24 (6.1)		
	Missing value	7 (1.8)		

Table 5 Participants' working conditions across four health facility levels($N=391$)

	Total	Health facility level			
		Referral ($n = 103$)	Regional ($n = 101$)	District ($n = 93$)	Health center ($n = 94$)
	N (%) Mean [SD]	n (%) Mean [SD]	n (%) Mean [SD]	n (%) Mean [SD]	n (%) Mean [SD]
Commute time to work (<i>minutes</i>) ($N= 384$)	77.0 [51.6]	83.8 [55.8]	92.8 [49.1]	78.8 [47.7]	50.4 [43.1]
Working hours per week (<i>hours</i>) ($N=362$)	49.4 [22.1]	53.9 [21.8]	50.5 [21.3]	46.4 [21.8]	46.5 [23.1]
Number of day-off per month (<i>days</i>) ($N=378$)	7.1 [2.1]	6.9 [2.4]	6.8 [1.6]	7.1 [1.9]	7.8 [2.1]
Monthly salary (<i>USD</i>) ($N=300$)	239.8 [105.0]	295.4 [107.1]	214.9 [91.4]	214.5 [110.1]	223.5 [85.9]
Night shifts					
Working in night shift					
Yes	266 (68.0)	79 (78.0)	54 (55.0)	68 (73.9)	65 (70.7)
No	118 (30.2)	22 (22.0)	45 (46.0)	24 (26.1)	27 (29.3)
Missing value	7 (1.8)	2 (1.9)	2 (2.0)	1 (1.1)	2 (2.1)
Consecutive night shifts (<i>days</i>) ($N= 253$)	2.6 [1.9]	2.8 [1.7]	2.2 [1.1]	2.6 [2.0]	2.6 [2.4]
Sleeping time during night shifts (<i>minutes</i>) ($N= 248$)	29.9 [69.3]	31.9 [75.0]	31.2 [76.5]	22.2 [62.4]	34.7 [63.1]
Overtime					
Working overtime					
Yes	177 (45.3)	50 (49.0)	50 (50.5)	45 (48.4)	32 (34.0)
No	211 (54.0)	52 (51.0)	49 (49.5)	48 (51.6)	62 (66.0)
Missing value	3 (0.8)	1 (1.0)	2 (2.0)	0 (0.0)	0 (0.0)
Number of days working overtime per week (<i>days</i>)		1.4 [1.8]	1.5 [1.9]	1.3 [1.6]	0.9 [1.7]
The hours of overtime at once (<i>minutes</i>)		115.2 [163.3]	123.7 [172.2]	120.5 [197.0]	82.2 [172.1]
Paid for the overtime work ($N= 180$)					
Yes	84 (46.7)	32 (65.3)	29 (60.4)	16 (35.6)	7 (23.3)
No	88 (48.9)	17 (34.7)	19 (39.6)	29 (64.4)	23 (76.7)
Missing value	8 (2.0)	2 (1.9)	4 (4.0)	0 (0.0)	2 (2.1)
Having any side job					
Yes	49 (12.5)	10 (9.7)	12 (11.9)	13 (14.0)	14 (14.9)
No	332 (85.0)	93 (90.3)	89 (88.1)	80 (86.0)	80 (85.1)
Missing value	12	4 (3.9)	3 (3.0)	3 (3.2)	2 (2.1)
Taking breaks during shift					
Morning shift (6 h: 7 • 8 am - 1 • 2 pm)					
Yes	237 (60.6)	49 (49.0)	72 (72.0)	49 (52.7)	67 (71.3)
No	150 (38.4)	51 (51.0)	28 (28.0)	44 (47.3)	27 (28.7)
Missing value	4 (1.0)	3 (2.9)	1 (1.0)	0 (0.0)	0 (0.0)
Evening shift (6 h: 1 • 2 pm - 7 • 8 pm)					
Yes	250 (63.9)	53 (53.5)	70 (72.2)	57 (62.0)	70 (75.3)
No	131 (33.5)	46 (46.5)	27 (27.8)	35 (38.0)	23 (24.7)
Missing value	10 (2.6)	4 (3.9)	4 (4.0)	1 (1.1)	1 (1.1)
Night shift (12 h: 7 • 8 pm - 7 • 8 am) ($N = 273$)					
Yes	126 (46.2)	28 (35.0)	27 (50.0)	29 (42.0)	42 (62.7)
No	144 (52.8)	52 (65.0)	27 (50.0)	40 (58.0)	25 (37.3)
Missing value	3 (1.1)	1 (1.0)	2 (2.0)	0 (0.0)	0 (0.0)

Participants' Work Satisfaction

Participants' work satisfaction was measured using the Index of Work Satisfaction (IWS), which was developed by Stamps (1997). There are six components and two subscales in the measurement tool including: pay, autonomy, task requirements, organizational policy, interaction (between nurses and nurses, and between nurses and physicians), and professional status. The total score ranges from 44 to 308 points. The mean of the total score of participants was 177.4 ± 26.7 , which was about the mid-value between that of the highest and lowest score (Table 6). There were some differences among facility levels as the IWS total score and the score of organizational policies were significantly higher at health centers than at other three facility levels ($p < 0.001$). Additionally, the score of task requirements was also significantly higher at health centers than referral levels ($p < 0.05$) as well as the score of interaction was higher at health centers than referral and regional levels ($p < 0.05$).

Table 6 Comparison of participants' work satisfaction across four facility levels ($N=391$)

	Health facility level					P - value
	Total	Referral (n = 103)	Regional (n = 101)	District (n = 93)	Health center (n = 94)	
	Mean [SD]	Mean [SD]	Mean [SD]	Mean [SD]	Mean [SD]	
IWS total score (Range: 44 - 308)	177.4 [26.7]	172.4 [26.0]	175.2 [26.4]	175.4 [27.3]	187.8 [25.0]	**
Components						
Pay (Range: 6 - 42)	13.9 [5.3]	15.2 [6.4]	13.5 [4.3]	12.9 [5.1]	14.0 [5.1]	*
Autonomy (Range: 8 - 56)	34.7 [7.6]	34.3 [7.7]	34.5 [7.4]	34.3 [7.6]	35.9 [7.7]	n.s.
Task Requirement (Range: 6 - 42)	19.6 [4.6]	18.7 [5.1]	19.7 [4.2]	19.4 [4.7]	20.6 [4.4]	*
Organizational Policies (Range: 7 - 49)	25 [7.1]	22.9 [7.1]	24.4 [7.6]	24.3 [6.0]	28.9 [5.9]	**
Professional Status (Range: 7 - 49)	38.4 [5.8]	37.8 [6.0]	37.8 [5.9]	38.6 [6.0]	39.5 [5.1]	n.s.
Interactions (Range: 10 - 70)	47.4 [8.3]	45.8 [7.8]	46.3 [8.6]	47.8 [8.5]	49.9 [7.8]	**
Nurse and Nurse (Range: 5- 35)	24.8 [5.2]	24.0 [4.7]	23.7 [5.4]	25.5 [5.4]	26.3 [4.7]	**
Nurse and Physician (Range: 5- 35)	22.6 [4.8]	21.8 [4.7]	22.6 [4.7]	22.4 [5.2]	23.6 [4.6]	n.s.

Note: ** $P < 0.01$, * $P < 0.05$

Obstetric Statistics, Resources and Health Systems of Study Settings

The regional level facilities had the largest number of annual vaginal deliveries (mean = $10,013.8 \pm 4,040.0$) whereas the annual cesarean sections were the highest at the referral level facilities (mean = $3,114.2 \pm 1,943.4$). The number of annual cesarean sections at health centers was extremely low (mean = 8.5 ± 22.8) since most health centers did not have surgical capacity. The number of staff and beds were relative to the scale of each facility. There were few antenatal wards, which had partitions between beds (30.7%) though almost 70% of facilities had partitions in the labor wards. Almost all facilities had a rule restricting the right of women to have a birth-companion during childbirth (93.4%). In terms of nursing management, more than 90 % of facilities had functional rules for nurses and midwives. Usually nurses and midwives were assigned a role based more on task (89.3 %) than patients (69.8%). Specifically, at the lower level facilities, district level and health centers, fewer nurses and midwives were assigned based on patients (47.3% and 47.9% respectively) than the higher level facilities: referral and regional level (100% and 80.2% respectively). Furthermore, regarding in-service education, about 80% of facilities had a supervising system for new nurses and midwives (Table 7).

Table 7 Working environment of each health facility level ($N= 391$)

			Health facility level				
			Total	Referral	Regional	District	Health center
			($n = 391$)	($n = 103$)	($n = 101$)	($n = 93$)	($n = 94$)
			N (%), Mean [SD]	N (%), Mean [SD]	N (%), Mean [SD]	N (%), Mean [SD]	N (%), Mean [SD]
Working environment							
Obstetrics statistics							
Annual number of vaginal delivery			5246.1 [4122.5]	3665.5 [422.0]	10013.8 [4040.0]	5587.4 [2967.3]	1217.8 [921.4]
Annual number of cesarean section			1469.5 [1573.2]	3114.2 [1943.4]	1789.5 [574.8]	777.1 [373.0]	8.5 [22.8]
Annual number of maternal deaths			21.9 [34.1]	65.2 [40.7]	13.6 [4.59]	3.1 [1.48]	0.5 [1.2]
Annual number of still births			202.6 [232.2]	320.0 [293.4]	355.0 [186.4]	85.5 [44.0]	12.0 [12.9]
Resources							
Number of nurses and midwives	day shift		5.2 [2.7]	7.1 [0.83]	7.4 [2.7]	3.3 [1.0]	2.8 [1.0]
	evening shift		3.5 [2.1]	4.1 [0.83]	5.7 [2.5]	2.4 [0.7]	1.6 [0.5]
	night shift		3.7 [2.1]	5.1 [0.83]	5.4 [2.4]	2.6 [0.9]	1.6 [0.5]
Number of doctors	day shift		2 [1.3]	3.3 [1.2]	1.8 [0.7]	1.9 [0.7]	1.0 [1.1]
	evening shift		1.1 [0.8]	1.6 [0.5]	1.3 [0.7]	1.1 [0.8]	0.4 [0.5]
	night shift		1 [1.0]	2.3 [0.5]	0.5 [0.5]	0.8 [0.8]	0.3 [0.6]
Number of nursing assistants	day shift		3.6 [2.1]	5.6 [1.7]	4.8 [1.4]	2.1 [0.7]	1.5 [0.6]
	evening shift		2.3 [1.5]	4.4 [0.5]	2.1 [1.3]	1.4 [0.5]	1.1 [0.3]
	night shift		2.1 [1.5]	4.4 [0.5]	1.8 [0.7]	1.3 [0.5]	0.9 [0.3]
Number of beds	Antenatal ward		15.5 [10.3]	31.6 [8.6]	17.4 [5.5]	13.2 [3.0]	4.7 [2.6]
	Labor ward		8.3 [6.2]	14.8 [5.4]	10.2 [4.4]	4.3 [2.1]	2.8 [2.2]
Partition between beds							
Antenatal ward	Yes		120 (30.7)	63 (61.2)	15 (14.9)	22 (23.7)	20 (21.3)
	No		271 (69.3)	40 (38.8)	86 (85.1)	71 (76.3)	74 (78.7)
Labor ward	Yes		265 (67.8)	103 (100.0)	50 (49.5)	52 (56.0)	60 (63.8)
	No		126 (32.2)	0 (0.0)	51 (50.5)	41 (44.1)	34 (36.2)
Restricting the presence of a birth companion	Yes		365 (93.4)	103 (100.0)	101 (100.0)	75 (80.6)	86 (91.5)
	No		26 (6.6)	0 (0.0)	0 (0.0)	18 (19.4)	8 (8.5)
Functional roles of nurse-midwives	Yes		363 (92.8)	103 (100.0)	101 (100.0)	75 (80.6)	84 (89.4)
	No		28 (7.2)	0 (0.0)	0 (0.0)	18 (19.4)	10 (10.6)
Job assignment system	Yes		349 (89.3)	103 (100.0)	70 (69.3)	93 (100.0)	83 (88.3)
	No		42 (10.7)	0 (0.0)	31 (30.7)	0 (0.0)	11 (11.7)
Patient assignment system	Yes		273 (69.8)	103 (100.0)	81 (80.2)	44 (47.3)	45 (47.9)
	No		118 (30.2)	0 (0.0)	20 (19.8)	49 (52.7)	49 (52.1)
A supervision system for new nurse-midwives	Yes		327 (83.6)	103 (100.0)	84 (83.2)	79 (84.9)	61 (64.9)
	No		64 (16.4)	0 (0.0)	17 (16.8)	14 (15.1)	33 (35.1)

Prevalence of D&A

Table 8 displays the prevalence and frequency of D&A behaviors. The majority of participants ($n = 374$, 97.5%) had engaged in at least one form of D&A behavior out of the 22 and includes seldom to always responses. Most participants indicated that they had engaged in at least two D&A behaviors with a mean of 5.15 ± 3.39 (range 0-18).

The most common D&A was “not draping women’s legs when giving a vaginal examination” (66.5%). Subsequently, more than 40% of participants reported that they had “not obtained consent for performing episiotomy” (46.3 %) and were “conducting deliveries even when many staff or students present” (41.9%). Approximately 35% of participants did “not tell the results of blood pressure reading” (38.9%), “blamed adolescent girls for being too young to get pregnant” (35.5%), and did “not use anesthesia for episiotomy or suturing the perineal tears” (35.0 %). Seven forms of D&A were reported from about 20% of participants: “scolding when women do not comply” (27.6%), “threatening when women do not comply” (26.9%), “not offering words of sympathy for women who suffer from labor pains” (26.6%), “not obtaining consent for performing vaginal examination” (24.0%), “asking women about their private information in public” (24.0%), “preventing discharge until women completed payment” (24.0%), and “slapping women’s legs to open during second stage of labor” (21.5%).

Remaining nine behaviors were reported for less than 20% of participants. Only about 10-15% of participants: “prohibited eating or drinking even when labor progress was normal (17.4%), “ignored yelling women” (15.6%), “failed to arrive in time to conduct delivery” (10.7%), and did “not check fetal heart rate until neonate was born” (10.5%). Also, four behaviors were reported by a single-digit percentage of participants: “using fragment of broken glass ampule or needles for artificial rupture of membrane” (7.4%); “charting false results to complete partograph” (5.9%); “pushing abdomen to rush delivery even when not an emergency” (5.6%); and “refusing to take care of HIV positive women” (2.8%). Moreover, no more than two respondents reported they, “asked for bribes for their own services” (0.5%).

Table 8 Prevalence and frequency distribution of participants' self-reported D&A behavior toward women(*N*=391)

	Enacted					Not enacted
	Total <i>N</i> (%)	Always <i>n</i> (%)	Often <i>n</i> (%)	Sometimes <i>n</i> (%)	Seldom <i>n</i> (%)	Never <i>N</i> (%)
The forms of D&A with 20% or more of the total						
Not draping women's legs when giving vaginal examination	260 (66.5)	127 (32.5)	60 (15.3)	39 (10.0)	34 (8.7)	131 (33.5)
Not obtaining consent for performing episiotomy	181 (46.3)	16 (4.1)	39 (10.0)	53 (13.6)	73 (18.7)	210 (53.7)
Conducting deliveries even when many staff or students present	164 (41.9)	31 (7.9)	34 (8.7)	24 (6.1)	75 (19.2)	227 (58.1)
Not telling the results of blood pressure reading	152 (38.9)	3 (0.8)	28 (7.2)	36 (9.2)	85 (21.7)	239 (61.1)
Blaming adolescent girls for being too young to get pregnant	139 (35.5)	9 (2.3)	13 (3.3)	41 (10.5)	76 (19.4)	252 (64.5)
Not using anesthesia for episiotomy or suturing the perineal tears	137 (35.0)	25 (6.4)	21 (5.4)	18 (4.6)	73 (18.7)	254 (65.0)
Scolding when women do not comply	108 (27.6)	5 (1.3)	6 (1.5)	35 (9.0)	62 (15.9)	283 (72.4)
Threatening when women do not comply	105 (26.9)	8 (2.0)	17 (4.3)	24 (6.1)	56 (14.3)	286 (73.1)
Not offering words of sympathy for women who suffer from labor pains	104 (26.6)	7 (1.8)	6 (1.5)	7 (1.8)	84 (21.5)	287 (73.4)
Not obtaining consent for performing vaginal examination	94 (24.0)	2 (0.5)	7 (1.8)	15 (3.8)	70 (17.9)	297 (76.0)
Asking women about their private information in public	94 (24.0)	52 (13.3)	20 (5.1)	5 (1.3)	17 (4.4)	297 (76.0)
Preventing discharge until women completed payment	94 (24.0)	14 (3.6)	19 (4.9)	26 (6.6)	35 (9.0)	297 (76.0)
Slapping women's legs to open during second stage of labor	84 (21.5)	4 (1.0)	4 (1.0)	26 (6.6)	50 (12.8)	307 (78.5)
The forms of D&A with less than 20% of the total						
Prohibiting eating or drinking even when labor progress is normal	68 (17.4)	8 (2.0)	7 (1.8)	18 (4.6)	35 (9.0)	323 (82.6)
Ignore yelling women	61 (15.6)	8 (2.0)	6 (1.5)	14 (3.6)	33 (8.5)	330 (84.4)
Fail to arrive in time to conduct delivery	42 (10.7)	4 (1.0)	2 (0.5)	5 (1.3)	31 (7.9)	349 (89.3)
Not checking fetal heart rate until neonate is born	41 (10.5)	11 (2.8)	8 (2.0)	4 (1.0)	18 (4.6)	350 (89.5)
Using fragment of broken glass ampule or needles for AROM*	29 (7.4)	4 (1.0)	0 (0.0)	12 (3.1)	13 (3.3)	362 (92.6)
Charting false results to complete partograph	23 (5.9)	0 (0.0)	1 (0.3)	5 (1.3)	17 (4.4)	368 (94.1)
Pushing abdomen to rush delivery even when not an emergency	22 (5.6)	1 (0.3)	1 (0.3)	2 (0.5)	18 (4.6)	369 (94.4)
Refusing to take care of HIV positive women	11 (2.8)	5 (1.3)	2 (0.5)	0 (0.0)	4 (1.0)	380 (97.2)
Asked for bribes for their own services	2 (0.5)	1 (0.3)	0 (0.0)	0 (0.0)	1 (0.3)	389 (99.5)

Note: D&A=disrespect & abuse; *AROM=artificial rupture of membranes

Table 9 Prevalence of participant's experience of D&A according by category (N=391)

	N (%)	Mean of each category N (%)
Non-confidential care		172.7 (44.2)
Not draping women's legs when giving vaginal examination	260 (66.5)	
Conducting deliveries even when many staff or students present	164 (41.9)	
Asking women about their private information in public	94 (24.0)	
Non-consented care		142.3 (36.4)
Not obtaining consent for performing episiotomy	181 (46.3)	
Not telling the results of blood pressure reading	152 (38.9)	
Not obtaining consent for performing vaginal examination	94 (24.0)	
Lack of empathy and compassion		104 (26.6)
Not offering words of sympathy for women who suffer from labor pains	104 (26.6)	
Non-dignified care		93.7 (24.0)
Scolding when women do not comply	108 (27.6)	
Threatening when women do not comply	105 (26.9)	
Prohibiting eating or drinking even when the labor progress is normal	68 (17.4)	
Physical abuse		81 (20.7)
Not using anesthesia for episiotomy or suturing the perineal tears	137 (35.0)	
Slapping women's legs to open during second stage of labor	84 (21.5)	
Pushing abdomen to rush delivery even when not an emergency	22 (5.6)	
Discrimination based on specific patient attributes		75 (19.2)
Blaming adolescent girls for being too young to get pregnant	139 (35.5)	
Refusing to take care of HIV positive women	11 (2.8)	
Abandonment of care		48 (12.3)
Ignore yelling women	61 (15.6)	
Fail to arrive in time to conduct delivery	42 (10.7)	
Not checking fetal heart rate until neonate is born	41 (10.5)	
Detention in facilities		48 (12.3)
Preventing discharge until women completed payment	94 (24.0)	
Asked for bribes for their own services	2 (0.5)	
Inflicting physical harm		29 (7.4)
Using fragment of broken glass ampule or needles for AROM*	29 (7.4)	
Unethical clinical practice		23 (5.9)
Charting false results to complete partograph	23 (5.9)	

Note: D&A=disrespect & abuse; *AROM=artificial rupture of membranes

According to the frequency distribution, participants had a higher tendency to answer “sometimes” or “several” than “always” or “often”, except two behaviors: “not putting anything on her legs when giving vaginal examination” and “asking women about their private information in public”.

In addition, the mean number and percentage for each D&A form within each category are showed in Table 9. On comparing the prevalence of D&A among the categories, relatively high rated categories were those more likely to violate women’s rights and to exert their negative experiences with childbirth, such as ‘non-confidential care (44.2 %)’ and ‘non-consented care (36.4 %)', and ‘non-dignified care (24.0 %). Subsequently, around 10 – 20 % of participants enacted physical abuse (20.7 %), abandonment of care (12.3 %), and inflicting physical harm (7.4 %), those, which can affect delivery outcomes directly.

Related Factors of D&A

Bivariate relationship between assumed variables and D&A.

In order to select variables, which may relate to D&A behaviors, the bivariate relationship between participants’ D&A behaviors score and their individual and facilities’ factors were examined using *t* test and Pearson’s correlation coefficient. All 22 items regarding D&A, which were asked using five-point Likert-type scale, were summed and treated as a total score of those behaviors (ranged 22 to 110).

There was no significant correlation between participants’ sociodemographic characteristics and D&A score (Table 10, 11). Family structure, educational background, employment status, and individual working experiences did not relate to D&A behaviors. However, there were significant differences between nurses-midwives who worked at the facilities where there was some form of supervision for new nurses-midwives, and where there was none (MD = -1.86, 95%CI: -3.69 - -0.02). The later had higher D&A score than the former.

Regarding working conditions and working environment, there were also no variables, which had significant correlations with D&A (Table 10, 11, 12). The commute to work, condition of night shift and overwork, salary, side jobs, and frequency of the

breaks during each shift did not have any relation to those behaviors. As facility factors, the number of staff, beds, and deliveries and deaths also did not have any relationship with D&A score.

Unlike other variables, concerning working satisfaction, three variables out of the IWS: ‘autonomy (amount of job-related independence, initiative, and freedom, either permitted or required in daily work activities)’, ‘professional status’ (overall importance or significance felt about one’s job, both in one’s view and in the view of others), and ‘interaction among nurses (opportunities presented for both formal and informal social and professional contact during working hours)’, weakly correlated to D&A behaviors. As shown in Table 13, there was a significant negative correlation between D&A scores and autonomy ($r = - 0.213, p < 0.001$), professional status ($r = - 0.259, p < 0.001$), and interaction between nurses and nurses ($r = - 0.240, p < 0.001$).

Table 10 Bivariate relationship between D&A behaviors score (range: 22- 110) and participants' factors using *t*-test or one-way ANOVA(*N* = 391)

	<i>N</i>	Mean (SD)	MD	95%CI	<i>P</i> -value
<u>Sociodemographic characteristics</u>					
Gender (<i>N</i> =387)					
Male	49	33.5 (9.37)	1.26	-0.81 - 3.32	n.s.
Female	338	32.2 (6.43)			
Having a housekeeper (<i>N</i> =382)					
Yes	249	31.9 (6.26)	0.95	-0.49 - 2.39	n.s.
No	133	32.9 (7.75)			
Level of educational attainment (<i>N</i> =385)					
Ordinary/advanced secondary school	6	35.2 (6.52)	-	-	n.s.
College	339	32.5 (6.98)			
University / post graduate school	40	31.6 (6.06)			
Nursing qualification (<i>N</i> =371)					
Certificate	153	32.3 (7.00)	-	-	n.s.
Diploma	172	32.1 (6.10)			
Degree	42	33.6 (9.67)			
Post graduate	4	31.0 (2.58)			
Occupation (<i>N</i> =386)					
Enrolled nurse midwife	148	32.3 (7.00)	-	-	n.s.
Registered nurse midwife	226	32.3 (6.87)			
Nursing assistant	12	33.4 (5.70)			
Job status level (<i>N</i> =365)					
Head nurse	23	31.7 (5.21)	-	-	n.s.
In-charge nurse	86	32.2 (6.18)			
Staff nurse	256	32.5 (7.28)			
<u>Working experiences</u>					
The time of last conducted delivery (<i>N</i> =384)					
≤ 7 days	290	32.1 (6.89)	-	-	n.s.
7 days - 1 month	43	32.6 (7.41)			
2 - 6month	16	35.3 (7.52)			
7 - 12 month	11	33.2 (5.81)			
12 month ≤	24	33.0 (6.29)			
<u>Working condition</u>					
Paid for the overtime work (<i>N</i> =172)					
Yes	88	32.9 (6.31)	0.52	-1.49 - 2.52	n.s.
No					
Having any side job					
Yes	49	33.8 (9.19)	-1.57	-3.62 - 0.49	n.s.
No	342	32.2 (6.46)			
<u>Working environment</u>					
Facility level					
Referral	103	33.2 (6.28)	-	-	n.s.
Regional	101	31.9 (6.63)			
District	93	31.5 (6.10)			
Health center	94	32.9 (8.27)			
Partition between beds, <i>n</i> (%)					
Antenatal ward					
Yes	120	32.8 (6.16)	0.56	-0.92 - 2.04	n.s.
No	271	32.2 (7.16)			
Labor ward					
Yes	265	32.6 (6.93)	0.70	-0.76 - 2.16	n.s.
No	126	31.9 (6.75)			
Restricting the presence of a birth companion					
Yes	365	32.3 (6.89)	-1.03	-3.77 - 1.71	n.s.
No	26	33.3 (6.54)			
Functional roles of nurse-midwives					
Yes	363	32.5 (6.93)	0.95	-1.70 - 3.60	n.s.
No	28	31.5 (6.04)			
Job assignment system					
Yes	349	32.5 (6.86)	0.81	-1.40 - 3.01	n.s.
No	42	31.7 (6.96)			
Patient assignment system					
Yes	273	32.5 (6.95)	0.36	-1.13 - 1.85	n.s.
No	118	32.1 (6.69)			
A supervision system for new nurse-midwives					
Yes	327	32.1 (6.65)	-1.86	-3.69 - -0.02	0.048*
No	64	33.9 (7.75)			

Note: * *P* < 0.05; D&A=disrespect & abuse

Table 11 Bivariate relationship between D&A behaviors score (range: 22- 110) and participants’ factors using Pearson’s correlation coefficient (*N* = 391)

	Age	The number of family member who live with	The number of children	The number of children under 5 years old	The number of family members who need to be taken care	Years of nursing experience	The number of conducted deliveries in last month	The commute time	Working hours per week	Night duties in last month	Consecutive night duties	The number of day-off	Sleeping time during night shifts	Number of days working overtime per week	The hours of overtime at once	Monthly salary	Taking breaks during morning shift	Taking breaks during evening shift	Taking breaks during night shift	Basic knowledge	D&A scores
Age	1																				
The number of family member who live with	.525**	1																			
The number of children	.611**	.735**	1																		
The number of children under 5 years old	-.143**	.275**	.336**	1																	
The number of family members who need to be taken care	.181**	.418**	.376**	.247**	1																
Years of nursing experience	.870**	.451**	.508**	-.127**	.138**	1															
The number of conducted deliveries in last month	-.142**	-.052	-.048	.105*	.021	-.119*	1														
The commute time	.064	.153**	.096*	.029	.113*	.040	-.027	1													
Working hours per week	.070	.089	.085	-.079	.088	.027	.060	.109*	1												
Night duties in last month	-.147**	-.079	-.096*	.011	-.032	-.175**	.234**	.043	.094	1											
Consecutive night duties	.142*	.187**	.140*	.000	.071	.106	-.088	.139*	-.029	.214**	1										
The number of day-off	-.094	-.016	-.037	.101*	-.063	-.072	-.124*	-.083	-.092	-.006	-.007	1									
Sleeping time during night shifts	.001	-.077	-.080	-.025	-.011	.098	-.010	.111	-.086	-.071	.020	.074	1								
Number of days working overtime per week	.053	.118*	.146**	.024	.105*	.041	.076	.082	.091	.111*	.300**	-.125*	.018	1							
The hours of overtime at once	.047	.104*	.078	-.007	.130**	-.020	.066	.085	.141**	.119*	.205**	-.151**	.026	.627**	1						
Monthly salary	.211**	.117*	.034	-.017	-.021	.247**	-.028	.087	.111*	.031	.006	.098	-.037	-.070	-.100	1					
Taking breaks during morning shift	-.049	-.101*	-.112*	.002	-.068	-.003	-.036	-.035	.020	-.085	-.037	.052	.088	.045	-.072	-.031	1				
Taking breaks during evening shift	-.018	-.056	-.054	-.031	-.033	-.017	-.066	-.059	.020	-.109*	-.114	.024	.046	.026	-.033	-.026	.675**	1			
Taking breaks during night shift	-.123*	-.142*	-.104	-.115*	-.033	-.101	-.091	-.194**	-.101	-.057	-.037	.050	.112	-.109	-.181**	-.082	.472**	.484**	1		
Basic knowledge	.119*	-.007	.000	-.059	-.026	.094	-.070	-.037	-.040	.011	-.039	.093	-.086	-.004	-.062	.163**	-.076	-.033	-.036	1	
D&A scores	.003	-.001	.020	-.018	-.078	-.015	-.014	-.075	.123*	-.055	-.009	-.001	.149*	.024	.051	-.053	.068	.152**	.175**	.037	1
<i>N</i>	384	390	391	384	386	385	378	384	362	384	253	378	248	377	354	300	387	381	270	383	391

Note: ** *P* < 0.01, * *P* < 0.05; D&A=disrespect & abuse

Table 12 Correlation coefficient between obstetric statistics of each facility and D&A score

	The total number of nurses for three shifts	The total number of nursing assistants for three shifts	The total number of doctors for three shifts	The number of antenatal beds	The number of delivery beds	Annual number of vaginal delivery	Annual number of caesarian section	Annual number of maternal deaths	Annual number of still births	D&A scores
The total number of nurses for three shifts	1									
The total number of nursing assistants for three shifts	.442**	1								
The total number of doctors for three shifts	.664**	.769**	1							
The number of antenatal beds	.573**	.774**	.816**	1						
The number of delivery beds	.734**	.517**	.871**	.671**	1					
Annual number of vaginal delivery	.650**	.087	.091	.318**	.250**	1				
Annual number of caesarian section	.675**	.439**	.762**	.688**	.860**	.233**	1			
Annual number of maternal deaths	.497**	.452**	.746**	.807**	.774**	-.063	.935**	1		
Annual number of still births	.824**	.226**	.545**	.228**	.733**	.507**	.874**	.746**	1	
D&A scores	-.073	.095	.032	.053	-.011	-.091	-.046	-.014	-.105*	1
<i>N</i>	391	391	391	351	391	384	391	384	384	391

Note: ** $P < 0.01$, * $P < 0.05$; D&A=disrespect & abuseTable 13 Correlation between IWS and D&A score ($N=391$)

	Pay	Autonomy	Task Requirements	Organizational Policies	Professional Status	Interaction between nurses and nurses	Interaction between nurses and physicians	IWS total scores	D&A scores
Pay	1								
Autonomy	.249**	1							
Task Requirements	.285**	.426**	1						
Organizational Policies	.265**	.464**	.362**	1					
Professional Status	.113*	.399**	.243**	.274**	1				
Interaction between nurses and nurses	.030	.452**	.187**	.319**	.349**	1			
Interaction between nurses and physicians	.175**	.385**	.308**	.310**	.344**	.378**	1		
IWS total scores	.461**	.792**	.613**	.720**	.630**	.606**	.645**	1	
D&A scores	.023	-.213**	-.076	-.032	-.259**	-.240**	-.177**	-.230**	1

Note: ** $P < 0.01$, * $P < 0.05$; IWS=Inventory of Work Satisfaction; D&A=disrespect & abuse

Factors influencing D&A.

To develop a model for predicting nurses' and midwives' D&A behaviors based on their characteristics, working condition, and working environment, the multiple regression analysis was used. Variables which were significantly correlated with D&A behaviors total score, which were associated with an increase or decrease in the score uniformly, and which were consistent with the conceptual framework of the present study, were used by forward selection after controlling simultaneously for potential confounders. After comparing some models, which were extracted as candidates for predicting D&A behaviors, the following was retained as the best model, which was both statistically and clinically significant, and had comprehensibility (Table 14). There were no other suitable models, which had notable high determination coefficient even considering the following model in comparison, and those other models were also in a range of R^2 of < 2.0 .

The results of the multiple regression analysis by using the total score of D&A as a dependent variable indicated the five variables: 'working hours per week', 'taking a break during evening shift', 'professional status', 'interaction between nurses', and 'any type of supervision for new nurse-midwives', explained the variance with an R^2 of 0.143 ($P < 0.001$) (Table 14). D&A behaviors score increased along with an increase of working hours per week ($\beta = 0.109$, $p < 0.05$) and frequency of break during evening shift ($\beta = 0.156$, $p < 0.01$). On the other hand, D&A behaviors score decreased along with an increase of the score of 'professional status' ($\beta = - 2.213$, $p < 0.01$) and 'interaction between nurses' ($\beta = - 0.154$, $p < 0.01$). Also nurse midwives, who worked at the facilities where there were any type of supervision system for new nurse and midwives, scored lower than who did not ($\beta = - 0.138$, $p < 0.01$). Based on this analysis, it seemed that D&A behaviors of nurses and midwives were related to their working conditions, perception on their own status, relationships between colleagues, and in-service training.

Table 14 Multiple regression analysis of factors related to D&A behaviors

Independent variables	Dependent variable	
	D & A attitude questionnaire total	
	β	(95% CI)
Working hours per week	0.109 *	(0.003 — 0.059)
Taking a break during evening shift	0.156 **	(0.539 — 2.378)
Professional Status	- 2.213 **	(- 0.350 — - 0.119)
Interaction between nurses and nurses	- 0.154 **	(- 0.323 — - 0.062)
Any type of supervision for new nurse-midwives	- 0.138 **	(- 4.014 — - 0.679)
R^2	0.143	
Adjusted R^2	0.131	
Durbin - Watson ratio	1.946	

Note: ** $P < 0.01$, * $P < 0.05$, VIF < 5; D&A=disrespect & abuse

Discussion

Overview of the Prevalence of D&A in Tanzania

The results of the present study showed the prevalence of D&A by nurses' and midwives' self-reports from Tanzanian public health facilities. Up to the present time, there were no published studies about the providers' engaging in D&A behaviors as reported by the provider's side. The present study is one of the first study which focused on the provider's self-reports of behavior, and which was conducted at multiple settings: four different level of health facilities in three different regions. Nearly all participants had reported enacting at least one or two types of D&A.

In this study, all D&A behaviors mentioned as typical examples were also found in other studies, and were contained in the questionnaire, and more than half of those forms accounted for comparatively large percentages. The D&A behaviors with a high proportion were more likely to violate women's rights and to exert their negative experiences with childbirth, and were categorized as non-confidential care, non-consented care, and non-dignified care including verbal abuse. Although, the prevalence rates were relatively lower than those high-rated D&A behaviors, some participants enacted some types of D&A behaviors, which could affect delivery outcomes directly, such as those categorized as a physical abuse, abandonment of care, and inflicting physical harm.

Additionally, as a result of comparing D&A scores among facility levels, there were no significant differences. There were many differences between all studied facility levels including number of staffs, number of beds, and number of deliveries, however, those differences did not relate to any of D&A behaviors. In Asefa and Bekele's (2015) study of women's reports, there were significant differences between a hospital and health centers regarding non-consented care, non-confidential care, discrimination, and abandonment of care, and the hospital had a higher prevalence than health centers.

The High Prevalent D&A as Infringement of Women's Right to Be Respected

The most commonly reported D&A was 'not draping women's legs when giving a

vaginal examination', and this was the only form of D&A that the percentage of enacted behavior (66.5 %) exceeded the percentage of not enacted (33.5%). Likewise, the third common D&A was also one of non-confidential care: 'conducting deliveries even when many staff or students present (41.9%). According to other Tanzanian direct observation study (Sando et al., 2016), mothers who were not covered during examination was 23% and who were not covered during delivery was 58%. Furthermore, another direct observation (Rosen et al., 2015) also reported that more than half observed women were not covered before delivery. A number of participants worked at facilities where there was no partition between beds at antenatal and labor wards (Table 5). Sando et al. (2016) reported also that almost all postpartum women (90 %) shared beds. Those Tanzanian facility environments might make it more difficult to protect women's privacy as well as for nurses' and midwives' challenging their personal qualities in dealing with women respectfully.

Non-consented care, including not obtaining consent for performing episiotomy (46.3 %), not telling the results of blood pressure reading (38.9 %), and not obtaining consent for performing giving vaginal examination (24.0 %) were also forms which were ranked high in participant's self-report. According to the results of Sando et al.,'s (2016) direct observation, about 80 % of women did not provide consent for procedures. In comparison with this, there were few differences with the present results. On the other hand, from Tanzanian women's reports, non-consented care was reported extremely lower: 0.06 – 0.17 % (Kruk et al., 2014) and 0.2 – 5 % (Sando et al., 2016). In other African countries, there are also broad range of percentage of women's reported prevalent in non-consented care; 4.3 % in Kenya (Abuya et al., 2015), 54.5 % in Nigeria (Okafor et al., 2015), and 94.8 % in Ethiopia (Asefa & Bekele, 2015).

Nearly 30 % of participants scolded and threatened women when they did not comply with requirements of participants. Verbal abuse was identified as one of the most common D&A by women's report in other studies (Kruk et al., 2014; Sando et al., 2016). Nurses and midwives commonly justified verbal abuse believing that using violent comments were necessary and unavoidable to make women obey and to ensure a safe delivery (d'Oliveira, Diniz, & Schraiber, 2002; Jewkes, Abrahams, & Mvo, 1998; Mselle

et al., 2013; Pettersson, Johansson, Pelembe Mde, Dgedge, & Christensson, 2006). Since the context of those question items were restricted in the situation for noncompliant women, the participants of the present study also might not have recognized those behaviors as D&A, and scolding and threatening women might have been normalized for them.

The Risk-Harming and Life-Threatening Aspects of D&A

Though the prevalence rate varied only around 10 to 20 %, participants were conscious of enacting physical abuse, abandonment of care, and inflicting physical harm, which can directly cause poor women's and babies' outcome.

According to participant's self-reports, 35.0 % of them did not use anesthesia for episiotomy or suturing the perineal tears, 21.5 % of them slapped women's legs, 7.4 % of them used fragment broken glass ampule or needles for artificial rupture of membranes, and 5.6 % of them pushed women's abdomen to rush delivery even when not an emergency. These results indicated a bit higher prevalent than other studies; 5 % of observed women received an episiotomy without anesthesia (Sando et al., 2016); a similar result of 4.4 % was reported by another direct observation study (Sando et al., 2014). Sando et al. (2014) reported 3.8% pushed on women's abdomen. Physical force was sometimes used as an aspect of corporal punishment when women did not comply with provider's instructions (d'Oliveira et al., 2002). As the context of justification for verbal abuse, physical abuse might also have been conducted routinely. According to women's reports about physical abuse in other studies in Tanzania, the prevalence ranged only around 2 to 5 % (Kruk et al., 2014; Sando et al., 2014; 2016).

Moreover, 10 to 15% of participants reported they abandoned their patients by ignoring and neglecting, and that could lead to overlooking the signs of complications and expose women and babies to risk of death. Ignoring and neglecting women are also one of the common D&A behaviors in Tanzania. According to women's reports, around 8 % of them were ignored and neglected when they needed providers during the time of childbirth (Kruk et al., 2014; Sando et al., 2016). As a result of that many nurses and midwives showed no concern for laboring women; sometimes deliveries happened

without health care providers and babies died (McMahon et al., 2014; Shimoda et al., 2017). Bradley, McCourt, Rayment, and Parmar (2016) have indicated in their meta-analysis review that there is much evidence that midwives take action only when women reached the second stage of labor, since they only focus on delivery, not on supporting women during first stage of labor. Abandonment of care limits assessment of the labor progress, and it might lead poor delivery outcomes.

Working Condition and Systems as Related Factors of D&A

Five variables were found as related factors of nurses' and midwives' D&A behaviors; working hours, breaks during evening shift, two from IWS components (professional status and interaction between nurses), and supervision for new nurse-midwives. As already expected in other studies (d'Oliveira et al., 2002; Manongi, Marchant & Bygbjerg, 2006; Mselle et al., 2013; Mumtaz, Salway, Waseem, & Umer, 2003), the results of the present study evidenced that those variables such as heavy workload, poor relation with co-workers, the pride of their own job, and lack of supervision, related to provider's D&A behaviors. Notably, however, almost all other variables such as characteristics of nurses and midwives including age, family structure, educational background, and facility structural factors including salaries, supplies, number of staffs, equipment, and number of deliveries, which were also expected as related factors of D&A, were not significantly correlated.

The factor, which had the highest impact on D&A was 'professional status'. Participants who are proud to be nurses and midwives and who think that their own jobs were important and valued, might also be able to take care women more respectfully. Nurses' and midwives' professional identity and respect were already argued as one of the related factors (Bowser & Hill, 2010; Jewkes et al., 1998). It might relate to nurses' and midwives' motivation for work whether they think their own jobs are something worthwhile. In other words, without being respected and valued from others and without gratitude for their care, the demoralization for work might be increased and they might take their frustration out on women (Mumtaz et al., 2003). Also, this aspect might not be capable of being satisfied by monetary rewards. According to other researchers (Fujita et

al., 2012; Manongi et al., 2006), although financial incentives are important to motivate nurses and midwives, they need to also feel valued, supported, and respected for their own professional value to be empowered and gain higher self-esteem.

‘Breaks during evening shift’ had the second highest prediction impact of D&A behaviors, and this variable correlated positively to it. As heavy workload has been suspected as one of the related factors for provider’s D&A behaviors, taking enough breaks must be critical. However, the finding indicated that participants who took more breaks during evening shift tended to enact D&A more than those who did not. Since taking breaks means that nurses and midwives leave their duty and women temporarily, this variable might have related especially the abandonment of care out of all forms of D&A. According to some articles, women are left alone during childbirth while nurses and midwives take a lunch, sleep and chat (McMahon et al., 2014; Mselle, Kohi, Mvungi, Evjen-Olsen, & Moland, 2011). Nurses and midwives who take a break frequently, may tend to interact with women rarely, and to the contrary, it may be the other way around; nurses and midwives, who enact D&A behaviors frequently, may tend to take more breaks.

Another factor, which commonly related to D&A behaviors is poor relationship among colleagues (Behruzi, Hatem, Goulet, & Fraser, 2011; Bohren & Hills, 2010; Mannava et al., 2015). ‘Interaction between nurses and nurses’ negatively correlated with D&A. Participants who were contented in a relationship with other nurses, tended not to enact much D&A. There might be a convention like the cycle of abuse, and nurses and midwives might not attempt to treat women respectfully unless co-workers respect them.

The two remaining variables which were correlated with D&A behaviors, were factors related to working system and condition: ‘any type of supervision for new nurse-midwives’ and ‘working hours per week’. Lack of supportive supervision is also one of the most common factors, repeatedly mentioned in other studies (Bohren et al., 2015; Bowser & Hill, 2010; Mannava et al., 2015), and the finding of this study supported those studies. Education for beginners in some way might control D&A behaviors, regardless of type. Possibly, supervision systems might make new nurses and midwives have a feeling of being supported by senior staff, and seniors attempt to become a role model. Through those interactions, rather than the supervision system itself, affective change

might influence their behaviors for women. Likewise, though the impact upon D&A behaviors of 'working hours' were smallest, long working hours has also been argued as a related factor of D&A in other studies (d'Oliveira et al., 2002; Miller et al., 2003). Working long hours may not only cause provider's fatigue, but it also might decrease their motivation and job satisfaction (Manongi et al., 2006), and lead to uncaring behaviors towards women (Mannava et al., 2015).

Implementation for Clinical Site

Based on the analysis of the present study, the evidence indicates that it is working conditions and systems including provider respect and personal relationships are important to reducing D&A, rather than provider's individual factors and facility's physical infrastructure and equipment. It might be hard to reduce provider's D&A behaviors by only their individual efforts at changing their morals, however, fostering a pleasant working atmosphere, working condition and systems, and facility culture including good relationships among colleagues, patients, and the society, might be very important to assist providers functioning in a more kindly manner at work. To work in an atmosphere, which assists providers to feel respected by others, might also affect how providers treat women respectfully. Bradley et al. (2016) also stated that understanding the drivers and the context of D&A is needed, rather than blaming individual health workers' attitudes and behaviors. Diverse factors were entangled in the complex context of D&A. Since D&A develop from a large intermingling variety of factors, avoiding blame of providers is paramount. In the context of occurring D&A, it had already been mentioned that both provider's individual factors and facility environment were conducive to disrespectful behaviors (Bohren et al., 2015; Sando et al., 2016).

Strengthen and Limitation of the Present Study

The strength of the present study is that this is the first study of provider's self-reported D&A behaviors. Also, the data were collected to cover four levels of Tanzanian public health facilities in three regions. It might be one of the first studies, which carried out at multiple facilities and regions in Tanzania. This is a strength for its' external validity.

There are some limitations in this study. A more encompassing or complex model for predicting D&A behaviors was beyond the scope of this initial study. It could be possible to explain D&A behaviors with other variables, which are assumed to be related factors, and which were not included in this study, such as provider's perception of women and facility cultures. There are also limitations of the question items to measure D&A behaviors, since the purpose of this study was estimating the prevalence of form of D&A. The psychometric properties of the tool should be considered for further development. Furthermore, in the present study, all questions regarding D&A behaviors were asked without considering the circumstances, and each behavior was treated as D&A under any circumstances.

Further Research

A most important point, which should be considered, is that D&A is not just an issue for Tanzania, or only for developing countries, but is important globally including developed countries. Furthermore, health care providers involved with childbirth care at facilities are not only nurse and midwives. Further research is needed that targets others such as obstetricians and other co-medicals. The present study indicated only one of the Tanzanian public hospitals' situation of D&A, which cannot represent the majority D&A behaviors of facility health care providers, thus further research is needed and should include a variety of health facility conditions and providers.

Furthermore, to assess the background factors of the prevalence of D&A and to understand why providers engage in D&A behaviors, a qualitative study should be considered for the next step. It is also necessary to explore the perception of providers and women toward D&A and the rights of childbearing women, for example whether providers and women consider that they have those rights, and what informed their perceptions. Moreover, a consensus driven definition of specific D&A behaviors must be developed for meaningful comparisons and robust measurement tool of D&A is required.

Conclusion

Nearly all participants had reported enacting at least one or two types of D&A. Relatively high proportion of participants engaged in D&A behaviors, which were more likely to violate women's rights and to exert their negative experiences with childbirth, such as non-confidential care, non-consented care, and non-dignified care including verbal abuse. Less prevalent D&A categories were: physical abuse, abandonment of care, and inflicting physical harm. These are the kind categories of behaviors, which can directly threaten the lives of women and babies.

Five variables were found related to factors of nurses' and midwives' D&A behaviors; working hours, breaks during evening shift, two from IWS components (professional status and interaction between nurses), and supervision for new nurse-midwives. Notably, almost all other variables related to characteristics of nurses and midwives including age, family structure, educational background, and facility physical structural factors including salaries, supplies, number of staffs, equipment, and number of deliveries which were also expected to be related factors of D&A, were not significantly correlated. Working conditions and the health care system including personal relationships were related to provider's D&A behaviors rather than provider's individual and facility structural factors.