



Training in youth-friendly service provision improves nurses' competency level in the Great Lakes Region

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Received: 7 April 2017 / Revised: 16 April 2018 / Accepted: 17 April 2018 / Published online: 5 May 2018
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Abstract

Objectives This survey investigates whether relevant training and availability of guidelines improve self-reported competencies of nurses in the provision of youth-friendly sexual and reproductive health services in South-Kivu Province in the Democratic Republic of the Congo, Burundi, and Rwanda.

Methods A quantitative baseline survey was conducted among nurses in randomly selected health facilities. Nurses providing youth-friendly sexual and reproductive health services were asked to self-rate their competencies with regards to technical knowledge, clinical, and communication skills. In South-Kivu, Burundi, and Rwanda, 135, 131, and 99 nurses were interviewed, respectively.

Results Overall differences of service and guideline availability and self-rated competencies can be observed between the three countries. In two countries, more than one in five nurses considered themselves to be only somewhat or not confident to counsel young people. Nurses from Rwanda showed the highest level of competencies followed by Burundi and South-Kivu. Lack of training in youth-friendly health services or family planning showed significant associations with reporting feeling somehow or not competent.

Conclusions The lack of training, supervision, and guidelines expressed by the nurses is of great concern. Competency-based training in youth-friendly health services is an important approach in improving nurses' competency level.

Keywords Self-reported competencies · Nurses · SRH services · Young people · Training

Introduction

Competent health professionals who have the knowledge and the skills to address young people's sexual and reproductive health (SRH) needs are crucial to improving their health worldwide (Sanci et al. 2000; Sawyer et al. 2013; WHO 2015a). Young people (15–24 years) are exposed to many sexual and reproductive health risks resulting for example in unwanted pregnancies as they negotiate adulthood and explore sexual relationships

(Patton and Viner 2007; WHO 2014; WHO 2006). They, therefore, require different SRH messages by health professionals than those for adults (Keeney et al. 2004; WHO 2015a). Data from other countries have shown that failure to meet the SRH needs of young people will result in continued high levels of unintended pregnancies, unsafe abortions, and sexually transmitted infections, including HIV, and will contribute to long-term detrimental health, with negative social and economic consequences (WHO 2014). In the countries of interest, the Democratic Republic of the Congo (DRC), Burundi, and Rwanda, SRH information and services for young people are not standard everywhere. Teenage pregnancy rates are high in all three countries, especially in DRC (DRC: 27%; Burundi: 8%; Rwanda: 7%) and the use of any contraception among adolescents is extremely low (DRC: 5%; Burundi: 1.3%; Rwanda: 1.9%), and continues to be low for young adults (20–24 years) (DRC: 10.5%; Burundi: 11.7%; Rwanda: 18.5%) according to the latest Demographic Health

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Surveys of the respective countries (ISTEEBU et al. 2012; MPSMRM et al. 2014; NISR 2015).

Many recent studies have looked at barriers that young people face when accessing health care services. These may include national laws and policies restricting them to access appropriate care (Binagwaho et al. 2012; Godia et al. 2013; Parker et al. 2013; Shaw 2009), high costs of services (Philips et al. 2011), lack of available medicine (Mbeba et al. 2012; Mngadi et al. 2008), and a missing youth-friendly environment, such as inconvenient opening hours and lack of privacy and confidentiality (Agampodi et al. 2008; Binagwaho et al. 2012; Jaruseviciene et al. 2011; Khalaf et al. 2010). One of the main factors that cause young people, particularly adolescents and unmarried young women, not seeking SRH services is the judgmental attitudes of health care providers (Agampodi et al. 2008; Alli et al. 2013; Binagwaho et al. 2012; Jaruseviciene et al. 2011; Khalaf et al. 2010).

Although considerable research has been devoted to access-related barriers that young people face with regard to SRH services, rather, less attention has been paid to core competencies of health care providers, in particular nurses, to deal with young people's SRH issues. Being at the forefront of the primary health care system, nurses are in a unique position to contribute to improving young people's health (WHO 2015a). Yet, globally, the attention on youth-friendly SRH-related trainings in the nursing curricula remains weak (Keeney et al. 2004; Mngadi et al. 2008; Sawyer et al. 2013; WHO 2011). In addition, several studies further pointed out that, in general, medical staff lack the necessary competencies to counsel or treat young people age appropriately (Agampodi et al. 2008; Binagwaho et al. 2012; Godia et al. 2013; Mbeba et al. 2012; Mngadi et al. 2008; Obare et al. 2011; Parker et al. 2013; Sancu et al. 2000; Sawyer et al. 2013).

Preparing nurses to respond to the set of youth-friendly SRH services proposed by WHO (2012) to meet the health issues of young people remains a challenging and complex task regardless of the discipline or specialty area (e.g., HIV treatment) (Alli et al. 2013; Keeney et al. 2004; WHO 2015a, b). To effectively address young people's SRH issues, specific interpersonal and technical competencies are required (WHO 2015b). This includes knowledge of young people's cognitive, emotional, and physical development, including their sexuality and the skills to diagnose (e.g., pregnancies) and treat common conditions (e.g., reproductive tract infections), to recognize signs of sexual or physical abuse and to communicate with young people in an appropriate and non-judgmental way. Communication skills and relational abilities are essential core competencies which health staff needs to demonstrate, especially in the interaction with young clients. However, good and effective communication skills in health

education are still undervalued compared to clinical skills, and are often neglected in any medical profession curricula (Sawyer et al. 2013; WHO 2014).

This survey investigates the levels of knowledge, and clinical and communication skills of nurses in the provision of youth-friendly SRH services in the framework of a Dutch-funded adolescent and youth program implemented in DRC's South-Kivu Province, Burundi, and Rwanda from 2014 to 2016. The 3-year program aimed at improving access to SRH services, improving the competencies of health professionals and thus enabling young people to make healthier choices regarding their sexual and reproductive health. The purpose of this study is to report on the self-rated competencies, namely, (1) knowledge, (2) clinical skills, and (3) communication skills of nurses working in rural areas of South-Kivu (DRC), Burundi, and Rwanda with regard to 13 different SRH services for young people aged 15–24. Furthermore, we investigated whether training in youth-friendly health services and family planning as well as the availability of guidelines will be associated with better self-rated competencies in nurses providing SRH services to young people.

Methods

Study setting and study population

The study is a controlled baseline–endline survey using a quantitative approach to assess nurses' self-reported competencies. This study is part of an evaluation of a 3-year Dutch-funded programme: 'Making Sexual and Reproductive Health Work for the Next Generation.' This project aims to improve sexual and reproductive health of young people in South-Kivu province, Burundi and Rwanda.

A quantitative survey was conducted in six health zones in South-Kivu Province (Idjwi, Katana, Kaziba, Miti Murhesa, Nyangezi, and Walungu), in eight provinces in Burundi (Bururi, Cankuzo, Gitega, Karusi, Makamba, Mwaro, Rutana, and Ruyigi) and in six districts in Rwanda (Gicumbi, Karongi, Kirehe, Muhanga, Nyaruguru, and Rusizi).

From a list of all health facilities providing SRH services in the respective study areas, a random number of health facilities were chosen. A sample of 150 health facilities was targeted except for Rwanda as the number of health facilities was lower than the initially planned sample of 150 facilities. From each facility, one health staff (doctor, nurse, midwife, or auxiliary nurse/midwife that offers SRH services, who was present in the facility and available for an interview) was interviewed.

For this study, we only considered nurses and excluded doctors and midwives to keep a homogenous sample. In

South-Kivu, out of 147 health professionals interviewed, 135 were nurses. In Burundi, out of 135 health professionals interviewed, 131 were nurses, whereas, in Rwanda, we interviewed 112 health professionals of which 99 were nurses.

In the three countries' health system, nurses are classified in four categories, according to their level of training and experience, namely, A0, A1, A2, and A3 with A0 being the highest and A3, the lowest. However, variations exist between the three countries. In Rwanda and DRC, A0 consists of a 5-year university degree (after high school completion) and A1, a 3-year university degree, whereas, in Burundi, it is a 2-year university degree (Nabirye et al. 2014). The lower levels have recently been cancelled (A3 in all three countries as well as A2 in Rwanda), but nurses with these training levels still work in health centres (Mukamana et al. 2015). A2 completed 4 years of paramedical training (high school level) in Burundi and DRC (Nabirye et al. 2014).

Data collection

Between February and May 2014, a tablet-based questionnaire, using Open Data Kit software, was administered to nurses (baseline survey). The use of tablets for data collection was a positive experience—it enabled close quality monitoring of data collection in real time and was an engaging work tool for the interviewers.

The questionnaire was pilot tested in each country before data collection. English, French, Kiswahili, Kirundi, and Kinyarwanda versions were available. Translations were checked and validated by a team of surveyors in each country. A team of 10–15 interviewers was recruited per country and trained for 10 days to administer the health staff questionnaire. In addition, a national supervisor coached the team and data quality checks took place in the country. Participation in the survey was voluntary and anonymous, and required a written informed consent from the interviewee.

Measures

The survey instrument was largely based on the WHO youth-friendly health facility assessment tool (WHO 2012) and adapted to the local context. Specifically, the study examined: (a) the number of SRH services at health facility provided by nurses and the availability of guidelines per service and country, (b) the self-reported competencies (knowledge, clinical skills, and communication skills) of being somehow or not confident to deal with young people's SRH issues according to thirteen SRH services, and (c) whether training in youth-friendly health services or

family planning and availability of guidelines are associated with higher competencies (knowledge and communication skills) with regard to two SRH services per country.

SRH services according to the WHO youth-friendly health services score (WHO 2012)

1. Information and counselling on SRH/safe sex
 2. Information and counselling on condoms
 3. Testing and counselling services for HIV
 4. Care and support to young people living with HIV/AIDS
 5. Information and counselling on contraception, incl. emergency contraception
 6. Sexually transmitted infections/reproductive tract infections (STI/RTI) diagnosis
 7. Treatment for STI/RTI
 8. Pregnancy diagnosis
 9. Antenatal care
 10. Childbirth/delivery
 11. Postnatal care
 12. Post-abortion care
 13. Gender-based violence (GBV)
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The questionnaire included questions about socio-demographic variables, such as age, sex, religion, marital status, and educational level, type of health facility, years of SRH work experience, and training in youth-friendly health services and family planning. Each respondent was asked to state which of the 13 SRH services (WHO 2012) were provided at their respective health facility and whether guidelines for this specific service were available. Each respondent was then asked to self-rate his/her competencies with regards to the level of knowledge, of clinical skills and of communication skills in providing the selected 13 SRH services to young people on a 5-point-Likert scale (1 = extremely confident; 2 = very confident; 3 = confident; 4 = somehow confident; 5 = not confident). For the analysis, the level of competencies were further dichotomized by combining the first three categories to feeling confident (1 = extremely confident; 2 = very confident; 3 = confident) versus feeling somehow or not confident (4 = somehow confident; 5 = not confident). The nurses were asked whether they had received youth-friendly health services training or family planning training in the previous 12 months, more than 12 months ago or no training at all. For the logistic regression, these two variables were further dichotomized in having received training (regardless of timing) versus no training received at all.

Table 1 Background characteristics of respondents, 2014

	South-Kivu		Burundi		Rwanda	
	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>
Total		135		131		99
Sex						
Male	76.3	103	63.7	81	35.4	35
Female	23.7	32	36.3	46	64.6	64
Age						
20–29	23.0	31	36.6	48	40.4	40
30–39	32.6	44	39.7	52	37.4	37
40 +	44.4	60	23.7	31	22.2	22
Marital status						
Married	No data	No data	70.23	92	67.7	67
Having a partner	No data	No data	9.92	13	3.0	3
Single/other	No data	No data	19.85	26	29.3	29
Religion						
Roman Catholic	59.2	80	57.3	75	42.4	42
Christian protestant/ pentecostal/adventist	37.8	51	40.5	53	53.6	53
Other	3.0	4	2.3	3	4.0	4
Education						
A3 level						
A2 level	8.2	11	32.1	42	57.6	57
A1 level	37.0	50	0.8	1	33.3	33
Bachelor	51.1	69	3.8	5	9.1	9
PhD, Master, specialized doctor	3.7	5				
Type of health facility						
Health Centre	68.2	92	91.6	120	87.9	87
Dispensary	8.2	11			3.0	3
Hospital	6.6	9	8.4	11	9.1	9
Secondary post	17.0	23				
Youth-friendly health training received						
Within the last 12 months	44.4	60	29.8	39	31.3	31
More than 1 year ago	11.8	16	9.9	13	21.2	21
Never	43.8	59	60.3	79	47.5	47
Family planning training received						
Within the last 12 months	28.4	38	20.6	27	15.2	15
More than 1 year ago	37.3	50	26.7	35	51.2	51
Never	34.3	46	52.7	69	33.3	33
Years worked at the health facility						
Mean years	5.5 (4.3–6.6)		4.9 (3.8–6.1)		5.2 (4.3–6.1)	
Years with reported SRH experience						
Mean years	8.6 (4.9–12.4)		5.3 (4.3–6.3)		5.7 (4.7–6.7)	

Data processing and analysis

Data were reviewed by a supervisor at the end of each day and then sent to a high-security central server in Basel

where a second control took place by a study principal investigator. Every day, a backup was made. Descriptive statistics were carried out using STATA/IC 14.0. Unadjusted logistic regressions were conducted to assess

whether the absence of training in youth-friendly health services and in family planning, as well as the unavailability of guidelines for the respective services were associated with feeling somehow or not confident in providing the following two SRH services: (a) information and counselling on SRH/safe sex and (b) information and counselling on contraception services. The two services were selected based on the importance of being able to counsel young people on these topics which were covered in the training of the program.

Results

Out of the 135 nurses in South-Kivu the majority worked in health centres (68.1%). Nurses reported having worked a mean number of 5.5 years in their respective health facilities and having a mean number of 8.6 years of SRH experience. Moreover, 43.8% reported having never received youth-friendly health services training and 34.4% having never received family planning training. In Burundi, a total of 131 health staff were interviewed and close to two-third reported having obtained an A3 education level (63.4%), and the majority worked in a health centre (91.6%). Nurses reported having worked a mean number of 4.9 years in their respective health facilities and having 5.3 years of SRH experience. Nearly two-third of the nurses reported never having received either youth-friendly health services training (60.3%) or family planning training (52.7%). In Rwanda, the 99 respondents mainly worked at health centres (87.9%) and had an A2 education level (57.8%). They reported having worked a mean number of 5.2 years at their respective health facilities and having a mean number of 5.7 years of SRH experience. Nearly half of the respondents (47.5%) reported never having received youth-friendly health services training and a third (33.3%) reported never having received family planning training (Table 1).

Table 2 presents how many of the 13 identified SRH services were provided by the nurses by country. Overall differences of service provision and guideline availability can be observed between the three countries.

The provision of the service of "Information and counselling on SRH/safe sex" was reported by 88.9% of nurses in South-Kivu, followed by Burundi (91.6%) and Rwanda (99%). Whereas "Information and counselling on contraception incl. emergency contraception" was reported by fewer nurses in South-Kivu (85.2%), followed by Burundi (87.8%) and Rwanda (91.9%). In South-Kivu, fewer nurses (67.4%) reported giving "Testing and counselling services for HIV" compared to Rwanda (96.5%) and Burundi (97.7%). Maternal and child health services such as antenatal care, delivery, and postnatal care were less

common in South-Kivu (81.5; 77.8; 79.3%), compared to Burundi (96.9; 90.1; 78.3%) and Rwanda (97; 99; 100%).

Guidelines on "Information and counselling on SRH/safe sex" were available for 65.8% of nurses in Burundi, followed by 67.5% of nurses in South-Kivu and by 86.7% in Rwanda, respectively. Having guidelines on "Information and counselling on contraception incl. Emergency contraception" was reported by most nurses in Rwanda (87.9%), followed by nurses in Burundi (81.7%) and South-Kivu (78.3%).

We then asked the nurses about how confident they felt with the actual provision of these 13 services. Table 3 presents the percentage of nurses with limited confidence (i.e., feeling somehow or not confident) in providing SRH services to young people with regard to knowledge, clinical skills, and communication skills. Differences between the three countries in the level of confidence were observed. Compared to their neighbours, more nurses in South-Kivu reported limited confidence with regards to their knowledge of how to provide "Information and counselling on SRH/safe sex" (South-Kivu: 31.1%; Burundi: 23.9%; Rwanda: 13.3%) and of providing "Information and counselling on contraception" (South-Kivu: 27.8%; Burundi: 19.6%; Rwanda: 7.7%). More nurses in South-Kivu reported feeling somehow or not confident with regards to communicating with young people when providing "Information and counselling on SRH/safe sex" (18.3%), followed by Burundi (11%) and Rwanda (7.1%) as well as in providing "Information and counselling on contraception" (South-Kivu: 20%; Burundi: 15.7%; Rwanda: 5.5%).

In South-Kivu, nurses felt less competent regarding their clinical skills for the following services: "Antenatal care" (14.8%; Burundi: 11.3%; Rwanda: 9.4%); and "Postnatal care" (19.8%; Burundi: 9.9%; Rwanda: 9.1%). Burundian nurses reported feeling less or not confident with regard to clinical skills related to "Gender-Based Violence" (36.7%) compared to South-Kivu (29.3%) and Rwanda (18.4%).

Table 4 presents a logistic regression with nurses reporting feeling somehow or not confident according to the three competency categories with three different predictors: (1) not having received training on youth-friendly health services or (2) training about family planning after graduation and (3) the availability of guidelines for the respective service. For the purpose of addressing young people's health, the logistic regression focuses on two outcomes (a) "Information and counselling on SRH/safe sex" and (b) "Information and counselling on contraception including emergency contraception".

In South-Kivu, nurses reporting feeling somehow or not confident with regards to knowledge in providing "Information and counselling on SRH/safe sex" and "Information and counselling on contraception services" were significantly more likely not to have received youth-

Table 2 Sexual and reproductive health services provided by nurses and reported availability of guidelines for the respective service per country, 2014

	South-Kivu (<i>N</i> = 135)			Burundi (<i>N</i> = 131)			Rwanda (<i>N</i> = 99)		
	SRH Services provided		Availability of guidelines*	SRH Services provided		Availability of guidelines*	SRH Services provided		Availability of guidelines*
	%	<i>n</i>	%	%	<i>n</i>	%	%	<i>n</i>	%
1. Information and counselling on SRH/safe sex	88.9	120	67.5	91.6	120	65.8	99	98	86.7
2. Information and counselling on condoms	95.6	129	58.1	83.6	102	53.9	96	95	92.6
3. Testing and counselling services for HIV	67.4	91	70.3	97.7	128	79.7	96	95	97.9
4. Care and support to young people living with HIV/AIDS	13.3	18	66.7	46.6	61	88.5	97	96	93.8
5. Information and counselling on contraception, incl. emergency contraception	85.2	115	78.3	87.8	115	81.7	91.9	91	87.9
6. Sexually transmitted infection/reproductive tract infection diagnosis	83.7	113	76.1	62.6	82	89	100	99	94.9
7. Treatment for sexually transmitted infection/reproductive tract infection	84.4	114	81.6	94.7	124	92.7	100	99	96
8. Pregnancy diagnosis	90.4	122	56.6	96.9	127	74.8	99	98	85.7
9. Antenatal care	81.5	110	82.7	96.9	127	77.2	97	96	92.7
10. Childbirth/delivery	77.8	105	83.8	90.1	118	82.2	99	98	90.8
11. Postnatal care	79.3	107	73.8	95.4	125	72	100	99	86.9
12. Post-abortion care	59.4	79	46.8	78.3	101	71.3	91.8	90	82.2
13. Gender-based violence	43.0	58	72.4	63.8	83	73.5	92.9	92	82.6

**n* the subsample of nurses who declared providing the services

friendly health services training (OR 5.7, 95% CI 2.44–13.21; OR 3.4, 95% CI 1.47–8.19) or family planning training (OR 4.5, 95% CI 1.99–10.59; OR 5.2, 95% CI 2.19–12.69) and significantly less likely to have guidelines available (OR 2.4, 95% CI 1.09–5.58; OR 4.0, 95% CI 1.59–10.29) (Table 4). In Burundi, not having received youth-friendly health services or family planning training was significantly associated with feeling less or not confident with regards to knowledge in providing “Information and counselling on SRH/safe sex” services (OR 3.5, 95% CI 1.32–9.68; OR 3.8, 95% CI 1.48–9.97). In Rwanda, the unavailability of guidelines was significantly associated with feeling somehow or not confident with regards to knowledge in providing “Information and counselling on SRH/safe sex” (OR 6.0, 95% CI 1.58–22.83) and “Information and counselling on contraception” services (OR 7.6, 95% CI 1.11–52.02).

In South-Kivu, nurses reporting feeling somehow or not confident with regard to their communication skills in providing “Information and counselling on SRH/safe sex” and “Information and counselling on contraception services” were significantly more likely not have received

training on youth-friendly health services (OR 7.3, 95% CI 2.48–21.72; OR 4.4, 95% CI 1.63–12.00) or training on family planning (OR 6.2, 95% CI 2.25–16.87; OR 4.7, 95% CI 1.78–12.2). The unavailability of guidelines was significantly associated with feeling less confident with regards to communication skills in providing “Information and counselling on contraception services” (OR 3.9, 95% CI 1.46–10.65).

In Burundi, low communication skills with regards to “Information and counselling on contraception services” were significantly associated with not having received training on youth-friendly health services (OR 3.4, 95% CI 1.05–11.19). In Rwanda, weak communication skills regarding “Information and counselling on contraception services” were significantly associated with not having received a training on family planning (OR 9.7, 95% CI 1.03–91.69) whereas weak communication skills regarding “Information and counselling on SRH/safe sex” were significantly higher when guidelines were unavailable (OR 6.1, 95% CI 1.18–31.15).

Table 3 Low* levels of self-reported competencies of nurses with regards to knowledge, and clinical and communication skills to provide services specifically to young people, 2014

	South-Kivu % (n)	Burundi % (n)	Rwanda % (n)
1. Information and counselling on SRH/safe sex			
Knowledge	31.1 (37)	23.9 (28)	13.3 (13)
Clinical skills			
Communication skills	18.3 (22)	11.0 (13)	7.1 (7)
2. Information and counselling on condoms			
Knowledge	14.7 (19)	12.1 (12)	2.1 (2)
Clinical skills			
Communication skills	14.1 (18)	9.09 (9)	1.05 (1)
5. Information and counselling on contraception, incl. emergency contraception			
Knowledge	27.8 (32)	19.6 (21)	7.7 (7)
Clinical skills			
Communication skills	20.0 (23)	15.7 (17)	5.5 (5)
9. Antenatal care			
Knowledge	14.7 (16)	12.9 (16)	8.3 (8)
Clinical skills	14.8 (16)	11.3 (14)	9.4 (9)
Communication skills	11.3 (12)	8.87 (11)	8.3 (8)
11. Postnatal care			
Knowledge	19.6 (21)	15.7 (19)	8.1 (8)
Clinical skills	19.8 (21)	9.9 (12)	9.1 (9)
Communication skills	21.9 (23)	13.22 (16)	6.1 (6)
13. Gender-based violence			
Knowledge	34.5 (20)	41.3 (33)	18.2 (16)
Clinical skills	29.3 (17)	36.7 (29)	18.4 (16)
Communication skills	22.4 (13)	20.0 (16)	13.8 (12)

*Measured as being somehow or not confident

Discussion

The present study sought to investigate how nurses in the three countries rate their competencies with regard to SRH knowledge and the communication and clinical skills according to 13 different SRH services in treating young people. Furthermore, we investigated whether training in youth-friendly health services and family planning, as well as the availability of guidelines will be associated with better self-rated competencies in nurses providing SRH services to young people.

Overall differences in self-reported skills can be observed across the three countries. The study found that a considerable number of nurses do not consider themselves confident enough to counsel young people adequately. In two countries, more than one in five nurses considered themselves to be only somewhat or not confident to counsel young people adequately on SRH/safe sex, family planning, antenatal care, and postnatal care. Nurses from Rwanda indicated the highest level of competencies followed by Burundi and

South-Kivu. Differences in the competency level between the countries can be explained by the state of the health care system in each country and access to quality nursing education. The quality of any health system is determined by a complex array of interconnecting factors: infrastructure, guidelines and standards, supplies and drugs, record-keeping, and personnel (De Savigny 2009).

In addition to health system determinants, community-level factors such as critical attitudes, values and norms, and stigmatization pose an important barrier to seeking SRH services (Ahanonu 2014; Mbeba et al. 2012; Mngadi et al. 2008). Similar to the study's findings, health staff reported that they did not feel confident enough to provide SRH services for young people with regards to counselling and communication in rural and urban Kenya (Godia et al. 2013), and Warenius et al. highlighted in their findings from Kenya and Zambia that nurse-midwives are commonly confronted with ethical dilemmas, because they felt ill-prepared to deal with adolescent sexuality (Warenius et al. 2006).

Table 4 Factors associated with nurses reporting being somehow or not confident with regard to knowledge and communication skills, 2014

	South-Kivu (<i>N</i> = 135)		Burundi (<i>N</i> = 131)		Rwanda (<i>N</i> = 99)	
	Not being confident regarding knowledge about		Not being confident regarding knowledge about		Not being confident regarding knowledge about	
	1. Information and counselling on SRH/safe sex	5. Information and counselling on contraception, incl. emergency contraceptive	1. Information and counselling on SRH/safe sex	5. Information and counselling on contraception, incl. emergency contraceptive	1. Information and counselling on SRH/safe sex	5. Information and counselling on contraception, incl. emergency contraceptive
Youth-friendly health service training						
Yes	1	1	1	1	1	1
No	5.7 (2.44–13.21)***	3.4 (1.47–8.19)**	3.5 (1.32–9.68)**	2.4 (0.84–6.73)	1.4 (0.43–4.43)	0.9 (0.20–4.52)
Family planning training						
Yes	1	1	1	1	1	1
No	4.5 (1.99–10.59)***	5.2 (2.19–12.69)***	3.8 (1.48–9.97)**	2.6 (0.97–7.21) ^(c)	2.6 (0.81–8.65)	15.9 (1.81–139.46)*
Guidelines available						
Yes	1	1	1	1	1	1
No	2.4 (1.09–5.58)*	4.0 (1.59–10.29)**	1.01 (0.99–1.04)	1.0 (0.98–1.03)	6.0 (1.58–22.83)**	7.6 (1.11–52.02)*
	Not being confident regarding communication skills for		Not being confident regarding communication skills for		Not being confident regarding communication skills for	
	1. Information and counselling on SRH/safe sex	5. Information and counselling on contraception, incl. emergency contraceptive	1. Information and counselling on SRH/safe sex	5. Information and counselling on contraception, incl. emergency contraceptive	1. Information and counselling on SRH/safe sex	5. Information and counselling on contraception, incl. emergency contraceptive
Youth-friendly health service training						
Yes	1	1	1	1	1	1
No	7.3 (2.48–21.72)***	4.4 (1.63–12.00)**	2.7 (0.70–10.38)	3.4 (1.05–11.19)*	1.5 (0.32–7.35)	0.8 (0.13–5.3)
Family planning training						
Yes	1	1	1	1	1	1
No	6.2 (2.25–16.87)***	4.7 (1.78–12.2)**	2.3 (0.66–7.91)	2.4 (0.84–7.06)	1.5 (0.32–7.25)	9.7 (1.03–91.69)*
Guidelines available						
Yes	1	1	1	1	1	1
No	2.5 (0.97–6.42) ^(c)	3.9 (1.46–10.65)**	1.0 (0.98–1.04)	1.01 (0.98–1.03)	6.1 (1.18–31.15)	4.3 (0.38–47.67)

****p* < 0.001; ***p* < 0.01; **p* < 0.05; ^(c)*p* < 0.1

To be able to adequately treat and counsel adolescents and young people, health care providers need to be able to demonstrate certain competencies with regard to knowledge, skills, and communication (WHO 2015a). Therefore, it is even more important that health staff knows how to adequately communicate with young people about SRH topics.

In a study conducted in Swaziland to explore health provider's perception with regard to youth-friendly health services, more than half of the health staff reported they had never received any training on youth-friendly health services and only the minority had received training during their medical school (Mngadi et al. 2008). The attention to youth-friendly SRH-related training throughout the nursing curricula remains weak in many countries (Keeney et al. 2004; WHO 2015a). Our results show that a high number of nurses did not receive any training (South-Kivu: 34.4%; Burundi: 52.7%; Rwanda: 33.3%). Not having had training in youth-friendly health services and in family planning was strongly associated with feeling somehow or not confident with regard to knowledge and communication skills in giving services of "Information and counselling on SRH/safe sex" and "Information and counselling in contraception". Our data corroborate findings from various other studies that highlight the need for training to improve staff competencies (Agampodi et al. 2008; Dick et al. 2006; Godia et al. 2013). The curricula of nursing education in low-income countries are often geared towards hospital-oriented medicine and less towards public health (Mngadi et al. 2008) which impacts the need for family planning counselling, provision of contraceptives, and counselling on safe sex and SRH for young people. Meyer et al. concluded in their study that a 1-day training focusing on communication skills and relational abilities had a positive effect on paediatric health staff who reported improved confidence and reduced anxieties (Meyer et al. 2009). Various studies have concluded, based on a randomized control trial, that adolescent health training is useful in medical continuous training and an effective way to achieve sustainable and large improvements in knowledge, skill, and self-perceived competency (Godia et al. 2013; Sanci et al. 2000; Sawyer et al. 2013). In addition, studies have shown that additional means to improve competencies of nurses are supervision as well as patient/client interaction (Tavrow et al. 2002).

The lack of clinical guidelines in healthcare facilities can be an important factor linked with poor quality of care and lower confidence in treating patients especially at primary health care facilities (Grimshaw 2004; Rowe et al. 2005). Following clinical guidelines is thought to improve health care providers' performance and quality of care by assisting them to make appropriate decisions (Rowe et al. 2005). The current study assessed whether the health

facility had guidelines, but we did not ask the respondent whether they used the available guidelines. Availability of guidelines was lowest in South-Kivu (70.8%), followed by Burundi (76.8%) and Rwanda (90.1%). However, based on results of the logistic regression (Table 4), we can say that unavailability of guidelines is associated with lower confidence especially among nurses in South-Kivu. Clinical guidelines are an important help for patient care management and the unavailability may be associated with poor performance, non-respect of clinical procedures, and poor knowledge of therapeutic objectives. Kapongo et al. assessed the practice and knowledge of nurses related to type 2 diabetes care in the Kinshasa primary health care network (DRC) and highlighted the importance of clinical practice guidelines, supervision, and training of health care providers for non-communicable diseases (Kapongo et al. 2015). A study looking at family planning services from a provider's perspective in two rural districts in Uganda found that the lack of policy guidelines, educational materials, and records of said services might force providers to sell the commodities rather than giving comprehensive counselling (Nalwadda et al. 2011).

This study has several limitations. The results on the level of competencies of nurses are self-rated and were not cross-checked with actual observations. The quality of the service was not assessed through qualitative methods or through exit interviews of patients. The small sample size of this study imposes some limitations on the findings. Given the low percentage of young people accessing these services based on the community survey conducted in the three countries, our findings may partially reflect the self-rated competencies of nurses treating the general population. Therefore, we think that our findings are rather an overestimation of the actual competencies. Due to various reasons, the endline survey was not conducted which does not allow to assess whether the program had positive implications on the perceived competencies of the study population. Furthermore, we did not ask in the baseline survey what kind of training the health professionals received. We can, therefore, not reflect on whether pre-service or in-service trainings had an influence on the competencies of the study population.

In conclusion, investments in building an adolescent-competent workforce will benefit the health of young people not only now but also their adult life (WHO 2015b). The lack of training, supervision, and guidelines, which was expressed by the nurses, is of great concern. Communication skills and relational abilities are essential core competencies which health staff needs to demonstrate, especially in the interaction with young clients (WHO 2015a) as they showed a significant association with improved health outcomes, better patient adherence, and increased satisfaction with care (Meyer et al. 2009).

Competency-based training in youth-friendly health services and family planning are an important approach in improving nurses' competence level and hence service delivery of young people.

Compliance with ethical standards

Ethical approval A steering committee was established in each country for approval of the survey instrument and procedure, which included staff from the respective Ministries of Health. Ethical approval for this study was received by the Ethical Commission of North-Western and Central Switzerland on 31 October 2013. The DRC evaluation protocol received ethical approval in December 2013. Ethical approval by the Burundi National Ethics Committee was obtained on 14 January 2014 and statistical approval by the Ministry of Finances and Economic Development Planning (Visa No. VS201402CNIS) was obtained on 4 March 2014. The Rwanda evaluation protocol received ethical approval in March 2014 from the Rwanda National Ethics Commission (RNEC) and statistical approval from the National Institute of Statistics Rwanda on 22 April 2014. In addition, authorization to access health facilities was granted by the Ministry of Health in each country.

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