Barriers and facilitators to oral hygiene for critically ill patients at a regional referral hospital in Uganda: A qualitative study

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Abstract

Introduction: Critically ill patients may not take care of activities of daily living like oral care. Due to the complexity of care and need for close monitoring for critically ill patients, they are commonly admitted to high dependence units (HDU) or Intensive Care Unit (ICU) where oral health is expected to be provided by the bed side nurses. In Low and Middle-Income countries (LMIC) where there are low staffing levels, patient family (caregivers) are expected to help with some of the nursing procedures like oral care. We aimed to explore the barriers and facilitators to quality oral hygiene by caregivers for critically ill patients at a rural regional referral hospital in southwestern Uganda.

Methods: We conducted in-depth qualitative interviews with 9 purposively selected adult caregivers for patients who were critically ill admitted at emergency ward and intensive care units of Mbarara Regional Referral Hospital. Data was analyzed by thematic analysis.

Results: Themes identified were divided into barriers and facilitators. Barriers included lack of knowledge about oral hygiene for critically ill patients, lack of support from the nursing staff, directional training/teaching for oral hygiene**,** critically ill state of the patient, fear/discomfort, and limited resources for oral hygiene, the facilitators included training/teaching, availability of resources, patients' previous quality of oral care, and family support.

Conclusion: Training/teaching patient family and provision of supplies for oral care may facilitate quality oral care for critically ill patients in resource limited settings like Uganda.

Introduction

Critically ill patients may be equipped with orally placed airway apparatus and their mouth mucous membranes continuously in contact with air - this leads to reduced salivary flow which may facilitate bacterial growth (Sampson, 2020). This results in accumulation of saliva, mucositis, halitosis, pain, dryness of the mouth, tongue and palate debris and accumulation of saliva. The loss of the gag reflex, in presence of accumulated saliva might lead to aspiration pneumonia hence require mouth care as often as possible until the tissues and structures of the mouth are maintained (Salman Khudhair, 2014; Covello *et al*., 2020). It has also been reported that oral hygiene is relatively worse among ICU patients in a state of low level of consciousness and mechanical ventilated patients (Celik and Eser, 2017)(Kim *et al*., 2018) ..

Quality oral hygiene maintenance at adequate daily level including tooth brushing, flossing and rinsing is essential for the prevention and control of bacterial growth within the mouth (Dai et al., 2017). In addition, it promotes comfort, nutrition and verbal communication. Habitual brushing of the teeth and tongue, dental flossing and rinsing of the mouth removes food particles and debris while massaging the gums keeps it spotless and clean preventing bad breath and discomfort from irritation (Lyons, Smith, Boaden, Marian C. Brady, *et al*., 2018).

Despite the enormous implications, particularly frailty and medical functional impairment, quality oral hygiene is not always a priority (Bangee et al., 2021) and its often a forgotten aspect of patients' care (Scheerman et al., 2016). Some argue this is due to lack of resources, time, pressure and inadequately trained caregivers. In addition, the guidance is scare and frequently not based on evidence rather on expert opinion (Lyons, Smith, Boaden, Marian C. Brady, *et al*., 2018). Although the caregivers continue to participate in their patient oral care in this setting, the facilitators and barriers that they face while doing it are not well known.

We conducted a study to explore the barriers and facilitators to quality oral hygiene by care givers for unconscious patients hospitalized at MRRH.

Methods

Study setting and population

Participants were recruited from the emergency and intensive care unit of Mbarara Regional Referral Hospital (MRRH), Mbarara city in south western Uganda located approximately 260Km by road from Kampala- capital city of Uganda. MRRH is one of the government owned referral hospitals for patients who are either referred or self-referred. MRRH is also a teaching hospital for Mbarara University of Science and Technology (MUST). MRRH is a government owned facility that serves a population over four million people in its catchment area southwestern region of the country comprising of the districts of Bushenyi, Buhweju, Ibanda, Isingiro, Kazo, Kiruhura, Mitooma, Ntungamo, Rubirizi, Rwampara, Sheema, Mbarara plus Mbarara city and some patients from neighboring countries like Tanzania, Rwanda, and Democratic Republic of Congo. Patients with altered level of Conscious are admitted at the emergency ward that acts as the High dependence unit or at the intensive care unit. In both units, patients receive care from a team of health care teams that are majorly made up of nurses. The nurse-to-patient ratio in the units ranges from 3 to 10 patients per nurse. Due to the low staffing levels, patients are allowed at least 1 family member to help with the care. These include but not limited to, oral care, bed bath, oral medication, positioning among others.

Study design

We used a descriptive qualitative study. This design was preferred because it described and explained phenomenon under the study by in depth exploration of issues of interest. The study involved exploration of the barriers and facilitators to oral hygiene by caregivers/patient family for unconscious patients.

Sampling and Recruitment

We purposively recruited participants who were caregivers of critically ill patients hospitalized at emergency and intensive care units on MRRH. Potential participants were approached for written informed consent. Recruitment and data collection continued until we reached saturation point. We stopped at 9 of the planned 11 interviews because of saturation (Guest G et al, 2020). Participants included were adult caregivers (18 years and older), able to speak English or one of the local languages (Runyankore or Rukiga), Caregivers of conscious patients in the same units were excluded from the study.

Study procedures

We conducted one-on-one in-depth interviews with each participant. Interviews were conducted using a semi-structured interview guide that was developed by the research team. The interview guide was developed following review of literature from related previous studies. The initial interview guide was tested among two caregivers at Mbarara City Council Health Center IV with improvements in phrasing to improve clarity. The Runyankore-Rukiga version was back translated to ensure consistency with the English version. Interviews were audio-recorded, transcribed and translated to English. The in-depth interviews that took approximately 15 minutes. Data collection was carried out in October 2022 and lasted three weeks.

Data management and analysis

The transcribed data was then analyzed manually using thematic content analysis which involved breaking up the data into manageable categories and themes as has been done elsewhere (Clark J et al,2022). The research then followed the standard six steps of qualitative data analysis: familiarization, generation of initial codes, searching for sub categories among the codes, reviewing the merged sub categories then defining and naming the categories (Vaismoradi M et al,2013)., EL and GM both read the transcripts and developed themes and categories. There after they met and agreed on the themes and codes that later formed the analysis.

Ethical consideration

The study was approved by the Mbarara University of Science and Technology Faculty of Medicine Research Ethics Committee. We additionally received administrative clearance from the hospital director of MRRH. Written informed consent was obtained from all the participants. All research procedures were conducted in line with the Helsinki declarations.

Results

Participants characteristics

All the 9 participants interviewed had received some form of formal education, with the highest level of education being tertiary education, 5 were male, 5 were married and one was unemployed. The youngest participants were 21 years and the oldest was 42 years old., most of the participants were between 18 to 25 years. This is summaries in Table 1.

Table 1
Participants demographics

Participants	Care takers Gender	Age	Marital Status	Education level	Occupation	Religion	Patient's Age	Unit admitted	Relationship with participant	Number of days unconscious	Numbe of caregiv
01	M	26	Single	Tertiary	Self employed	Protestant	77	Medical emergency	Father	2	2
02	M	30	Married	Primary	Businessman	Catholic	49	Medical emergency	Father	2	5
03	F	23	Married	Secondary	Peasant	Catholic	70	Medical emergency	Mother	1	3
04	F	42	Married	Primary	Peasant	Catholic	59	Medical emergency	Mother	3	2
05	F	24	Single	Primary	Unemployed	Pentecostal	82	Medical emergency	Father	1	2
06	M	21	Single	Tertiary	Student	Protestant	85	Intensive care	Grandfather	14	2
07	M	27	Married	Tertiary	Builder	Catholic	19	Intensive care	Brother	2	4
08	F	42	Married	Primary	Peasant	Catholic	22	Intensive care	Daughter	12	3
09	M	23	Single	Secondary	Photographer	Catholic	27	Intensive care	Brother	33	4

In this study, the themes were; current practices of oral care by family care givers, facilitators and barriers to quality oral hygiene among caregivers for critically patients as below.

Current practices of oral care by the family care givers

Most of the participants used toothbrush and toothpaste when cleaning their patients mouth plus clean water which was either boiled or packed commercially available mineral water. They reported that they cleaned the patient's mouth 2 times in a day; after waking up in the morning and after eating in the evening. Others used either a clean cloth or soft sponge towel when cleaning their patients' mouth. Some respondents had not cleaned their patients' mouth. One of the participants said they could support the patient and clean his mouth;

"We got a toothbrush and put toothpaste, we then started brushing his teeth while holding him so that he doesn't fall" (P01, M.26years)

"Morning and evening, because that's how she normally does it before she was sick" (P03, F.23years)

"… we push a finger into her mouth and we open her mouth forcefully" (P03, F.23years)

One of the participants mentioned that cleaning themselves was a reminder to clean the patient as well;

"When we wake up in the morning after washing his face, so... like two times" (P02, M.30 years).

Participants mentioned that sometimes nurses heled them with oral care, and other days they did it themselves.

"The nurses are the ones who do oral care even when I'm not here, and they also leave us with things to use in case" (P06, M.21years)

From the interviews, it was noted that most caregivers used common knowledge intuitively because they were not trained or taught about oral care for their patients. Participants mentioned that did this to make their patients to keep them healthy and clean which makes them feel better and removes some organisms, dirt, excess saliva from the mouth to improve appetite and prevent some organisms from causing diseases of the teeth and gum.

"*When we clean his mouth, we will have killed… ok there are some organisms… for example like the food he will have eaten now you see he is a patient his mouth will not be clean. This necessitates us to clean his mouth to remove some organisms from his teeth that may causes diseases of the teeth or other diseases" (P01, M.26 years)*

However, one of the caregivers expressed lack of knowledge to perform oral hygiene because he didn't know what to do as stated below:

"Yes, we just did it intuitively, that is why I have told you like this salt we didn't know about it" (P03, F.23 years)

Facilitators quality oral hygiene among caregivers for unconscious patients

Category 1: training/teaching

The majority of the caregivers stated that if the nurses or people who know about oral care gave them advice on how to do it. They mentioned that if they actually taught them on how to do it with proper direction or guidance, it would make care for their patients mouth much easier.

"Putting some…. should I call it trainings, so that you that a patient who is in such a condition is cleaned like this or looked after like this" (P06, M.21years)

"What can help is nurses giving us advice how to do it. When one is well trained in it, when they give you advice, that's when can do it. But you can't just come like in the condition he is in and you start doing oral care, when you have never done it" (P07, M. 27years)

"Why it would be hard for me is because I'm not used to it, If I knew how to do it or if I'm taught, it would simple for me." (P07, M.27years)

Category 2: Availability of resources for oral hygiene

A number of caregivers outlined that if they were provided with enough supplies for oral hygiene. The included items like toothbrushes. toothpaste and clean water for rinsing the patient's mouth would encourage them to perform quality oral hygiene to their patients as they stated as follows:

"May be if they can give us things to use for example toothbrush or toothpaste to use" (P03, F.23 years)

"Just…. getting enough brushes because we would want that he uses the toothbrush twice and we throw it away and we use another one, and maybe enough toothpaste" (P01, M.26 years)

Category 3: Caregiver and Patients' previous quality of oral health

Some of the caregivers stated that they would love to keep the oral hygiene of their patient healthy and clean if the patient used to do it when he/she wasn't in this current state health now. This is because the patient would also like that to be done to him or her like he/she used to do as stated by some of these responses:

"You see like in the morning, that's how he usually does because when you wake up, you wash your face and brush your teeth; and then at around 1pm because of the things you be feeding him" (P02, M.30 years)

"Morning and evening, because that's how she normally does it before she was sick" (P03, F.23years)

"Exactly, even yourself when you're not sick and you don't do it, there is a way it affects you" (P07, M.27years)

Category 4: Family Support

All the patients had more than one caregiver because the condition they were in could not be managed by one caregiver especially during cleaning his mouth. They would need someone else to support by holding the patient so that he/she does not fall when they are cleaning his/her mouth.

"…. because you need one person to support him and the other person to clean and hold the basin" (P01, M.26years)

Barriers to quality oral hygiene among caregivers for unconscious patients

Category 5: Lack of oral hygiene training/teaching

Most of the caregivers expressed a lack of training or teaching about oral care for their patients from the nurses or any other health worker who cared for their patients. They mentioned they lacked teaching on knowledge and skills for oral hygiene. Some participants mentioned that they were not even instructed to do the oral hygiene and thus not helped in anyway by the nurses. This was stated as follows:

"… we haven't been trained, no one has trained us or told us about it" (P01, M.26years)

"… no one taught us how to do it (oral care)" (P02, M.30 years)

"No one has told us about it, we are hearing it from you" (P03, F.23years)

"Why it would be hard for me is because I'm not used to it, If I knew how to do it or if I'm taught, it would simple for me. But something you're not used to, you can do it and you put him in another condition, which is bad" (P06, M.21years)

Some of the caregivers were not aware of performance of oral hygiene for unconscious patients because they thought it was unnecessary since some of the patients were not feeding by mouth and lacked teeth as it was stated below:

"*… something you have never done, you have nowhere to begin" (P07, M.27years)*

". We have not done it; I had thought about it because I don't know about it" (P 03, F.23 years)

Category 6: The reduced the level of conscious state of the patient

Most caregivers expressed the bad health condition as one of the factors that hindered them from performing oral care. This is because they were weak hence difficulty in supporting them and unable to open their mouth, and or spit. Also, they mentioned that some patients couldn't control their swallowing which could lead to aspiration as stated below:

"*We have difficulty especially when trying to support him to a sitting position, we find it difficult because of the other weak side, he can't sit well, he sits bent to one side. That is where we have difficulty" (P01, M.26years)*

"… you see he is in a bad state, it is difficult but we try to make sure that we clean his mouth" (P02, M.30years)

"She is not able to open the mouth, unless we push a finger into her mouth and we open her mouth forcefully" (P03, F.23years)

"It is difficult for me, because she can't open the mouth, you have to make sure you open her mouth yourself and clean" (P06, M.21years)

Category 7: Fear to inflict pain or discomfort to the critically ill patient by the care takers

Some of the participants expressed discomfort to perform oral care for their patients because of fear that they might be inflicting pain onto them which might put them in another condition. One of the caregivers expressed fear as below in this statement:

"… it is mainly because of fear, because I have never cared for an unconscious patient before" (P06, M.21 years)

"… something you're not used to, you can do it and you put him in another condition, which is bad" (P07, M.27years)

Category 8: limited resources for oral hygiene

Participants reported that resources like clean cloth or soft sponge for cleaning the patient's mouth were scarce and the caregivers had to wash it, dry it before using it again since it was only one. This was because the caregivers did not have enough money to buy those supplies since they used the money to buy other priority items like medication and food. They stated that;

"I have one, I keep washing it after use, and make sure it is dry and I make sure it is clean" (P06, M.21years)

"I would have bought it but the needs are many and money is little. You have to buy medications and other things" (P03, F.23 years)

Discussion

This qualitative study carried out on adult caregivers for patients who were critically ill and admitted at emergency ward and or intensive care units of Mbarara Regional Referral Hospital. The study explored the barriers and facilitators to quality oral hygiene by caregivers to patients who are unconscious and it's the first of the kind to be carried out in this specific population in southwestern Uganda. The barriers included lack of directional training/teaching, unconscious state of the patient, fear/discomfort, lack of knowledge/ignorance and limited resources. The facilitators included, training/teaching, availability of resources, patients' previous quality of oral care, and Family support.

Most participants in this study perceived and suggested that teaching inform of advice and learning from people who know like nurses would directly facilitate the oral care for their patients who are unconscious. This was consistent with a study conducted by Paul-Savoie et al,.2018 which recommended that

training caregivers for this similar kind of patients is greater when the information provided verbally is accompanied with well written visual instructions and illustrations in comparison when it's given as verbal instructions alone. This is because nurses who delegate this task to caregivers most of the time just give verbal instructions alone (citation). In another similar study in… on oral health after stroke by Lyon,2018 revealed expert and evidenced-based advise was given to care givers (how did it impact oral health?) (citation).

All the participants' patients were being cared for by more than one attendant. This is in line with a similar study carried out by Chowdhury and Chakraborty, 2017. in which care for unconscious patients was culturally sensitive because it involved family members, relatives and friends (citation). Also, in a similar study by Hearn, 2017, Ajwani et al, 2021, family support was a positive reward for community and advocacy groups during the care for unconscious patients when designing and operating oral care services. Family support is the role of care givers in facilitating advocacy and provision of direct oral care to patients who are unconscious and discussing oral health in everyday opportunities to utilize it (Bangee et al,.2021).

Some of the participants acknowledged the patient's previous quality of oral health would motivate them to perform quality oral hygiene to them because they would sympathize with the current patient's situation and recall how he/she used to maintain his /her oral hygiene and imagine that how they would like to be cared for if they were independent and be able to do it on their own. This is in line with a similar study about the barriers and facilitators among people living with mental illness (Hearn, Scrine and Durey, 2017) which highlighted similar findings about the previous quality of the patient's oral hygiene when he/she previously used to perform it.

All participants in this study at least mentioned the use of a toothbrush, toothpaste and water for cleaning the patient's mouth. This finding is similar to that of a similar study about tackling frailty and medical impairment of this similar kind of patients by involving dentists as a human resource which would be used as a source of knowledge to guide the caregivers about oral hygiene for patients who are unconscious (Dean et al., 2009).

Almost all the participants had no idea or had not been trained or told by the health care providers like nurses, medical doctors and physiotherapists about oral care for their patients who were unconscious. The findings were…. that the health care providers did not help or even done or given any chance to the caregivers to perform quality oral care to their patients. In a similar study by Richard Manski and John Moeller,2017, similar findings about the lack of directional training were due to limited education due to lack of prioritization and often forgotten aspect of general sanitation and hygiene meaning that there is lack of caregiver training hence hindering the quality of oral hygiene given to this kind of dependent patients.

Most of the caregivers performed oral care to the patients basing on common knowledge and skill that is intuitively gained as someone grows up. Participants were like after waking up in the morning that is when they would wish to perform oral hygiene and some said they are not used to doing it and they didn't know how to do it whereas others were like they would do it as much as they can. These findings were similar to the findings by Paulo Melo, Sandra Marques and Orlando Monteiro Silva, 2017 that found out that insufficient information about type of care and not considered to be necessary with a perception of no need was the barrier to quality oral hygiene by caregivers for the similar kind of patients.AlsoAlso, another similar study identified lower awareness because they think it's not life threatening the state of the patient itself was a barrier to quality oral hygiene by caregivers for this kind of similar patients (Bangee et al., 2021). Variability and not being routinely assessed plus lack of advice was a contributing factor for ignorance about oral care for these patients hence a barrier (Ab. Malik et al., 2018).

Most of the participants complained of the condition of the patient because the patient would be unable to spit, open mouth and also unable to drink, eat or swallow. Some patients who were unconscious also lacked teeth because of old age hence a barrier to quality oral hygiene since they need support to perform oral hygiene to them inform of holding so that they don't fall and help them in spiting the secretions when cleaning their mouth. This finding was similar to that of (of who) where poor general health and chronic diseases were found to limit oral care even if need exists (Dahm, Bruhn and LeMaster, 2015). This was because of stigma, shame and low self-esteem by caregivers hence hindering them from performing quality oral hygiene to this kind of patients.

In a study by Ajwani et al., 2021, dental anxiety due to loss of permanent teeth was a barrier to performance of quality oral hygiene. This is because of shame of appearance of teeth and the thought that the health care providers would question their competence and confidence in providing this kind of care was a limiting factor to quality oral hygiene by caregivers to patients who are unconscious. Also, another similar finding relating to fear was being bitten, fear to cause pain and discomfort and thinking something would go wrong due to restlessness and not knowing what to do were the contributing factors to caregivers not performing oral care to these patients (Torales, Barrios and González, 2017). Again, the emergence of the COVID19 epidemic also made the caregivers to fear touching their patients because they would be at risk if in case the patient, they were caring for was suffering from it (Sampson,2020).

Some of the participants complained about financial constraints like money to buy enough disposable toothbrushes and toothpaste, clean towels plus the costs of medications since they were buying almost everything to be used in the hospital. This is in line with a similar study that identified limited financial resources due to financial issues like no health insurance coverage and being of a lower social class (Hearn, Scrine and Durey, 2017). In addition, most of the dental services are not affordable and yet they are time consuming hence competing with the demands of staffs work force. Also lack of toothbrushes, towels, fluoride toothpaste, clean water, overwhelming concurrent costs for copayment for hospital bills and buying supplies due to shortages of materials, supplies, equipment and workforce, lack of time and competing demands on staff are the factors hindering caregivers from performing quality oral hygiene to this kind of patients.

Limitations

This study explored the barriers and facilitators by caregivers for patients who are unconscious only in the emergency medical and intensive care units of Mbarara Regional Referral Hospital and the findings were self-reported and there is a possibility that the sample did not get enough presentation of caregivers for these patients hence the results cannot be generalized for the whole of them.

Conclusions

Most of the caregivers for patients who were unconscious admitted at Mbarara Regional Referral Hospital emergency medical and intensive care units lacked knowledge about quality oral care for their patients because of lack of directional training/teaching by the nurses who delegate this role to them and end up supervising them instead of helping them.

Recommendations

Considering the results, there is need to integrate oral health content in the emergency medical and intensive care units to create awareness about maintaining good oral health practices through sensitization as they care for their patients in these units.

Declarations

Ethics approval and consent to participate

The study protocal was approved by the Mbarara University of Science and Technology Faculty of Medicine Research Ethics Committee. We additionally received administrative clearance from the hospital director of MRRH. Written informed consent was obtained from all the participants. All research procedures were conducted in line with the Helsinki declarations, and use for academic research and publication.

Consent for publication

Not applicable

Availability of data and materials

The transcripts used and analyzed during this study are available from the corresponding author upon request.

Competing interests

The authors declare no competing interests.

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Author contributions

EL; contributed in the formation and development of the protocol, data analysis, manuscript writing **GM**; contributed in data collection **JNN**; contributed in formation and development of the protocol, data collection, data analysis, manuscript writing. All the authors revised and approved the final version of the manuscript.

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