



Challenges of Covid-19: The Experience of Bule Hora University Nursing Students

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ABSTRACT

Background: COVID-19 brings several challenges to nursing education that involves both classroom theory and clinical-based practical education. These challenges affect the function of health care and academic institution. The students were vulnerable to the challenges of COVID-19 in the clinical care setting. The aim of this study was to explore the challenges of COVID-19 experienced by nursing students during their clinical practice education.

Methods: The qualitative study method used a phenomenological approach. A total of four Focus group discussions were conducted in this study. Each FGD consists of six participants in which twelve from third and twelve from fourth-year nursing students. The Quota sampling technique was applied in this study to enroll study participants. The moderator who fluently speaks the English language and Note taker was involved in the study to guide group discussion and to record the data. ATLAS.ti version-7 software was used for coding and forming quotations.

Results: After data analysis, four main themes and twelve subthemes emerged in this study. The main themes of this study were; Risks to contracting COVID-19, Negative impact on health care, Worry, and Loss of experienced staff.

Conclusion: Nursing students faced many challenges of COVID-19 during clinical practices. These challenges affect nursing students in learning practical skills and health care facilities to provide quality care. The students give emphasize on their learning by implementing COVID-19 prevention protocols. In addition, health care workers focused on safe procedural practices.

Keywords: COVID-19; Qualitative Study; Challenge; Nursing Students; Bule Hora

INTRODUCTION

COVID-19 is a disease of the respiratory system caused by the novel coronavirus namely severe acute respiratory syndrome corona virus-2 (SARS-CoV-2). In this world, multiple outbreaks happened by a coronavirus at different times. Those were in 2002 (SARS-COV-1), which approximately leads to 800 deaths, 2012 (Middle East Respiratory Syndrome: MERS-CoV), which results in 860 deaths, and nearly after eight years, the current outbreak raised new coronavirus called SARS-CoV-2 which is a global pandemic [1-3]. Nursing education includes theory which is given in the classroom and clinical practices provided

in the clinical care setups. The nursing knowledge, attitude, and practice chiefly rely upon the clinical attachments. In addition, clinical attachment enables the students to develop skills of effective therapeutic communication and enhance confidence to provide essential clinical care for the betterment of the patients [4-6]. On another hand, clinical education facilitates the spread of COVID-19 disease [7]. Studies carried out among nursing students pointed out that fear, anxiety, perceiving clinical learning as dangerous, and withdrawal from the nursing profession were reported in this era of the COVID-19 pandemic [8,9].

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The nursing profession is the backbone for the operating of the health care delivery system. Nursing students are the future nursing workforce. The negative impact of COVID-19 brings a shortage of manpower in the nursing discipline. The risk of COVID-19 is higher among student nurses than in other health care disciplines. This emanated from the roles, responsibilities, values, and ethical standards of nursing which are unique to the nursing profession [9,10].

The challenges of COVID-19 affect the global education system. Between 94%-98.6% percentages of the world students including nursing students were forced to interrupt education following raised of the COVID-19 pandemic [11]. COVID-19 halts not only classroom education but also clinical based practical education. Colleges, Universities, Hospitals, and other health care settings which were able to provide practical education to the students were closed following the declaration of COVID-19 as a worldwide pandemic [12].

In Ethiopia by considering a poor health care delivery system, the government official declares to close all educational institutions from primary to higher education institutions on March 16, 2020, in order to curb transmission of the disease. However, after nine months of the closure, the government lifted the national state of emergency and plan to reopen the schools under full implementation of COVID-19 protocols [13,14]. The challenges of COVID-19 affect the health of the students, their families, health care facilities, and academic institution in general. Training in health care institutions during the COVID-19 pandemic was difficult for the students. On the other hand, practical education during the challenging time was very crucial to increase the number of the health care workforce in response to the pandemic [15-17]. In the study area, the challenges of COVID-19 from the perspective of nursing students were unclear. Thus, the aim of this study was to explore challenges COVID-19 faced by nursing students during clinical education and provide direction on how to overcome those challenges.

METHODS AND MATERIALS

Study Design

The qualitative study method used a phenomenological approach was conducted to explore the challenges of COVID-19 related to students' practical education in their respective attachments at health facilities.

Study Population

Bule Hora University Nursing students were the participants of this study. As the responsibilities of nurses were direct patient care, nursing students were more prone to COVID-19 disease. Third and Fourth-year nursing students of Bule Hora University College of Medical and Health Science were included in the study. The two batches had clinical practical education at the time of the study in the health care settings.

The total focus group discussion conducted was four in which 24 descendants participated from two batches of third and fourth years, nursing students. The group discussion carried out using English language and the discussion was continued till the saturation of the idea was occurred. A quota sampling

technique was used to enroll the participants. The study subjects differ in terms of sex, age, academic year, and clinical attachment experience. This may enable us to get deep insights into the problem.

Data Collection Technique

For a better understanding of the challenges of COVID-19, the Focus group discussion (FGD) technique was used. Four FGD, two from the third year and two from fourth-year nursing students were included in the study. Each FGD took more than 60 minutes. A discussion guide and audio recorder were used to collect the data [18]. Additional questions were also asked based on the idea of participants raised to further insights. Verbal and nonverbal expressions were well recorded by the note taker. The moderators guide the discussion and play role in making the discussion focused, time and objective bound [19].

Data Analysis

Thematic analysis approach applied in this study to search, understand, and interpret challenges in the forms of main themes and subthemes. Before grouping data into themes, the raw data was transcribed, carefully understood by repeated readings to be familiarized with the data, and similarities and differences of ideas were identified by qualitative research experts. Before generating the initial codes, data cleansing was done through detection of the errors and inconsistency. Inaccurate or irrelevant data was corrected. Then, the initial code was made to generate subthemes. Themes were repeatedly reviewed, defined, and nominated. Finally, the result of the study was written up [19]. Atlas ti version-7 software was used for coding and forming quotations.

Trustworthiness of Data

To ensure the validity of the data, proper data collection procedure, focus group discussion that guided by a moderator who fluently speaks English language and Notetaker involved in the study. Verbal and nonverbal behavior was documented during FGD. The extensive data collection, which took more than sixty minutes for each group and a total of more than four hours were taken to collect the data. Non-participant students were invited and asked as the data represents their experience after analysis. The collected data were transcribed and reviewed by colleagues. The transcribed data was coded and after extensively reviewing the coded data, subthemes and themes were extracted. The emerged themes reviewed by qualitative research experienced colleagues and their feedback incorporated. Finally, the findings of the study were presented to the study participants to check as the results were their experience.

RESULTS

The participants of this study were 24, 12 of them from the third year and the others from fourth-year nursing students. Concerning the gender of the participants, sixteen of them were males whereas eight of them were females. The age of study subjects ranged from 21-28 with a median age of 23. After analysis of the data, four main themes and twelve subthemes of the challenges were extracted. The main themes of this study were; Risks to contracting COVID-19, negative impact on health

care, worry, and loss of experienced staff as shown in [Table 1](#).

Table 1: The extracted main themes and subthemes

S.no	Main Themes	Subthemes
1	Risk to contracting COVID-19	<ul style="list-style-type: none"> a. Contact with many patients b. Poor disinfection practice c. negligence
2	Negative impact on health care,	<ul style="list-style-type: none"> a. Altered patient–care provider relation b. Interruption of practical education c. Shortage of medical equipment
3	Worry	<ul style="list-style-type: none"> a. Fear of getting the disease b. Detachment of friendship relation with other students c. Negative attitude towards the profession
4	Loss of experienced staff	<ul style="list-style-type: none"> a. Quarantining of health care workers b. COVID-19 related death of health care providers c. Establishment of COVID-19 treatment center

The Risks to Contracting Covid-19 Disease

The participants of this study mentioned during FGD that there were favorable conditions for the spread of COVID-19 in the clinical care setting. All participants of this study emphasized on high risks of getting COVID-19 disease during clinical practices. This is due to contact with many patients, poor disinfection practices, and negligence of the students.

Contacting with Many Patients

Learning a skill is by doing. The students make contact with many patients during clinical practice like taking vital signs, conduct certain procedures, and carried out a physical examination. This contact or closeness favors the transmission of COVID-19. The majority of the patients admitted to the hospital come from rural areas where the prevention of COVID-19 was very poor, even the existence of disease itself was not believed by the population. On other hand, proper screenings of the patients were not done before admission. In this regard, one student said as follow;

“There was a female patient admitted to the medical ward with other medical conditions. She was my patient and I provide care to her for three days. Unfortunately, before the result of the lab investigation was reached, the patient passed away. Upon reaching of lab result, the finding was positive for COVID-19 virus.” (Male participant from fourth-year nursing).

Poor Disinfection Practice

To prevent the spread of COVID-19, disinfection of medical equipment and the ward surfaces is important. However, in the study setting, there were poor disinfecting practices carried out.

“... medical equipment such as; BP apparatus, thermometers, pulse ox meter, etc were used without disinfecting between the patients...” (Female participant from third-year nursing).

Negligence

Some students were reluctant to the COVID-19 prevention protocol. Unless they emphasized the protocol, they were easily susceptible to COVID-19.

“Some students were consciously broke the COVID-19 prevention protocol during their clinical attachment at health care set-up.” (Male participant from Fourth-year nursing).

Negative Impact on the Health Care

Generally, all participants of this study agreed on the service provided by the health care facility was disturbed due to the COVID-19 pandemic.

Altered Patient-Care Provider Relation

To provide quality care, good patient-care provider relation was crucial. However, after the rise of the COVID-19 pandemic, patient-care provider relations were affected. All participants of FGD agreed patient care-provider interaction was negatively affected.

“Due to fear of getting COVID-19 diseases, health care providers are far away from the patients. Particularly, patients with respiratory cases. As a result, health care workers do not get deep information about patients. These lead to patient’s treatment error.” (Female participant from Fourth-year nursing).

“Because of COVID-19 cases found in the hospital, I suspect all cases and far away from them. I am not vaccinated against COVID-19 virus. For this reason, I prefer to be a distance from the patient despite I am here to learn the clinical skill by doing.” (Male participant from Fourth-year nursing)

Interruption of Practical Education

As understood from participants of the FGD discussion, the raise of the COVID-19 pandemic leads to the interruption of practical education. The closing of education is to minimize the spread of COVID-19. On this issue, one student says;

“If the epidemic rises, this hospital may come treatment center to provide services for COVID-19 cases. At this time, the hospital may not give another service including clinical learning skill.” (Male participant from third-year nursing).

Shortage of Medical Equipment

COVID-19 cases treated at the treatment center, treatment center needs additional medical equipment to give full function. This leads to a shortage of medical supplies. “If COVID-19 cases raise, there is increasing case flow that uses many medical equipments such as advanced life support equipment, other basic life support, personal protective equipment, and beds. Inadequacy of that equipment in a health care setting is also another challenge.” (Male participant from fourth-year nursing).

Worry

All students participate in FGD agreed on psychological distress was the common challenge that faced them. This is due to fear of getting the disease and transmission to their family members, fear of stigma and isolation, fear from inadequate PPE, and the low-quality PPE they used.

Fear of Getting the Disease

As COVID-19 spreads easily through the aerosol droplet, contact with patients and equipment that has the virus, there is a high probability of being infected with the virus. As a result, all participants of this study were afraid of getting the COVID-19. In this regard, one student mentioned the following;

"I am a chronic asthmatic patient that makes me vulnerable to negative consequences of COVID-19. For this reason, I am in suspicion of getting the disease and died from my family and transmit the disease to other people." (Male participant from 4th year nursing).

Detachment of Friendship Relation with Other Students

Participants FGD discussed the student's interaction affected if they were infected with the COVID-19 virus. There may probability of being far away from one another if one of their members is infected with the virus.

"Clinical practical learning involves learning team. Learning a skill is better if it is in the team from one another to be competent. However, if one of the team members is infected, we will not work to gather as a team rather afraid of one another." Female participant from third-year nursing.

Negative Attitude towards the Profession

Some participants of this study reported that COVID-19 leads to a negative attitude towards the nursing profession as one role of nurses in direct patient care and contact with patients for a longer time.

"If student nurse infected with COVID-19, it is difficult to like the profession because the aim of the nurse is to provide care to the patients and remain healthy for them. On the other hand, if they infected while giving care to others, really this disappointing." (Male participant from third-year nursing).

Loss of Experienced Staff

Health care providers infected with COVID-19 than other segments of the population. Doctors, nurses, and other health care professionals also quarantined, died due to COVID-19. This leads to the shortage of knowledgeable health care workforces in health care facilities.

Quarantining of Health Care Workers

Quarantining suspected or infected health care workers with COVID-19 into the treatment center was mandatory. Suspected or infected health care workers were not continued care and even in quarantine centers, they stayed around two weeks. For this reason, the number of frontline health care workers reduced. One participant said the following;

"...if the number of health care professional quarantined, there may be a shortage of active health working force..." (Male participant from third-year nursing).

Covid-19 Related Death of Health Care Providers

The death of health care workers due to COVID-19 became in-

creasing. Comparing with the general population, death due to COVID-19 among health care providers was far superior. This is a great problem for Sub-Saharan Africa where healthcare manpower is below world health organization standards even before the occurrence of the pandemic. Concerning this issue, one study participant describes it as follow;

"...if COVID-19 cases raise, vulnerable health care workers those have a chronic illness and who were older age may be involved in patient care. These groups of health care professionals risk groups to the negative outcome of COVID-19 diseases." (Male participant from fourth-year nursing).

Establishment of Treatment Center

COVID-19 confirmed cases isolated or treated may be newly established treatment centers. The treatment center needs adequate health care professionals to give quality care. This brings critical challenges to a country with low health care manpower. Regarding this issue, one student said the following;

"If covid-19 cases to raises, many treatment centers may be stabled or previously multi-purpose hospitals shifted to provide care to covid-19 cases. The requirements of health care workers increase at the time. Therefore, establishing treatment centers for covid-19 cases leads to scarcity of health care man power in general." (Male participant from third-year nursing).

DISCUSSION

The aim of this study was to explore the challenges of COVID-19 on nursing students, over the functions of health care facilities and academic institutions. Findings of this study reveal, risks to contracting COVID-19 disease, negative impact on health care, worry, and loss of experienced staff were the major identified themes. One of the main themes of this study was the risk to getting the disease. This is in line with existing literature, which is the risk to getting COVID-19 as a caregiver was a significant challenge to the nursing students [15]. This is due to fact that learning skill in clinical setup exposes the students to contact with the many patients while providing care and the means of COVID-19 transmission by itself contributes to the spread of the disease.

Disturbance in service provided by health care facilities was one of the findings from this study. Alteration in patents-care provider relations was a concern reported by many study subjects. Similarly, the qualitative study carried out in tertiary teaching hospital in Spain indicated the shortage of the COVID-19 protective materials affects feeling health care providers and approaches to the patients [18]. This can be explained by the principle of prevention which was safety first. Therefore, an adequate protective measure enables health care workers to provide quality services to the patients.

The interruption of clinical education was another concern reported by participants of the study. This is supported by that closing of the teaching-learning institutions due to COVID-19 pandemic results in the removal of students from learning institutions. This measure was taken to reduce the risk of the students becoming infected [20]. This is due to the fact that where ever the COVID-19 cases raises, it is obvious for the interruption of the education.

According to the present study, psychological distress was one of the challenges of COVID-19. This finding agrees with existing literatures [21,22]. That the psychological wellbeing of the students is negatively affected by the COVID-19 pandemic. This is due to the fact that psychological disturbance of the students came from negative consequences of the disease, COVID-19 prevention protocol that halts social interaction and overall change in lifestyle of the students.

The finding of this study shows that students were in terrible because of fear of getting the disease and transmit it to their families. This agrees with published literature that is exposing of students to COVID-19 in clinical care settings leads to risks to the wellbeing of their family members [15]. This can be explained in terms of highly communicable nature of the SARS-CoV-2 virus.

Changes in school life which attribute to detachment of friendship relation reported by many study participants. This has coincided with other studies done in Newark, United States, and a study published in 2020 that reduced social and physical contact with others including the social-distancing measures aggravates multiple negative emotions and strong person to person spreads of COVID-19 has affected the daily activities of the students [23,24]. This due to facts that COVID-19 brings radical changes over the social lives of people of the world including higher education institutions students.

Developing negative attitudes towards the profession was out of finding from this qualitative study. This result is similar to a study carried out in Spain that health care providers reported, they were not like their profession due to fear of acquiring diseases and death [18]. This may be due to the worst condition of the COVID-19 across the globe, the highest infection and death report among health care workers.

This study explores quarantining of health care providers as a challenge COVID-19. This is analogous with the Center of disease prevention and control (CDC) guideline recommendation on COVID-19 exposed health care providers to be quarantined for fourteen days. This is due to the fact that maintaining the safety of the care provider as well as care receiver. However, quarantine minimizes the active frontline health care workforce [25].

The COVID-19 related death of health care workers is another subtheme of this study. This finding is in line with the Systematic review published in 2020, which is the highest number of infections and death occurred among health care workers. Of this, doctors, nurses, and health care workers age greater than fifty were among the greater death recorded [26]. This is maybe due to frontline health caregivers and those with underline disease conditions were among the risk group for COVID-19 disease.

Establishing a treatment center for COVID-19 cases needs extra healthcare manpower which reduces knowledgeable health care professionals to give quality care for other illnesses. However, many countries took different measures to meet their need for health care personal. Of those measures; participate in care medical and nursing students, retired health care personnel, foreign-trained health personnel, and any volunteers. This enables the countries to scale up their health workforce in response to COVID-19 [27].

Limitation of this Study

Four group discussions were carried out from two batches of nursing students. Therefore, is difficult to generalize the finding of this study to all students of Bule Hora University College of health and Medical science. In present study, only single data collection technique was used which is Focus Group Discussion that might be an impact on the credibility of the study.

CONCLUSION

Nursing students faced many challenges of COVID-19 during clinical practices. These challenges include; risks to getting the disease, alteration of patient-care provider relationship, interruption of education, shortage of personal protective equipment, change of relationship among themselves, and developing a negative attitude toward the nursing profession. The challenges were affecting, the student's practical skill learning and health care facility to provide quality care. Therefore, all students must be implementing the complete package of COVID-19 protocol in the health care facilities during the clinical attachment. On other hand, health care workers focused on safe procedural practices.

The students must take care of themselves while giving care to the patients and take COVID-19 virus screening to alleviate suspicion among them.

The health care facilities must routinely conduct screening for COVID-19 to all patients and health care workers must give care safely. Personal protective equipment (PPE) must be available in an adequate amount in the hospital.

Ethical Approval

Bule Hora University College of Health and medical science, Institutional Review Board (IRB) approved this project before the commencement of the study. There was no study participant aged less than eighteen who participated in this qualitative study. This study was harmless to the participants which require only the collection of the information related to their experience regarding COVID-19. After the aim of the study and right to refusal was explained, written informed consent was obtained from each participant of the study. Verbal consent was taken for recording their voice and took video. During group discussion, all participants of the study expressed their idea feely. The collected data (recorded audio and video) were kept in a safe place and data was used only for the purpose of the study to maintain the confidentiality of the collected data. Overall, concerning ethical issues in this study each traveled steps in line with the declaration of Helsinki.

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AUTHORS CONTRIBUTIONS

Author of this study played a key role in Conceived, designed the study, analyzed the data, wrote the manuscript, and approved the final version of the manuscript and selected journal

and took the responsibility for the tasks in all aspects.

COMPETING INTERESTS

Authors of this study affirm that there was no competing of interests (both financial and non-financial competing of interests).

REFERENCES

1. Organization WHO (2020) Key messages and actions for COVID-19 prevention and control in schools.
2. Saqlain M, Munir M, Rehman SU, Gulzar A, Naz S, et al. Knowledge, attitude and practice among healthcare professionals regarding COVID-19: A cross-sectional survey from Pakistan. *J of Hosp Infect* 105(3): 419-423.
3. Bhagavathula A, Aldhaleei W, Rahmani J, Mahabadi M, Bandari D (2020) Novel coronavirus (COVID-19) knowledge and perceptions: A survey on healthcare workers. *JMIR Public Health Surveill* 6(2): e19160.
4. Borzu R, Safari M, Khodavisi M, Torkaman B (2008) The Viewpoints of Nurses towards Applicability of Nursing Curriculum in Hospitals Affiliated to Hamedan University of Medical Sciences. *Iranian J Med Edu* 8(2): 205-211.
5. Nahas V, Humour (1998) A phenomenological study within the context of clinical education. *Nurse Educ Today* 18(8): 663-72.
6. Jamshidi N, Molazem Z, Sharif F, Torabizadeh C, Najafi Kalyani M et al. (2016) The challenges of nursing students in the clinical learning environment: A qualitative study. *ScientificWorldJournal* 2016: 1846178.
7. Moghaddam H, Aghamohammadi V, Jafari M, Absalan M, Nasiri K et al. (2020) Challenges faced by nursing students to work with nursing personnel: A Qualitative Study. *Adv Med educ Pract* 11: 313-319. Aquichan (2021) COVID-19, Teaching, and Service: The Challenge of Nursing Training Practices.
8. SHUN SC (2021) COVID-19 Pandemic: The Challenges to the Professional Identity of Nurses and Nursing Education. *J Nurs Res* 29(2): e138.
9. Shengxiao N, Xia W (2021) The Professional Identity of Nursing Students and Their Intention to Leave the Nursing Profession During the Coronavirus Disease (COVID-19) Pandemic. *J Nurs Res* 29(2): e139.
10. Brief P (2020) Education during COVID-19 and Beyond. United Nations.
11. Redden E (2020) Clinical education starts to resume, haltingly, in many health-care fields.
12. Mengistie T (2020) Impacts of COVID-19 on the Ethiopian Education System. *Sci Insigt Edu Front* 6(1): 569-578.
13. WHO (2020) Works with the health and education sectors to ensure COVID-19 prevention measures are in place as schools reopen in Ethiopia WHO Regional Office for Africa.
14. Dewart G, Corcoran L, Thirsk L, Petrovic K (2020). Nursing education in a pandemic: Academic challenges in response to COVID-19. *Nurse Educ Today* 92: 104471.
15. Eweida R, Desoky G, Khonji L, Rashwan Z (2020) Mental Strain and Changes in Psychological Health Hub among Intern-nursing Students at Pediatric and Medical-Surgical Units amid Ambience of COVID-19 Pandemic: A Comprehensive Survey. *Nurse Educ Pract* 49: 102915.
16. Haslam MB (2021) What might COVID-19 have taught us about the delivery of Nurse Education, in a post-COVID-19 world? *Nurse Educ Today* 97: 104707.
17. Fernández-Castillo R, González-Caro M, Fernández-García E, Porcel-Gálvez A, Garnacho-Montero J, et al. (2020) Intensive care nurses' experiences during the COVID-19 pandemic: A qualitative study. *Nurs Crit Care* 26(5):397-406.
18. Uprety L (2009) Qualitative data collection, analysis and presentation: A theoretical overview. *Dhaulagiri Journal of Sociology and Anthropology* 3: 83-122.
19. Rupley D, Grilo S, Kondragunta S, Amiel J, Matseoane-Petersen D, Catalozzi M (2020) Mobilization of health professions students during the COVID-19 pandemic. *Semin Perinatol* 44(7): 151276.
20. Browning M, Larson L, Sharaievska I, Rigolon A, McAnirlin O, Mullenbach L (2021) Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PLoS one* 16(1): e0245327.
21. Dodd R, Dadaczynski K, Okan O, Caffery K, Pickles K et al. (2021) Psychological wellbeing and academic experience of University students in Australia during COVID-19. *Int J Environ Res Public Health* 18(3): 866.
22. Heilferty C, Phillips L, Mathios R (2021) Letters from the pandemic: Nursing student narratives of change, challenges and thriving at the outset of COVID-19. *J Adv Nurs* 77(8): 3436-3445.
23. Aristovnik A, Keržič D, Ravšelj D, Tomaževič N, Umek L et al. (2020) Impacts of the COVID-19 pandemic on life of higher education students: A global perspective. *Sustainability* 12(20): 8438.
24. CDC (2020) Interim US guidance for risk assessment and work restrictions for healthcare personnel with potential exposure to COVID-19.
25. Bandyopadhyay S, Baticulon R, Kadhum M, Alser M, Ojuka D, et al. (2020) Infection and mortality of healthcare workers worldwide from COVID-19: a systematic review. *BMJ global health* 5(12): e003097.
26. Williams G, Maier C, Scarpetti G, Belvis A, Fattore G, et al. (2020) What strategies are countries using to expand health workforce surge capacity during ten eurohealth 26(2):51-57.