كليـــــــة الـطـب
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جامعة القاضي عياض
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EFFECTIVE COMMUNICATION BETWEEEN NURSES AND DOCTORS: BARRIERS AND STRATEGIES TO IMPROVE INTERPROFESSIONAL COLLABORATION

THESIS

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By

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TO OBTAIN THE DEGREE OF DOCTOR OF MEDICINE

KEYWORDS:

Nurse-Doctor-Communication-Level-Barriers-Interprofessional-Collaboration-Improvement Strategies.

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IN THE NAME OF ALLAH THE BENEFICENT THE MERCIFUL

صدق الله العظيم

Hippocratic Oath

I swear to fulfill, to the best of my ability and judgment, this covenant: I will respect the hard-won scientific gains of those physicians in whose steps I walk, and gladly share such knowledge as is mine with those who are to follow. I will apply, for the benefit of the sick, all measures [that] are required, avoiding those twin traps of overtreatment and therapeutic nihilism. I will remember that there is art to medicine as well as science, and that warmth, sympathy, and understanding may outweigh the surgeon's knife or the chemist's drug. I will not be ashamed to say "I know not," nor will I fail to call in my colleagues when the skills of another are needed for a patient's recovery. I will respect the privacy of my patients, for their problems are not disclosed to me that the world may know. Most especially must I tread with care in matters of life and death. If it is given me to save a life, all thanks. But it may also be within my power to take a life; this awesome responsibility must be faced with great humbleness and awareness of my own frailty. Above all, I must not play at God. I will remember that I do not treat a fever chart, a cancerous growth, but a sick human being, whose illness may affect the person's family and economic stability. My responsibility includes these related problems, if I am to care adequately for the sick. I will prevent disease whenever I can, for prevention is preferable to cure. I will remember that I remain a member of society, with special obligations to all my fellow human beings, those sound of mind and body as well as the infirm. If I do not violate this oath, may I enjoy life and art, respected while I live and remember with affection thereafter. May I always act so as to preserve the finest traditions of my calling and may I long experience the joy of healing those who seek my help.

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311	ABI EL AALA Khalid	Pr Ass	Pédiatrie
312	AFANI Leila	Pr Ass	Oncologie médicale
313	EL MOULOUA Ahmed	Pr Ass	Chirurgie pédiatrique
314	LAGRINE Mariam	Pr Ass	Pédiatrie
315	OULGHOUL Omar	Pr Ass	Oto-rhino-laryngologie
316	AMOCH Abdelaziz	Pr Ass	Urologie
317	ZAHLAN Safaa	Pr Ass	Neurologie
318	EL MAHFOUDI Aziz	Pr Ass	Gynécologie-obstétrique
319	CHEHBOUNI Mohamed	Pr Ass	Oto-rhino-laryngologie
320	LAIRANI Fatima ezzahra	Pr Ass	Gastro-entérologie
321	SAADI Khadija	Pr Ass	Pédiatrie
322	DAFIR Kenza	Pr Ass	Génétique
323	CHERKAOUI RHAZOUANI Oussama	Pr Ass	Neurologie
324	ABAINOU Lahoussaine	Pr Ass	Endocrinologie et maladies métaboliques
325	BENCHANNA Rachid	Pr Ass	Pneumo-phtisiologie
326	TITOU Hicham	Pr Ass	Dermatologie
327	EL GHOUL Naoufal	Pr Ass	Traumato-orthopédie
328	BAHI Mohammed	Pr Ass	Anesthésie-réanimation
329	RAITEB Mohammed	Pr Ass	Maladies infectieuses
330	DREF Maria	Pr Ass	Anatomie pathologique
331	ENNACIRI Zainab	Pr Ass	Psychiatrie
332	BOUSSAIDANE Mohammed	Pr Ass	Traumato-orthopédie
333	JENDOUZI Omar	Pr Ass	Urologie
334	MANSOURI Maria	Pr Ass	Génétique
335	ERRIFAIY Hayate	Pr Ass	Anesthésie-réanimation
336	BOUKOUB Naila	Pr Ass	Anesthésie-réanimation
337	OUACHAOU Jamal	Pr Ass	Anesthésie-réanimation
338	EL FARGANI Rania	Pr Ass	Maladies infectieuses
339	IJIM Mohamed	Pr Ass	Pneumo-phtisiologie
340	AKANOUR Adil	Pr Ass	Psychiatrie
341	ELHANAFI Fatima Ezzohra	Pr Ass	Pédiatrie
342	MERBOUH Manal	Pr Ass	Anesthésie-réanimation
343	BOUROUMANE Mohamed Rida	Pr Ass	Anatomie
344	IJDDA Sara	Pr Ass	Endocrinologie et maladies métaboliques

LISTE ARRETEE LE 09/01/2024

DEDICATIONS

Tout d'abord à ALLAH

Le tout puissant et miséricordieux, qui m'a donné la force et la patience d'accomplir ce modeste travail.

Qui m'a inspirée et guidée dans le bon chemin, Je lui dois ce que je suis devenue.

Louanges et remerciements pour sa clémence et sa miséricorde.

الْحَمْد لِلَّهِ الَّذِي بِنِعْمَتِهِ تَتِمُّ الصَّالِحَاتُ

To my dearest mommy

You are my everything, my rock, and my guiding light. As I stand here today, on the brink of a new chapter as a doctor, I owe everything to you. Your love, support, and unwavering belief in me have been my greatest blessings.

Mom, you possess a unique ability to understand me without words, to know my heart's desires, and to fill our home with endless love and laughter. Your gentleness, tenderness, and humor make every day brighter.

You are my source of energy, my problem-solver, and my greatest cheerleader. Your resilience and determination inspire me to be the best version of myself. You are the reason behind my accomplishments, the source of my inspiration, and my constant source of love and support. I could not have achieved this without you by my side.

I dedicate my graduation as a doctor to you, Mom. Thank you for being my everything, for shaping me into who I am today, and for always being there, no matter what. I love you more than words can express and I am forever grateful for your presence in my life.

To my dearest father

Today, as I stand on the cusp of a new chapter in my life as a doctor, I am filled with profound gratitude for you. You, Dad, are my idol, the epitome of hard work, resilience, and determination. Your journey, from humble beginnings to achieving remarkable success, has been a constant source of inspiration for me.

You have always been the hardest working person I know, accomplishing incredible things from nothing. Your unwavering dedication to your goals and your relentless pursuit of excellence have taught me the value of perseverance and the importance of never giving up on my dreams.

Dad, you are more than just my father; you are my mentor, my role model, and my guiding light. Your wisdom, strength, and unwavering belief in me have been the driving forces behind my success.

Today, I dedicate my graduation as a doctor to you, Dad. Thank you for being my rock, my source of inspiration, and my greatest supporter. I am who I am today because of you, and I will forever be grateful for your love, guidance, and example.

To my dear brother Adil

As I reach this significant milestone in my journey, I want to express my deep appreciation for the profound impact you've had on my life. You're not just my brother; you're my closest friend, my confidant, and the source of endless joy and laughter in our lives.

Despite the four-year age gap, I've always seen you as my twin. Your remarkable maturity, responsibility, and wisdom are matched only by your incredible sense of humor, which never fails to lift our spirits. Your presence alone is enough to dispel any feelings of sadness or despair.

You are more than a brother to me; you are a pillar of strength and support, often filling the role of a second father in our family. Your unconditional love, guidance, and understanding have been constants in my life, for which I am eternally grateful.

Adil, thank you for being the amazing person you are and for being such an integral part of my life. My love for you knows no bounds.

To my beloved sister Wijdane,

You are not just my sister; you are my closest companion, my roommate, and my unwavering support system.

Despite your penchant for complaining and the occasional pilfering of my belongings, your presence in my life has been a constant source of joy and laughter. You are always there, following us to turn off lights and gas, and caring deeply for each member of our small family.

You are not just the prettiest, but also the one who cares the most. Despite being far from our parents, you always ensure that I eat after my shifts, taking care of me in your own special way.

Thank you for being my companion. I cherish the memories we've created together and look forward to many more adventures ahead.

To my dear brother Simo,

I want to take this moment to express my deepest gratitude for your presence in my life. You are not just my brother; you are my son, my pride, and my joy.

Despite your demanding nature, your heart is filled with an abundance of care and compassion. Your love knows no bounds, and your kindness shines through in everything you do. You are truly a gem with a heart of gold.

Your intelligence surpasses that of anyone I know. Your ability to think like a man while still being a young boy never ceases to amaze us. Your talks are always enlightening and inspiring, showcasing a wisdom far beyond your years.

Thank you for being my son, my brother, and my constant source of joy. I look forward to watching you grow and achieve great things in life.

To my dear Aunt Amal and Uncle Abdelouahab

Being the first child in our family, I have never felt the need for a big brother or sister because you both have filled that role perfectly. You have been always there to stand by me through thick and thin, supporting me and cheering me on. I cannot recall a single important or challenging moment in my life without you both standing beside me.

Your unwavering love, support, and presence in my life have been a constant source of strength and inspiration. You have taught me the true meaning of family and the importance of being there for each other no matter what.

I love you and I am forever grateful for your love and support.

To my dear grandparents

Grandmothers and Grandfather, your warmth, kindness, and gentle spirits have always made me feel loved and cherished. You all have been sources of unconditional love and encouragement, and I am truly blessed to have you as my grandparents. Your guidance and blessings have been instrumental in shaping me into the person I am today.

To my dear friend Hasna

We met in high school, and since then, you have been my best friend. We have shared so much together, from participating in spelling bees to dreaming about our futures. We have watched each other grow up, supporting and encouraging one another every step of the way.

I am grateful for every moment we have shared and for the countless memories we have created together. You have been a constant source of love and inspiration in my life, and I cherish our friendship more than words can express.

I love you, Hasna, and I am so grateful to have you as my friend.

To my dearest Ikram, Hanane, and Wafaa,

We have shared not only a home but also countless moments of joy, sorrow, and growth. From late-night study sessions to celebrating small victories, we have been through it all together.

Thank you for being the best housemates ever and for being a part of my journey. I am forever grateful for your friendship and the bond we share

To my dear friend Aya

I want to take a moment to acknowledge the special place you hold in my heart. You were my first friend in med school, and even though we don't see each other often, I know that your love and support are always there.

I wish you all the best, Aya. May your path be filled with happiness, success, and love. Thank you for being such a wonderful friend.

To my dear friend Ikram El Atlassi

We have shared countless moments together; your kindness and sweetness have always been a source of comfort for me. You have a heart of gold, and your compassion knows no bounds. As we embark on new paths, I want you to know how much your friendship means to me.

I love you

To my dear 21st promotion of interns,

As I stand here on the day of my graduation, I am filled with gratitude for each of you. We are more than just colleagues; we are family, as we used to call it. Together, we have shared countless moments, faced numerous challenges, and experienced the highs and lows of this journey.

We have laughed together, cried together, and supported each other through it all. Our bond goes beyond the walls of the hospital; it is a bond forged through shared experiences and a common goal.

As we go our separate ways and embark on our individual paths, I want to thank each of you for being a part of my journey. You have made this experience richer and more meaningful, and I am grateful for each of you.

To the 21st promotion of interns, thank you for being my family. May we carry the memories of our time together in our hearts forever.

To my dear 22nd promotion of interns,

I have had the privilege of watching you mature and grow throughout our time together, and I am confident that you will all be great doctors.

You have shown dedication, passion, and a willingness to learn that will serve you well in your careers. As we part ways and embark on our respective journeys, I want to express my gratitude for having had the opportunity to work alongside each of you.

I wish you all the best in your future endeavors. May you continue to grow, learn, and make a difference in the lives of others.

ACKNOWLEDGEMENTS

To Professor and President of jury AMINE MOHAMED
Head of the department of Epidemiology and Public Health at the University Hospital Mohammed VI

We are infinitely grateful for the great honor you have bestowed upon us by agreeing to preside over our thesis. Your dedication to excellence and your exemplary conduct serve as a beacon for all future doctors to emulate. Your commitment to teaching and your exceptional ability to explain complex concepts have not only enriched my academic journey but have also inspired me to strive for excellence in my research. I am truly fortunate to have had the opportunity to learn from you.

To Professor and supervisor BOURROUS MOUNIR.
Head of the pediatric emergency department at the University Hospital Mohammed VI

I am immensely grateful for the privilege of working under your guidance as my thesis mentor and supervisor. Throughout this journey, I have not only benefitted from your academic expertise but also witnessed firsthand your exceptional character and compassion. Your unwavering dedication to patient care, your exemplary treatment of students and professionals within the department, and your modesty have left an indelible impression on me. Your big heart and genuine kindness serve as a beacon of inspiration, illuminating the path for aspiring healthcare professionals like myself. Without your supervision, this work would not have been possible Thank you for your invaluable mentorship, guidance, and for being a shining example of excellence in both academia and humanity.

To Professor and jury member HACHIMI ABDELHAMID,
Head of the medical intensive care departmentat the
University Hospital Mohammed VI

I wish to express my utmost respect and heartfelt gratitude for graciously agreeing to serve as a jury member for my thesis. Your reputation as a leader in the intensive care field precedes you, and your willingness to dedicate your time and expertise to evaluate my work is deeply appreciated. Your commitment to excellence and your unwavering dedication to patient care serve as an inspiration to me and many others in the field.

To Professor and jury member LAHMINI WIDAD
Professor at the pediatric emergency department at the
University Hospital Mohammed VI

Getting to know you closely has been a privilege. You are a true source of positive energy, always inspiring those around you. Your ability to empathize with both your students and patients, often anticipating their needs with your sixth sense, is truly remarkable. Thank you, for your dedication and for being a beacon of empathy and positivity in our academic and professional journey."

To Doctor and jury member Mrs. JBARI SIHAM
Permanent teacher at the ISPITS of Marrakech.

You are a remarkable woman, embodying the qualities of a compassionate caregiver, a dedicated mother, and an inspiring teacher. Your extensive contributions to the field of nursing and education are evident in the many impressive works you have been a part of. Thank you, Mrs. for your time, your dedication to nursing and education, and for accepting to judge my work.

Epidemiology Department, University Hospital Mohammed VI

I would like to express my sincere gratitude to Dr. El Mansoury Ouassim from the Epidemiology Department for his invaluable support and assistance throughout my study.

LIST OF ABREVEATIONS

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NDC : Nurse-doctor communication

NPC : Nurse-physician communication

IPE : Interprofessional education

IPC : Inter-professional collaboration

UHC : University Hospital Center

ICU : Intensive care unit

OR : Operating room

SPSS : Statistical Package for the Social Sciences

QSEN : Quality and Safety Education for Nurses

WHO : World health organization

SBAR : Situation-Background-Assessment-Recommendation

TeamSTEPPS : Team Strategies and Tools to Enhance Performance and Patient Safety

IPTW : Interprofessional Training Wards

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INTRODUCTION

Improving quality and safety has become a priority for hospitals worldwide in recent decades. Effective communication among healthcare team members is one of the hallmarks of safe and highly reliable patient care [1]. Improving the communication between healthcare team members under rapidly changing social and medical conditions is becoming increasingly important.[2]

Nurse-doctor communication (NDC) is a process by which nurses and doctors share and discuss, correct, timely based, frequent and problem-solving nature of information about the patient. It is a professional interaction, working together, shared decision-making around health issues, formulating a collaborative patient care plan.[3] To get the job done right, information need to be transferred in a clear and reliable way with respect and satisfaction. It is not only what is said that matters, but also the way it is communicated between nurse and physician. [4]

Nurses and doctors constitute the two main groups of healthcare professions providing direct patient care. Throughout the entire history they have shared a complicated relationship. Since the challenges in effective communication between these healthcare professionals, initially described as the 'Doctor-Nurse Game' in 1967, persist to the present day.[5-8]

Nurse-doctor communication remains a public health challenge in the health care setting, especially of developing countries. Clear and respectful nurse-physician communication (NPC) is very crucial for the health of the patients and the success of the healthcare system. Numerous studies have shown that inter-professional communication gaps are the leading cause of adverse medical events that compromise the quality of patient care. Although it has negative consequences and wider effects on patient care, nurse-doctor communication is rarely studied in Africa.[3,9,10]

The effects of communication breakdown range from simple errors and unhappy employees to patient deaths and serious lawsuits. In fact, poor nurse-doctor communication has a substantial negative effect on patient safety, as well as the patient experience of care, nurses and physicians' satisfaction, care quality, and non-clinical outcomes such as additional costs associated with unnecessary readmissions, duplicative testing, and other forms of waste and inefficiency. [11,12]

There are a number of contributing factors hindering nurse-doctor communication relating to the innate characteristics of nurses and doctors and how they tend to communicate, and the practice environments.[13] Unattractive working environment, poor work performance and negative attitudes of professionals, unsatisfactory value for communication by professionals, and bad professionals' personal behavior were considered as important barriers for nurse-doctor communication, contributing to suboptimal outcomes in patient care.[3]

As the first to address the topic of effective communication between nurses and doctors in Morocco, this study aims to highlight the importance of communication, as a way to contribute valuable insights that can enhance collaborative practices and ultimately improve patient care within our healthcare system, as well as to lay the groundwork for future studies and fostering a deeper understanding of inter-professional interactions in the Moroccan healthcare landscape.

Our specific objectives are to:

- Evaluate nurses and doctors' perception of communication importance and its impact on different aspects of healthcare.
- Evaluate the current level of communication between nurses and doctors and identify the existing barriers.
- Explore potential strategies to improve inter-professional collaboration (IPC).

PARTICIPANTS AND METHODES

I. Study area and period:

1. Study type and period:

Our survey is a descriptive analytical cross-sectional study, among nurses and doctors of the Pediatric Departments of Mother and Child Hospital, University Hospital Center (UHC) Mohamed VI of Marrakech. It was conducted from December 26/2023 to February 16/2024, in order to evaluate nurses and doctors' perception of communication importance and its impact on different aspects of healthcare, evaluate the current level of communication between nurses and doctors, to pinpoint existing barriers and to explore potential strategies to improve inter-professional collaboration.

2. Study area: department description:

The Pediatric Departments include: Pediatric emergencies, neonatology unit, pediatric ICU (intensive care unit), pediatric OR (operating room), pediatric surgery A and B, pediatrics A and B, and comprise a total of 296 nurses and doctors.

II. Population and sampling procedure:

Our study employed a non-probability sampling technique.

1. Inclusion criteria:

All nurses and doctors (interns, residents, specialists and professors) working in the Pediatric Departments of Mother and Child Hospital, UHC Mohamed VI of Marrakech, were considered as source population.

2. Exclusion criteria:

Nurses and doctors who were not on the job (those who were on annual leave, study leave, sick leave) during the data collection period in addition to those who refused to participate in the study were excluded.

III. Study instrument:

Data was collected using pre-tested Likert scale type self-administered questionnaire with 5 parts, developed in two languages English and French:

- **Part-I:** Socio-demographic characteristics (age, gender, marital status, work experience, department, professional category).
- **Part-II:** Nurses and doctors' perception of the importance and the impact of effective communication on different aspects of the healthcare, which has 2 items about communication importance rated from (1) strongly disagree to (5) strongly agree and 6 items about the impact of poor communication rated from (1) no impact to (5) significant impact.
- **Part III:** Level of nurse-doctor communication in patient care with 19 items where participants were asked to rate each item on a 5-point scale which ranges from never (1) to always (5).
- **Part-IV:** Barriers to effective communication between nurses and doctors which has 19 items and participants were asked to rate each factor on a 5-point agreement scale which ranges from strongly disagree (1) to strongly agree (5).
- **Part V:** Strategies to improve nurse-doctor collaboration which has 8 items rated from (1) least effective to (5) most effective

IV. Data collection procedures:

The questionnaire was generated and distributed in two languages French and English, using two methods to get maximum survey responses:

- Microsoft word to elaborate a printable form that was given in person to nurses and doctors of the Pediatric Departments. (Pediatric emergencies, neonatology unit, pediatric ICU, pediatric OR, pediatric surgery A and B, pediatrics A and B) to fill it out. In the absence of respondents repeated visits were done.
- Google forms to elaborate an online form that was sent out to participants through WhatsApp groups and emails

V.Operational Definitions:

- **Level of NPC:** Measured by 19-items of 5-score Likert scales (1= never, 2= rarely, 3=Sometimes, 4= usually and 5= always) containing statements related to NPC in patient care where the total score ranges from 19 to 95. The responses of each participant were first added up, and their means were computed. Then, levels of NPC were categorized and recoded as good and poor. Good level of NPC: the level of NPC where respondents have a score of greater than or equal to the mean scores (x =55.19) of items from the components of NPC in the questionnaire. Poor level of NPC: the level of NPC where respondents have a score of less than the mean scores (x =55.19) of items from the components of NPC in the questionnaire. [3]
- **Work attitude-related personal individuals' factors:** are factor scores that include noncompliance with advice, negligence of duty, abusive (verbal, physical, and sexual) behavior, poor attitude to one's work, and uncooperativeness at work High score of work attitude related personal individual factors: for those participants who have scored of greater than or equal to the mean score (x =16.15) of work attitude related personal

individual factors. Low Score of work attitude-related personal individual factors: for participants who have scored less than the mean score (x =16.15) of work attitude related personal individual factors. [3]

- **Personal behavior-related individual factors:** are factor scores that include disruptive behaviors, unfavorable attitude toward other professionals (Nurse or Physician), and inappropriate inter-professional communication skill. High score of personal behavior-related individual factors: for participants who have scored greater than or equal to the mean score (x =12.61) of personal behavior-related factors. Low Score of Personal behavior-related individual factors: for those participants who have scored less than the mean score (x =12.61) of personal behavior-related individual factors. [3]
- **Organizational related factors:** are factor scores that include differential treatment of nurses or physicians in the hospital, absence of forum regarding NPC, lack of shared vision between nurses and physicians in the hospital, conflicting orders from physicians, lack of clarity of roles and responsibilities, and disorganized hospital management system. High score of organizational related factors: for those participants who have scored greater than or equal to the mean score (x =16.15) of organizational related factors. The low score of organizational factors: for those participants who have scored less than the mean score (x = 16.15) of organizational related factors.[3]

VI. Data Processing and Analysis:

Before the analysis, data were coded, cleaned, and checked for any missing value. Subsequently, SPSS 23 software was employed for all statistical analyses. Fisher's Exact Test was utilized to ascertain the association between each independent variable and the outcome variable, namely level of nurse-doctor communication (NDC), with statistical significance declared at a p-value below 0.05. Descriptive analyses were conducted utilizing proportions and

summary statistics to provide an overview of the data distribution. Finally, the results were comprehensively presented through frequency tables, figures, and summary measures.

VII. Ethical considerations:

The goal of the study was described in person and in the invitation link in addition to the participants' rights. No identifying information was therefore collected and consent was obtained at the beginning of the survey. A decline of consent resulted in automatically ending the questionnaire.

RESULTS

Descriptive analysis:

I. The response rate:

- The data collection process for our study involved the distribution of 200 manual copies of the questionnaires in addition to electronic submissions.
- From these efforts, a total of 146 responses were received, with 71 completed surveys collected from doctors and 75 from nurses. During the data screening phase, 6 incomplete responses were excluded, comprising 1 from a nurse and 5 from doctors. As a result, a total of 140 valid and comprehensive responses were retained for analysis including 70 doctors and 70 nurses.
- The Pediatric Departments comprise a total of 296 nurses and doctors, including 117 doctors and 179 nurses.
- This participation resulted in a response rate of 47%.

II. Sociodemographic characteristics:

1. Age of respondents:

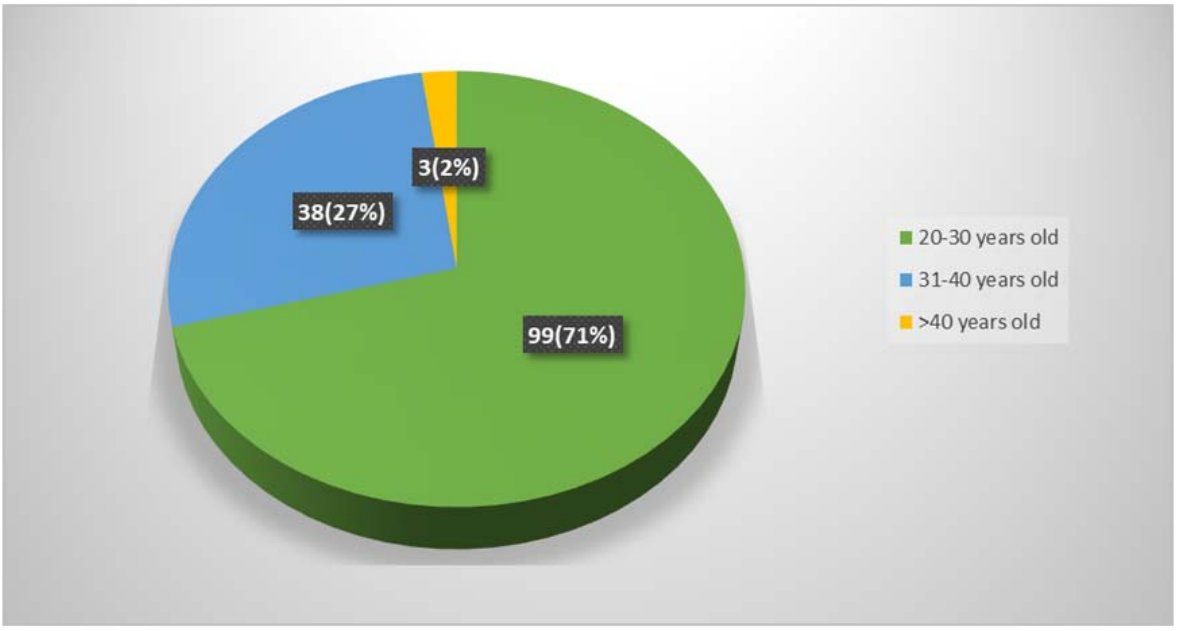


Figure1: Age distribution of the participants.

In terms of participants distribution by age, the study revealed that the majority were from the age group 20 to 30 years old constituting 71% of the participants, followed by the age group 31 to 40 years old representing 27% of the respondents.

2. Gender of respondents:

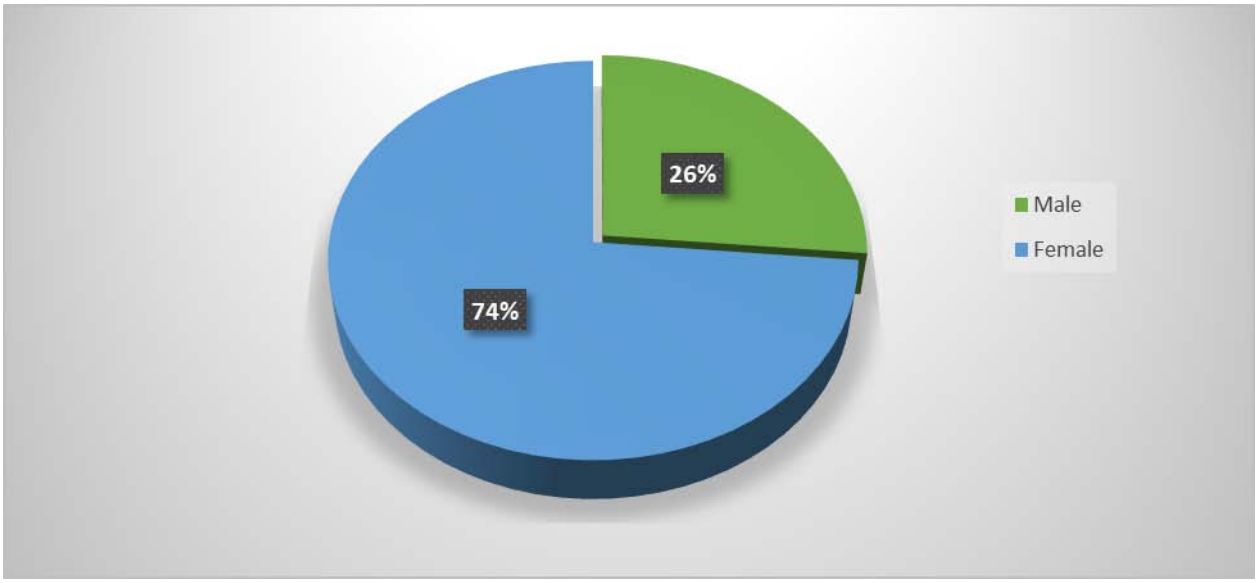


Figure2: Gender distribution of the participants.

In terms of participants distribution by gender, among the 140 participants 103 identified as female, constituting 74% of the total participants. This yields a sex ratio (M/F) of 0.36, reflecting a notable predominance of female participants.

3. Marital status:

The majority, precisely 97 individuals, identified as single, representing 69% of the total respondents.

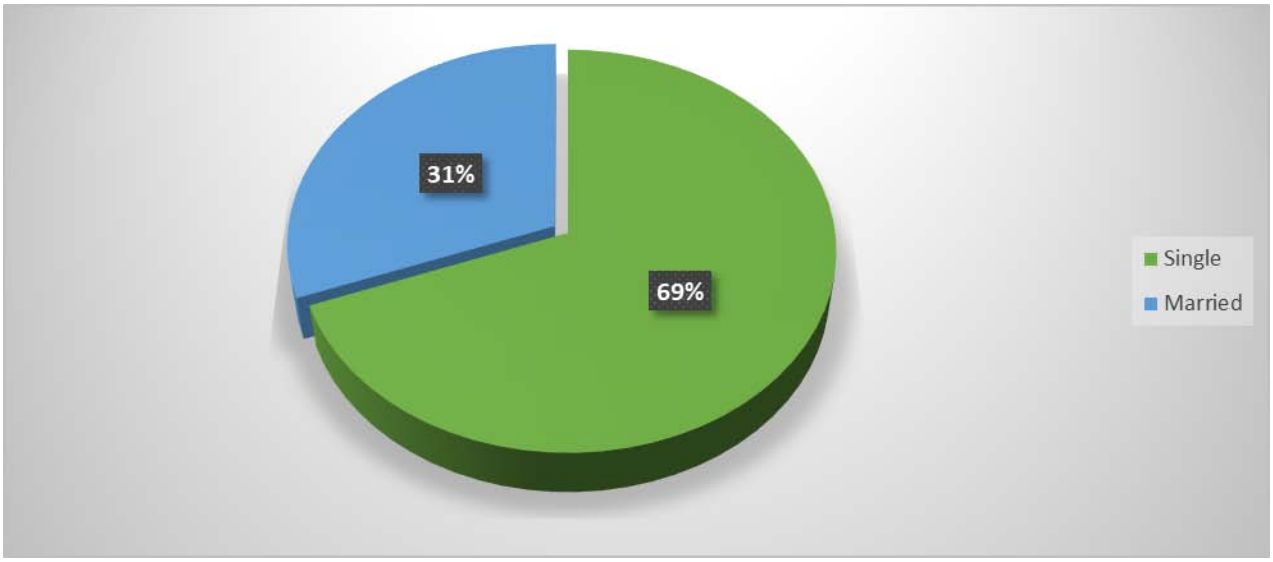


Figure3: Marital status distribution of the respondents.

4. Professional category:

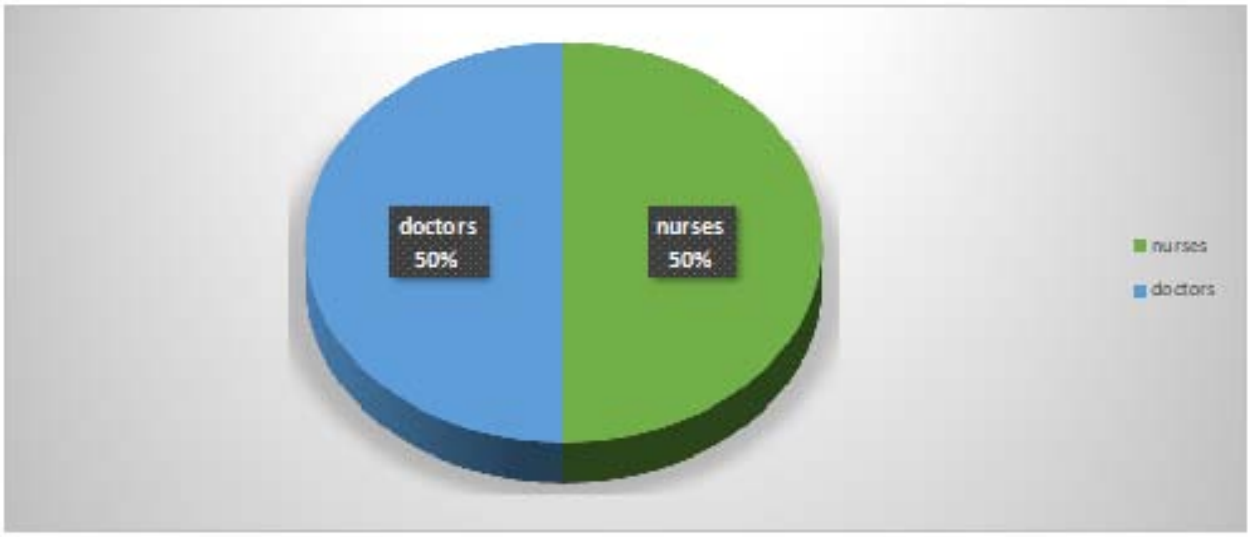


Figure 4: distribution of participants by professional category

In terms of professional category, the results revealed a balanced representation. Among the 140 participants 70 were nurses, constituting 50% of the total participants. Equally, 70 participants identified as doctors, representing 50% of the overall sample.

5. Work experience:

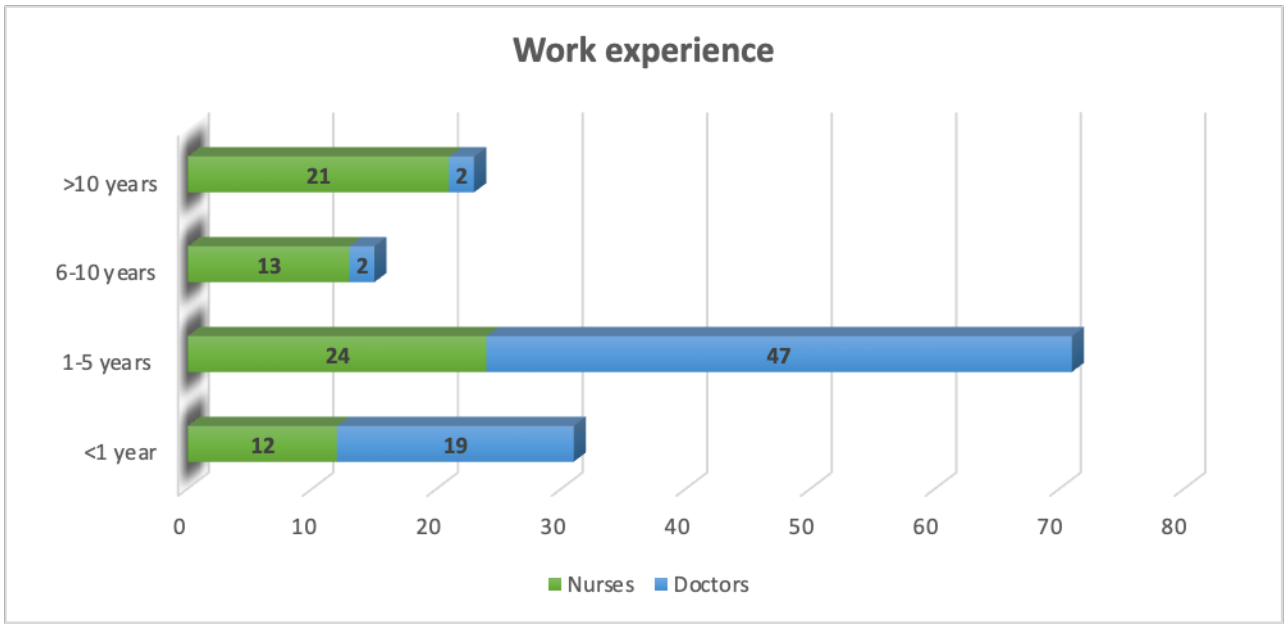


Figure5: Frequency distribution of doctors and nurses according to their work experience

Among participants who reported having more than 6 years of experience the majority were nurses, while the major part of those who reported having less than 6 years of service were doctors.

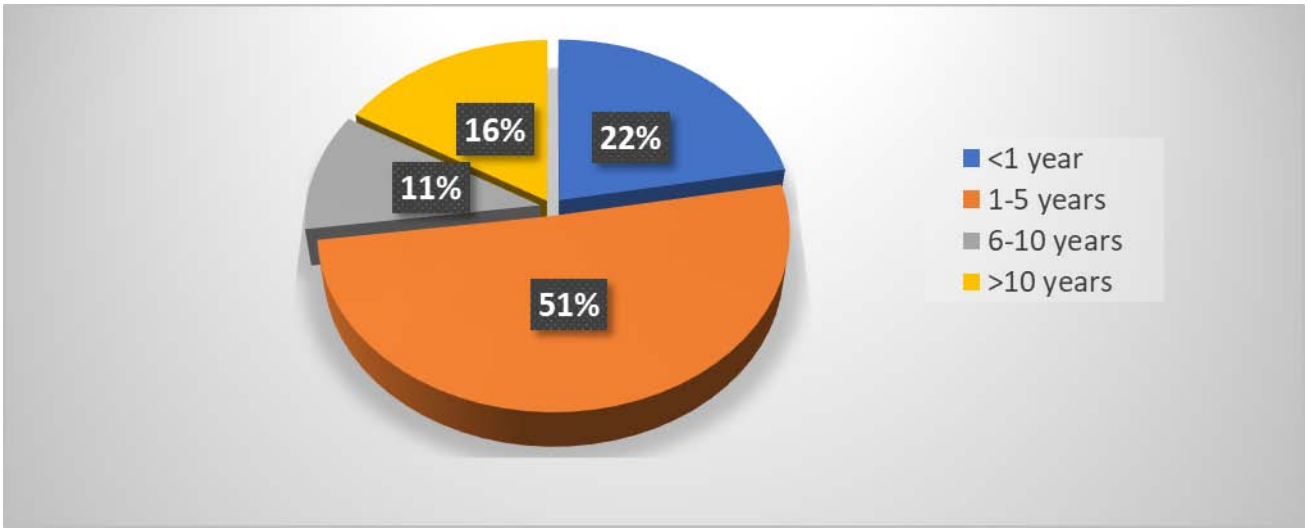


Figure6: Percentage distribution of respondents by years of work experience

Regarding the distribution of participants based on their years of work experience, a substantial part including 71 participants, representing 51% of the total, fell within the 1-5 years of service category.

6. Doctors' status:

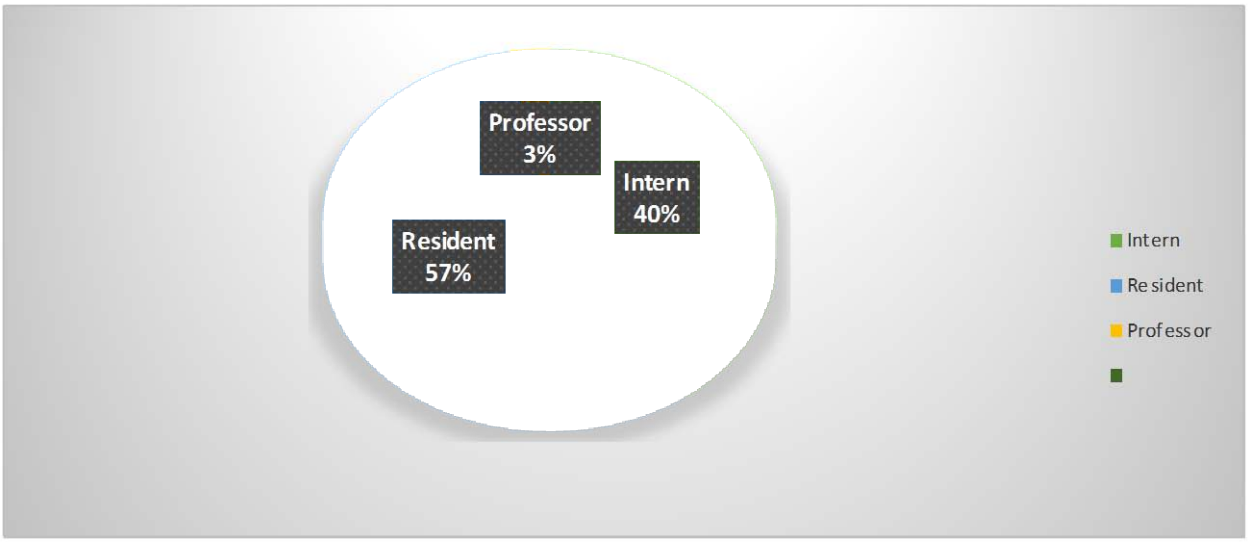


Figure 7: distribution of doctors by status

More than half of our doctors, representing 57% were residents. Followed by interns, constituting 40% of the total with 28 doctors.

7. Nurses' specialties:

Within our survey of 70 nursing participants, a significant 80% of the nurses, totaling 56 individuals were general nurses.

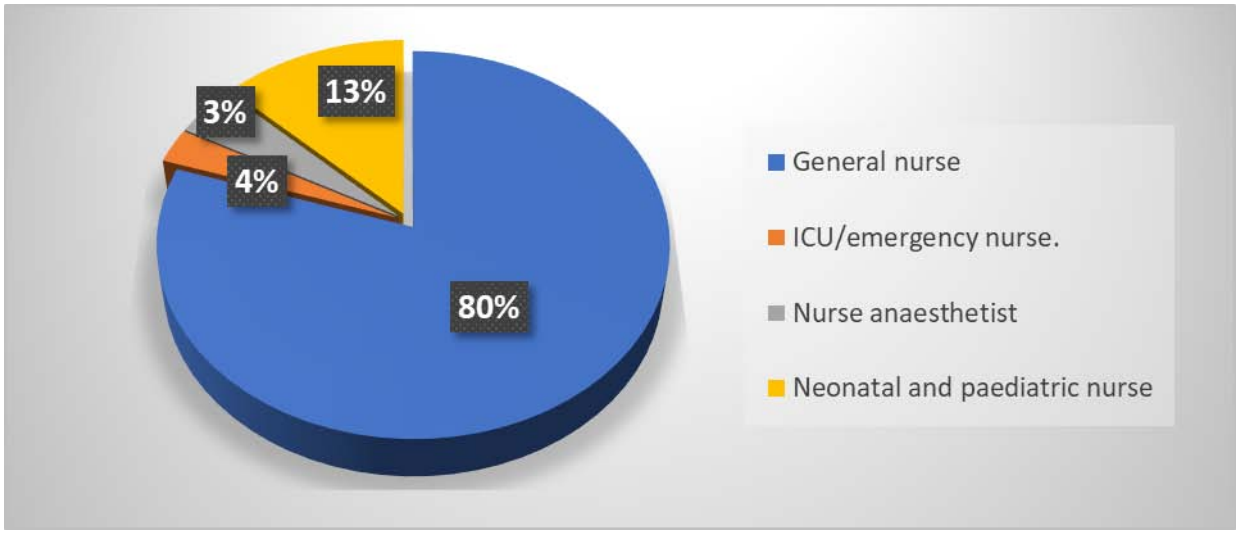


Figure 8: Nurses' distribution according to their specialties:

8. Doctors and nurses' distribution according to their departments

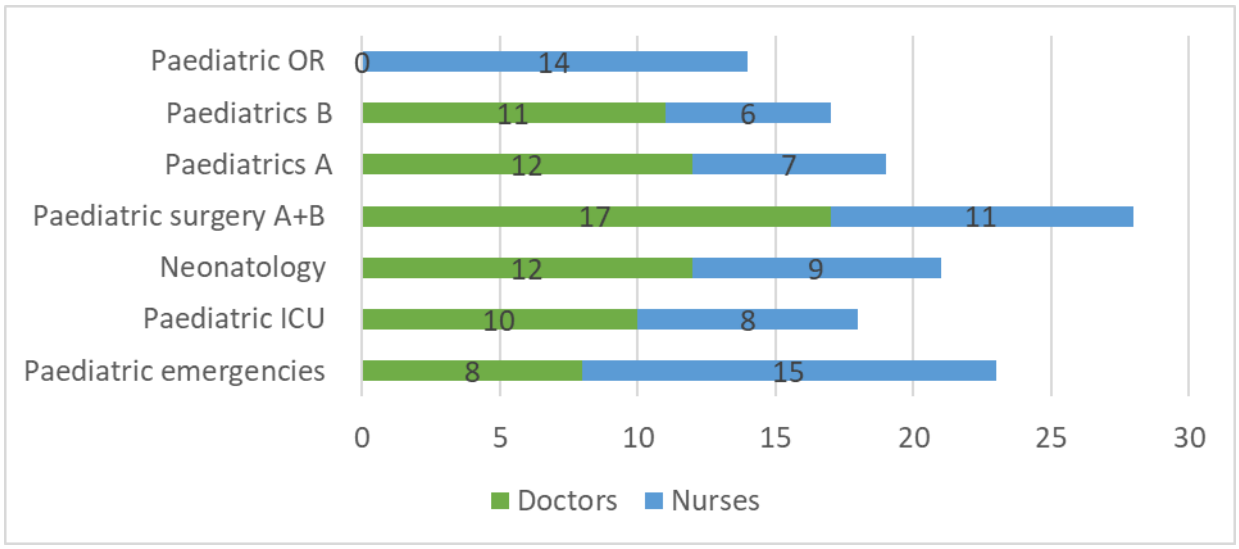


Figure9: Frequency distribution of doctors and nurses according to their department.

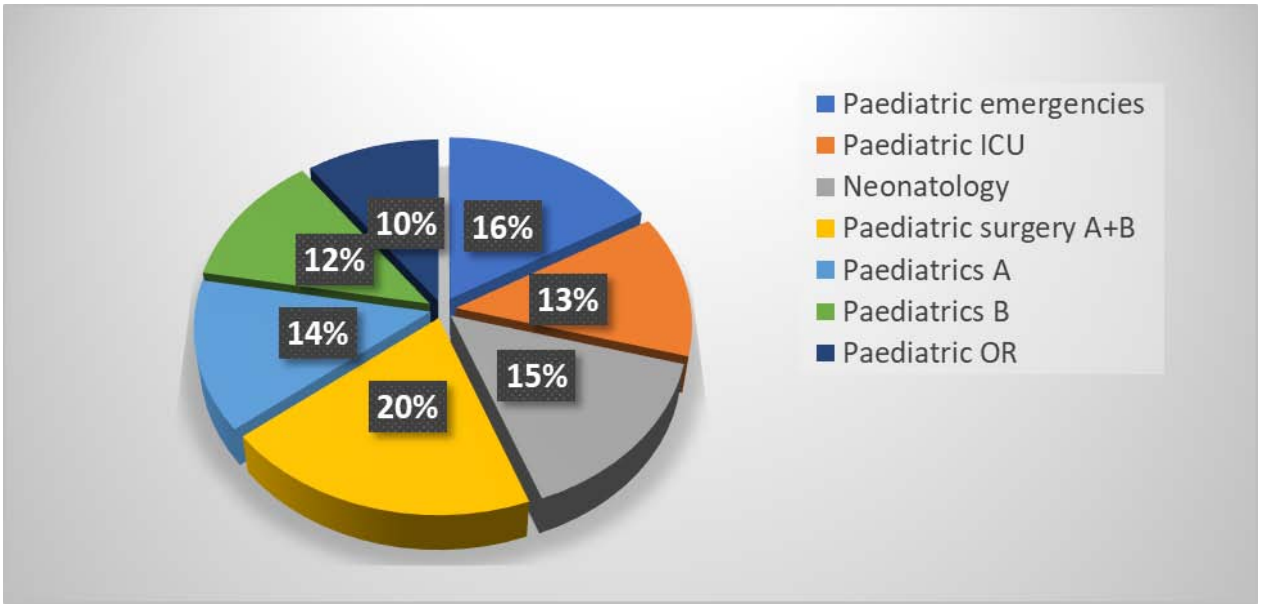


Figure10: Percentage distribution of participants according to their departments

Our participants were drawn from seven departments: Pediatric Surgery A and B, Pediatric Emergencies, Neonatology, Pediatric ICU, Pediatrics A, Pediatrics B and Pediatric OR

III. Nurses and doctors' perception of the importance and impact of nurse-doctor communication on different healthcare aspects:

1. Nurses and doctors' perception of the importance of nurse-doctor communication:

- **Nurse-doctor communication importance in the work place:**

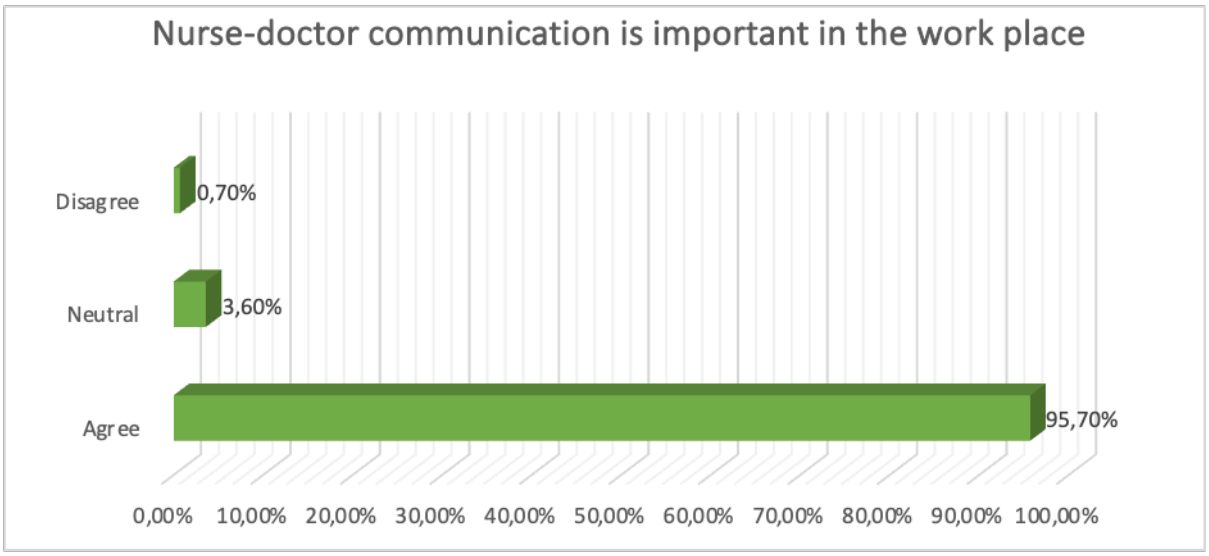


Figure11: Participants' perception of nurse-doctor communication importance.

A large majority of 95.7%, expressed agreement with the proposition that NDC is important.

Table I: Nurses Vs Doctors perception of communication importance in the work place.

	Strongly disagree=1	Disagree =2	Neutral =3	Agree =4	Strongly agree =5	Weighted average score
Nurses	0(0%)	0(0%)	1(1,4%)	0(0%)	69(98,6%)	**4,97**
Doctors	1(1,4%)	0(0%)	4(5,7%)	3(4,3%)	62(88,6%)	**4,78**

- Among nurses, an overwhelming 98.6% strongly agreed that NDC is crucial contributing to a notable weighted average score of 4.97.
- For doctors, the majority, comprising 88.6% strongly agreed with the importance of NDC. The weighted average score for doctors was slightly lower at 4.78.
- While both nurses and doctors generally acknowledged the importance of NDC, nurses exhibited a higher level of agreement.

- **Nurse-doctor miscommunication frequency in the work place:**

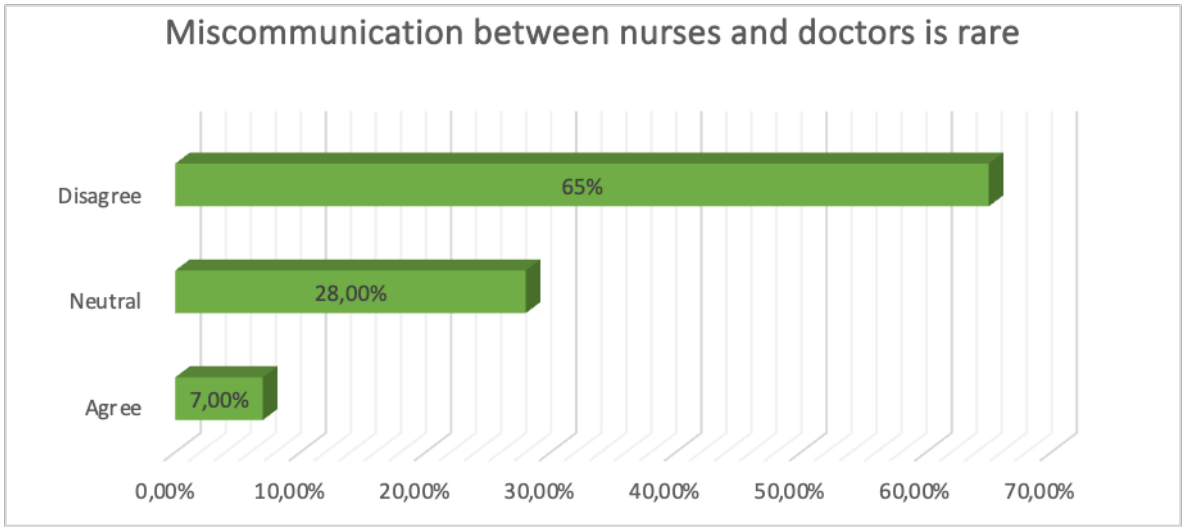


Figure12: Participants' perception of nurse-doctor miscommunication frequency in the work place.

The majority, representing 65% disagreed with the proposition that miscommunication between nurses and doctors is infrequent. In contrast, a substantial 28% of participants held a neutral stance on the issue while a minority, comprising 7% agreed that such miscommunication is rare.

Table II: Nurses Vs Doctors perception of miscommunication frequency in the work place.

	Strongly disagree=1	Disagree =2	Neutral =3	Agree =4	Strongly agree=5	Weighted average score
Nurses	11(15,7%)	30(42,9%)	21(30%)	6(8,6%)	2(2,8%)	**2,4**
Doctors	23(32,8%)	27(38,6%)	18(25,7%)	2(2,9%)	0(0%)	**2**

- Among nurses, 15.7% strongly disagreed and an additional 42.9% (30 out of 70) disagreed that nurse doctor miscommunication is rare, resulting in a weighted average score of 2.4.
- For doctors, 32.8% strongly disagreed and 38.6% disagreed with the notion that nurse doctor miscommunication is rare in the workplace, contributing to a weighted average score of 2.
- While both nurses and doctors generally expressed disagreement about the rarity of miscommunication, doctors thought it happened more than nurses did.

2. Nurses and doctors' perception of the impact of nurse-doctor miscommunication on different healthcare aspects:

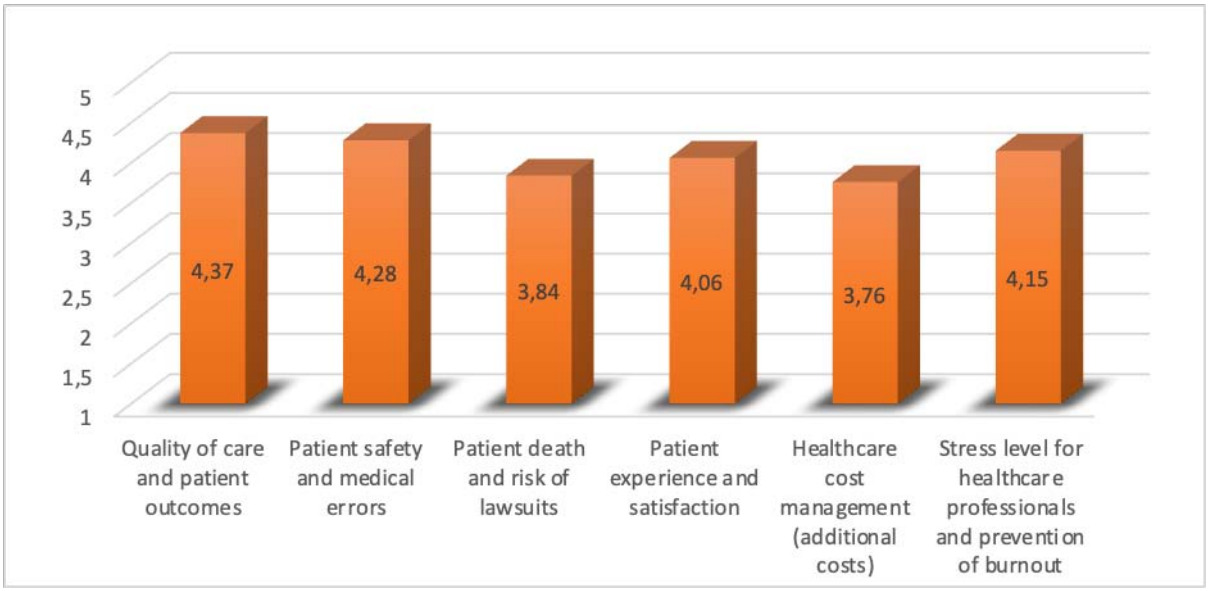


Figure13: Weighted average scores of participants perception of miscommunication impact on different healthcare aspects

Table III: Perceived impact of poor nurse-doctor communication on different healthcare aspects

	Professional category	1=no impact	2	3	4	5= significant impact	Weighted average
Quality of care and patient outcomes	Nurses=70	0(0%)	5(7,15%)	7(10%)	15(21,42%)	43(61,42%)	4,74
	Doctors=70	1(1,42%)	1(1,42%)	11(15,71%)	15(21,42%)	42(60%)	4,74
	Total=140	1**(0,7%)**	6**(4,3%)**	18**(12,9%)**	30**(21,4%)**	85**(60,7%)**	**4,74**
Patient safety and medical errors	Nurses=70	1(1,42%)	2(2,85%)	12(17,14%)	18(25,71%)	37(52,86%)	4,25
	Doctors=70	2(2,85%)	2(2,85%)	7(10%)	20(28,57%)	39(55,71%)	4,31
	Total=140	3**(2,1%)**	4**(2,9%)**	19**(13,6%)**	38**(27,1%)**	76(**54,3%)**	**4,28**
Patient death and risk of lawsuits	Nurses=70	4(5,71%)	11(15,71%)	14(20%)	11(15,71%)	30(42,85%)	3,74
	Doctors=70	2(2,85%)	5(7,15%)	14(20%)	23(32,86%)	26(37,14%)	3,95
	Total=140	6**(4,3%)**	16**(11,4%)**	28**(20%)**	34**(24,3%)**	56**(40%)**	**3,84**
Patient experience and satisfaction	Nurses=70	2(2,85%)	5(7,15%)	16(22,86%)	14(20%)	33(47,14%)	4,01
	Doctors=70	1(1,42%)	2(2,85%)	12(17,14%)	28(40%)	27(38,57%)	4,11
	Total=140	3**(2,1%)**	7**(5%)**	28**(20%)**	42**(30%)**	60**(42,9%)**	**4,06**
Healthcare cost management (additional costs)	Nurses=70	7(10%)	5(7,15%)	18(25,71%)	18(25,71%)	22(31,43%)	3,6
	Doctors=70	1(1,42%)	7(10%)	18(25,71%)	15(21,43%)	29(41,43%)	3,9
	Total=140	8**(5,7%)**	12**(8,6%)**	36**(25,7%)**	33**(23,6%)**	51**(36,4%)**	**3,76**
Stress level for health – care professionals and prevention of burnout.	Nurses=70	2(2,8%)	4(5,71%)	13(18,5%)	15(21,4%)	36(51,4%)	4,12
	Doctors=70	1(1,42%)	5(7,15%)	9(12,86%)	21(30%)	34(48,57%)	4,17
	Total=140	3**(2,1%)**	9**(6,4%)**	22**(15,7%)**	36**(25,7%)**	70**(50%)**	**4,15**

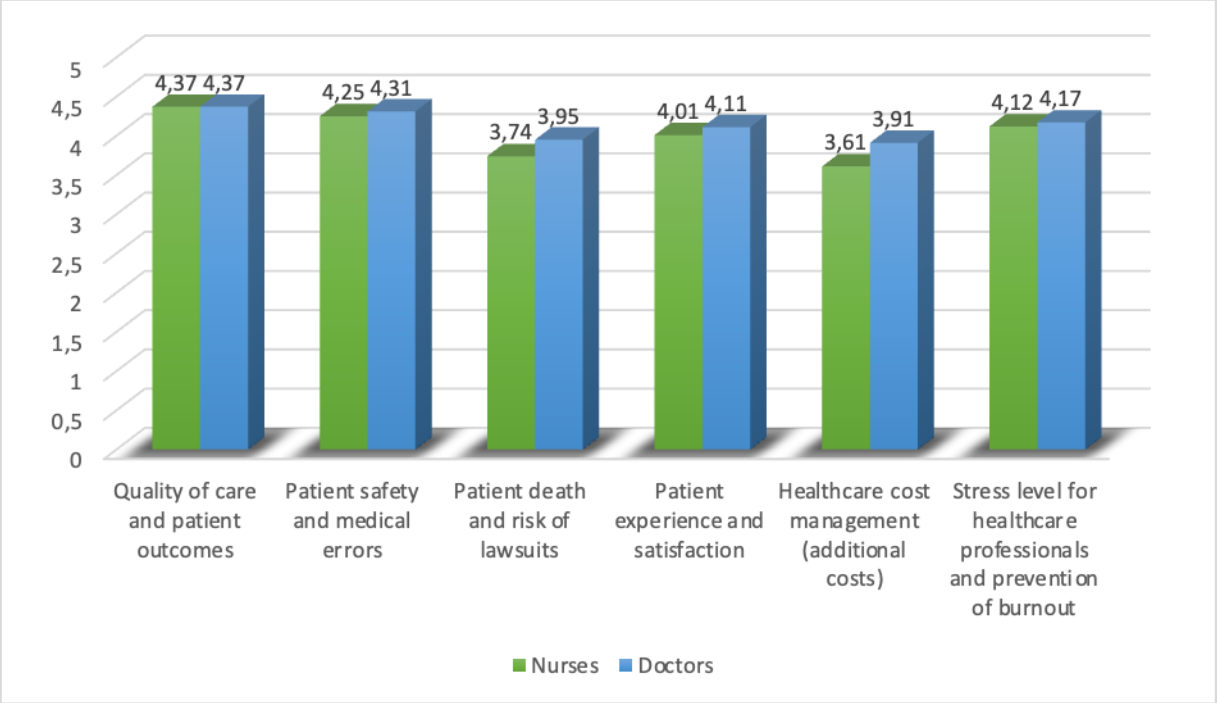


Figure 14: Nurses Vs Doctors perception of poor NDC impact on different healthcare aspects

- **Quality of care and patient outcomes:**
  - A substantial majority of respondents, comprising 60.7%, rated the impact as significant, assigning the highest rating of 5 on the scale of 1 to 5, contributing to a weighted average score of 4.74.
  - The comparison between nurses and doctors regarding this impact revealed a remarkable similarity in their perceptions. Both groups provided weighted average scores of 4,74.

- **Patient safety and medical errors:**
  - More than half of the respondents, comprising 54.3% rated the impact as significant, assigning the highest rating of 5 on the scale of 1 to 5, contributing to a weighted average score of 4.28.

  - As for the comparison between doctors and nurses' perception of this impact, nurses provided a weighted average score of 4.25 and doctors assigned a slightly higher weighted average score of 4.31.

- **Patient death and risk of lawsuits:**
  - 40% rated the impact as significant, assigning the highest rating of 5. Furthermore, a notable proportion, comprising 24.3%, rated the impact as considerable, assigning a rating of 4.
  - When comparing the perceptions of nurses and doctors, nurses provided a weighted average score of 3.74, while doctors assigned a slightly stronger perception of the severity of the impact with a weighted average score of 3.95.

- **Patient experience and satisfaction**
  - A significant proportion of respondents comprising 42.9%, rated the impact as significant. Additionally, 30%, rated the impact as considerable, assigning a rating of 4, providing a weighted average score of 4,06.
  - Concerning nurses and doctors' perceptions regarding this impact, nurses provided a weighted average score of 4.01. Closely, doctors assigned a slightly higher weighted average score of 4.11.
- **Healthcare cost management (additional costs):**
  - A notable proportion of respondents, comprising 36.4%, rated the impact as significant. Moreover, a significant proportion of respondents, 23.6% rated the impact as considerable, resulting in a weighted average score of 3,76.
  - When comparing the perceptions of nurses and doctors, nurses provided a weighted average score of 3.6 while, doctors assigned a bit higher weighted average score of 3.9.

- **Stress level for healthcare professionals and prevention of burnout:**
  - Half of the respondents, comprising 50%, rated the impact as significant, assigning the highest rating of 5. The weighted average score was 4,15 indicating that the majority of participants viewed poor communication as having a profound effect on stress levels and burnout prevention.
  - In comparing the perspectives of nurses and doctors regarding this impact, a general alignment in the perceptions was underscored. Nurses indicated a weighted average score of 4.12 and doctors provided a weighted average score of 4.17.

IV. Level of nurse-doctor communication:

Table IV: Level of measuring items for communication among nurses and doctors of the Pediatric Departments of Mother and Child hospital

Items	Never N (%)	Rarely N (%)	Sometimes N (%)	Usually N (%)	Always N (%)
I ask frequent clarification in understanding what nurse/doctor says	5(3,6%)	21(15%)	60(42,9%)	41(29,3%)	13(9,3%)
In the event of a change of a treatment plan for the patient, nurses and doctors have a mutual understanding of it.	3(2,1%)	16(11,4%)	52(37.1%)	54(38,6%)	15(10,7%)
I discuss mechanisms to maintain patient safety with nurses /doctors.	4(2,9%)	23(16,4%)	53(37,9%)	38(22,1%)	22(15,7%)
Patient discharge confirmed by the signature of both nurses and doctors.	42(30%)	24(17,1%)	25(17,9%)	28(20%)	21(15%)
I have the same understanding of patient's care with nurses/doctors.	4(2,9%)	31(22,1%)	54(38,6%)	48(34,3%)	3(2,1%)
I take int account nurses/doctors schedules when making plans to treat a patient together.	15(10,7%)	35(25%)	38(27,1%)	37(26,4%)	15(10,7%)
We openly exchange information about matters related to work in patient care.	8(5,7%)	39(27,9%)	45(32,1%)	33(23,6%)	15(10,7%)
We listen to each other during communication in patient care.	3(2,1%)	22(15,7%)	59(42,1%)	37(26,4%)	19(13,6%)
I receive correct information from nurses/doctors on patient care.	1(0,7%)	12(8,6%)	55(39,3%)	23(40%)	16(11,4%)
I consider nurse/doctor views when making decisions about patient care.	4(2,9%)	23(16,4%)	41(29,3%)	45(32,1%)	27(19,3%)
I feel angry after nurse-doctor interaction	32(22,9%)	57(40,7%)	35(25%)	14(10%)	2(1,4%)
I feel frustrated after nurse-doctor interaction	40(28,6%)	44(31,4%)	39(27,9%)	15(10,7%)	2(1,4%)
I feel understood after nurse-doctor interaction	3(2,1%)	19(13,6%)	55(39,3%)	52(37.1%)	11(7.9%)
I feel respected after nurse-doctor interaction	1(0,7%)	18(12,9%)	54(38,6%)	50(35,7%)	17(12,1%)
I feel pleased after nurse-doctor interaction	2(1,4%)	33(23,6%)	57(40,7%)	38(22,1%)	10(7,1%)
I feel satisfied after nurse-doctor interaction	3(2,1%)	24(17,1%)	66(47,1%)	43(30.7%)	4(2,9%)
We have equal understanding during interaction for the patient care.	4(2,9%)	27(19,3%)	63(45%)	41(29,3%)	5(3,6%)
Talking between me and doctors/nurses is joyful	2(1,4%)	47(33,6%)	42(30%)	34(24,3%)	15(10,7%)
Doctors/nurses consider nurses/doctors information about the patient as relevant	1(0,7%)	18(12,9%)	60(42,9%)	47(33,6%)	14(10%)

Regarding nurse-physician communication measuring items, participants who usually and always asked for clarification were about 38,6% (29,3%+9,3%). On the other hand, 86,4% of respondents (37,1% + 38.6% + 10.7%) reported that they had a mutual understanding in the events of a change in treatment plan and 75,7% (37.9% + 22,1% + 15,7%) were adhered to the discussion mechanism to maintain the patient safety at least sometimes.

Patient discharge was never or rarely confirmed by the signature of both nurses and doctors in 47,1% (30% +17,1%) of the time and at least sometimes in 52,9%. In addition, 36,4% (34,3% + 2,1%) of the participants usually or always did feel they had the same understanding on patient's care and 37,1% (26,4% +10,7%) take in to account each other's schedule when making plans to treat a patient together.

Moreover, 34,3% (23,6% + 10,7%), around one third, 32% (8.8% + 23.2%) and more than half 51,4% (32,1%+19,3%) of participants always or usually felt they could openly exchange information about matters related to work, did listen to each other during communication and considered each other views when making decisions respectively. Whereas, 90.7% (39,3% + 40%+11,4%) reported that they received correct information albeit sometimes while only 32,9% (29,3%+3,6%) and 43,6% (33,6% + 10%) of respondents always or usually felt they had equal understanding for the patient care and considered each other information about the patient as relevant respectively.

In addition, participants always or usually did not feel angry after nurse physician interaction 63,6% of the time (22,9% + 40,7%) thus, the remaining 36,4% felt angry and about 40% (27,9% + 10,7% + 1,4%) felt frustrated at least sometime after such interaction. On the other hand, 45% (37,1% + 7,9%), 47.8% (35,7% + 12,1%), 29,2% (22,1% + 7,1%) and 33,6% (30,7% + 2,9%) of them usually or always felt understood, respected, pleased and satisfied respectively after nurse physician interaction. Besides only 35% (24,3% + 10,7%) of them usually or always felt joyful after this interaction.

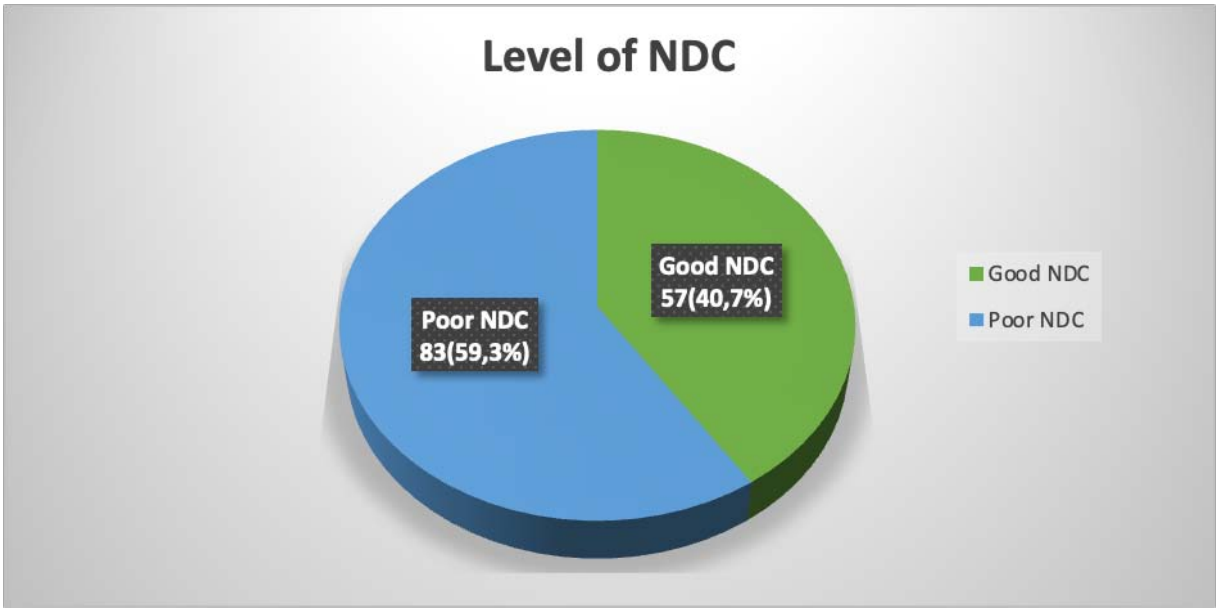


Figure 15: Magnitude of level of NDC among nurses and physicians of the pediatric department of Mother and Child hospital

The results indicated that the majority of respondents in the study, specifically **59.3%**, were categorized as having a **poor** level of nurse-doctor communication. This suggests that these respondents scored below the mean score of 55.19 on the items related to nurse-doctor communication in the questionnaire. Conversely, **40.7%** of the sample, demonstrated a **good** level of nurse-doctor communication, scoring equal to or above the mean score.

V. Barriers to effective nurse –doctor communication:

1. Organizational related factors:

Table V: Agreement rates for organizational related factors affecting the level of NDC

Organizational related factors:	Strongly disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly agree N (%)
Disorganized hospital management system	3(2,1%)	3(2,1%)	37(26,4%)	50(35,7%)	47(33,6%)
Lack of shared vision between nurses and doctors	1(0,7%)	14(10%)	31(22,1%)	59(42,1%)	35(25%)
Lack of clarity in roles and responsibilities by nurses /doctors.	4(2,9%)	11(7,9%)	23(16,4%)	47(33,6%)	55(39,3%)
Hierarchy and conflicting orders of doctors	7(5%)	21(15%)	40(28,6%)	42(30%)	30(21,4%)
Differential treatment of professionals	9(6,4%)	16(11,4%)	45(32,1%)	44(31,4%)	26(18,6%)
Absence of communication forum between nurses and doctors	3(2,1%)	8(5,7%)	35(25%)	42(30%)	52(37,1%)
Lack of medical supplies and equipment	6(4,3%)	9(6,4%)	28(20%)	41(29,3%)	56(40%)
Shortage of staffs	6(4,3%)	10(7,1%)	22(15,7%)	45(32,1%)	57(40,7%)

Figure 16: Weighted average scores for doctors Vs nurses' perceptions of organizational barriers to nurse-doctor communication

- **Disorganized hospital management system:**

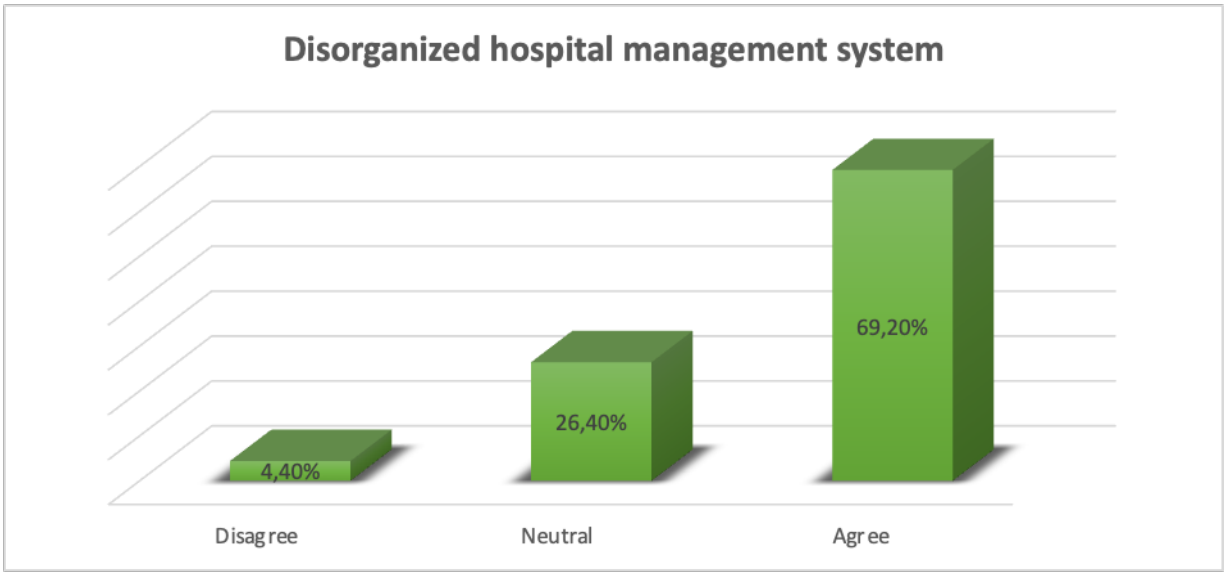


Figure 17: Perceived impact of disorganized hospital management system on NDC

The results revealed that a significant majority of respondents, comprising 69.2%, agreed that a disorganized hospital management system represents a notable barrier to effective NDC.

The comparison between nurses and doctors' perceptions of this barrier, revealed relatively high weighted average scores for both groups (3.98 for nurses and 3.94 for doctors) on a scale of 1 to 5. The slight difference in the weighted average scores between nurses and doctors suggests that both professional groups perceived this barrier similarly.

- **Lack of shared vision between nurses and doctors:**

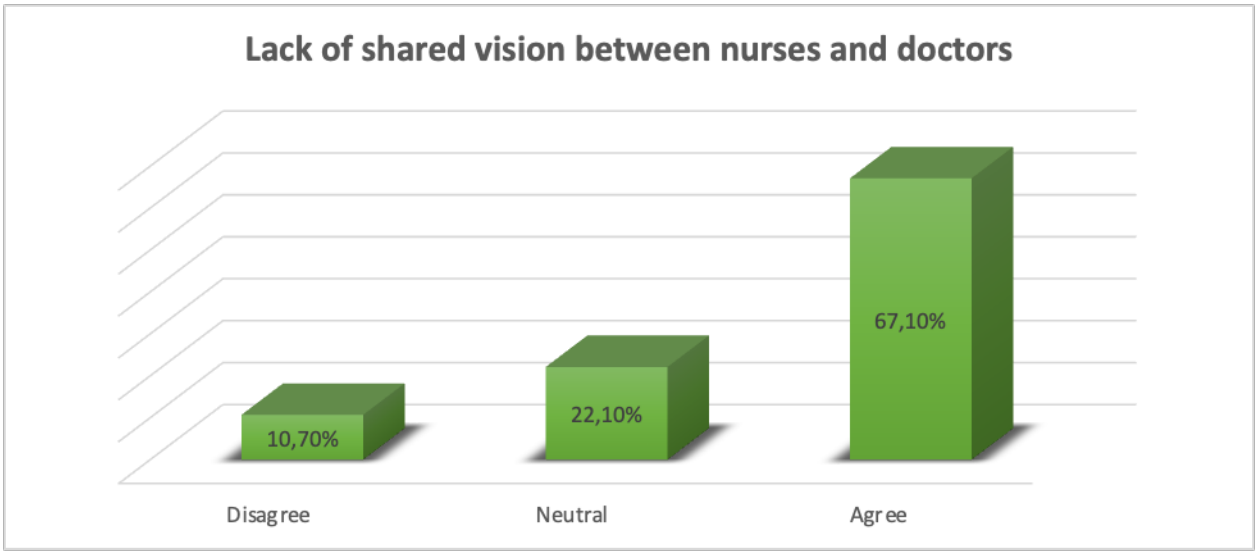


Figure 18: Perceived impact of Lack of shared vision between nurses and doctors on NDC

The findings indicated that a major part of respondents, comprising 67.1%, agreed that a lack of shared vision between nurses and doctors presents a significant barrier to effective communication.

Both nurses and doctors rated this factor as a significant barrier to effective communication, with scores close to each other (3.80 for nurses and 3.81 for doctors), suggesting that both professional groups perceived this barrier similarly.

- **Lack of clarity in roles and responsibilities by nurses /doctors:**

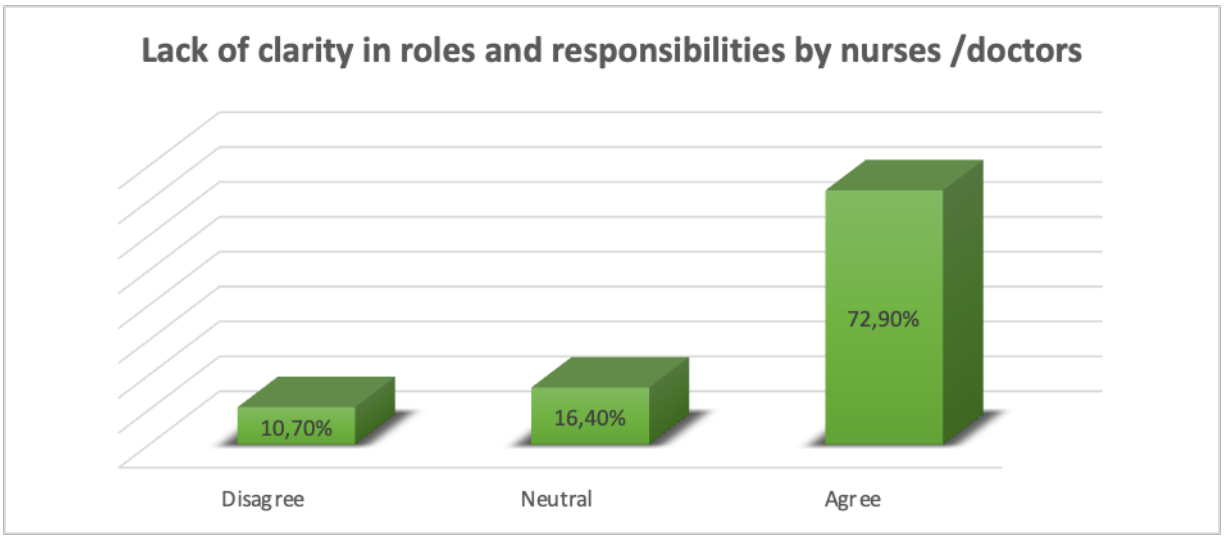


Figure 19: Perceived impact of Lack of clarity in roles and responsibilities on NDC

The results showed that a substantial majority of participants of 72.9% expressed agreements, indicating that the lack of clarity in roles and responsibilities among nurses and doctors hinders communication.

Nurses rated this factor higher (4.08) compared to doctors (3.88), indicating that nurses perceived this barrier as more significant in hindering effective communication.

- **Hierarchy and conflicting orders of doctors:**

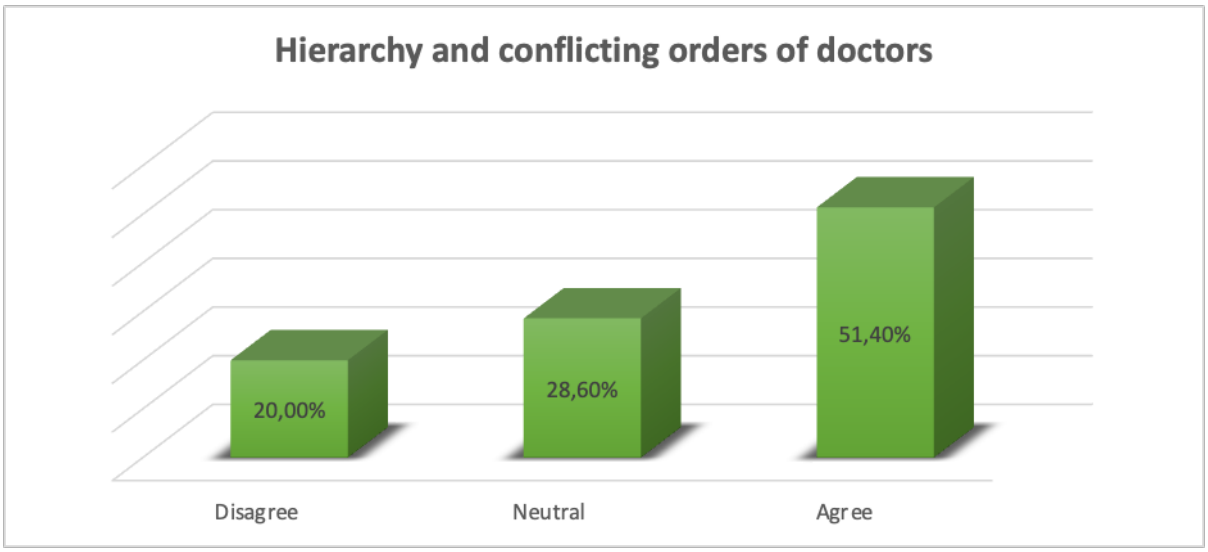


Figure 20: Perceived impact of hierarchy and conflicting orders of doctors on NDC

The findings revealed that more than half of the participants (51.4% or 72 out of 140) agreed that hierarchy and conflicting orders of doctors impacts negatively nurse-doctor communication.

In comparing nurses and doctors' perceptions, the weighted average score for nurses was 3.41, slightly lower than that of doctors at 3.54.

- **Differential treatment of professionals:**

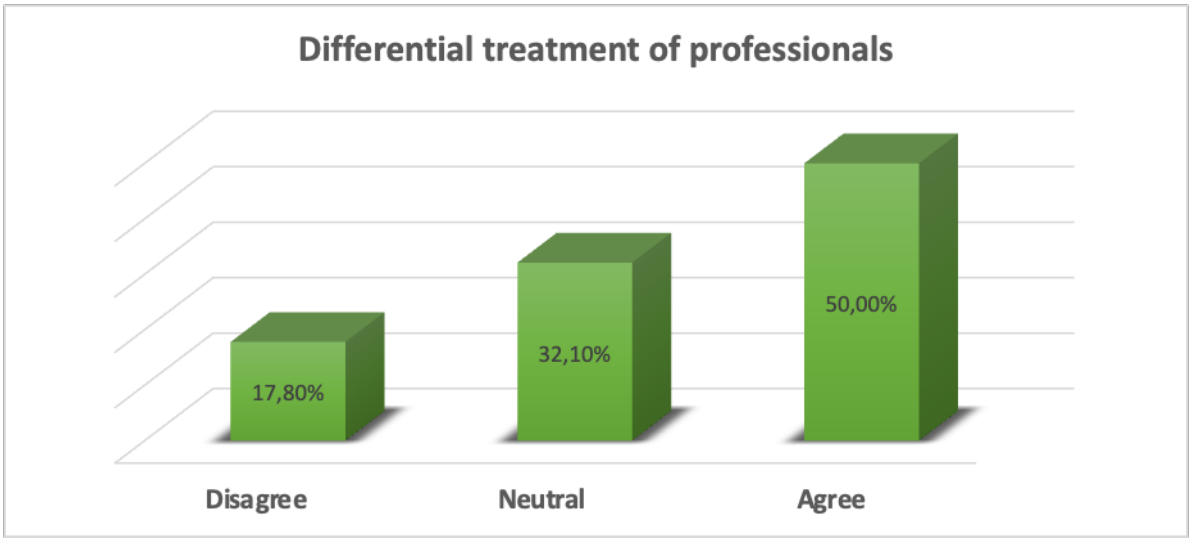


Figure 21: Perceived impact differential treatment of professionals on NDC

The findings indicated that a significant portion, 50% of respondents expressed agreement regarding the issue of differential treatment of professionals as a barrier to effective NDC.

In examining nurses' and doctors' perceptions of this potential barrier, nurses rated it slightly higher with a weighted average score of 3.52 compared to doctors' score of 3.35.

- **Absence of communication forum between nurses and doctors:**

The data indicated that 67.1% of respondents acknowledged the lack of a dedicated communication forum between nurses and doctors as a hindrance to effective NDC.

In evaluating nurses' and doctors' perceptions of this potential barrier, nurses assigned a notably higher weighted average score of 4.28 compared to doctors' score of 3.60.

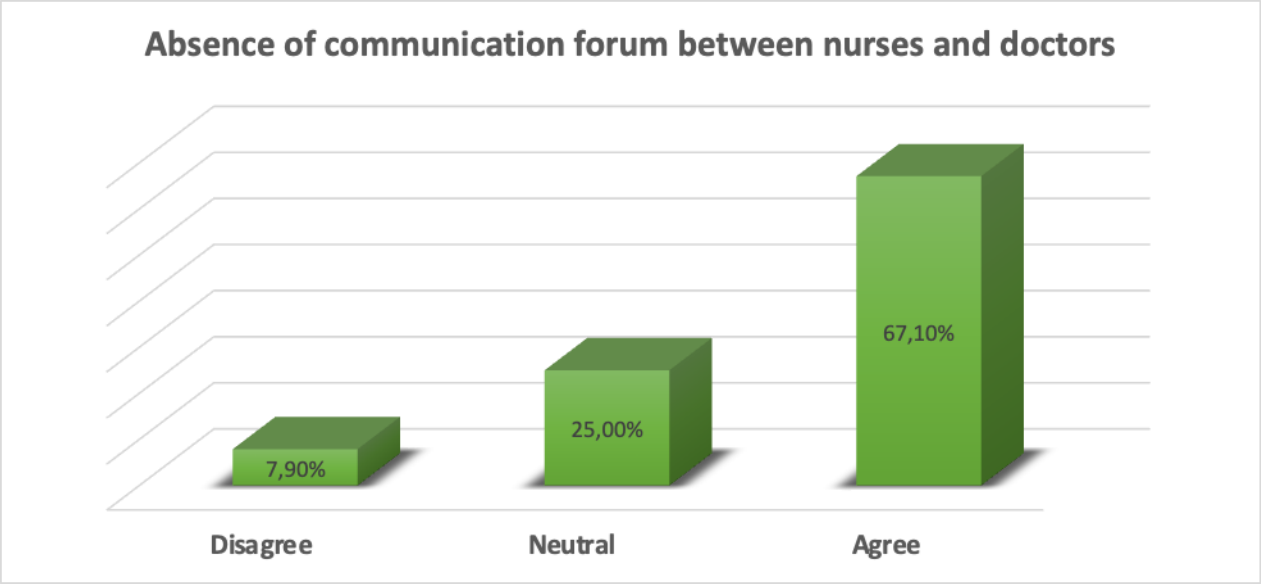


Figure 22: Perceived impact of the absence of communication forum on NDC

- **Lack of medical supplies and equipment:**

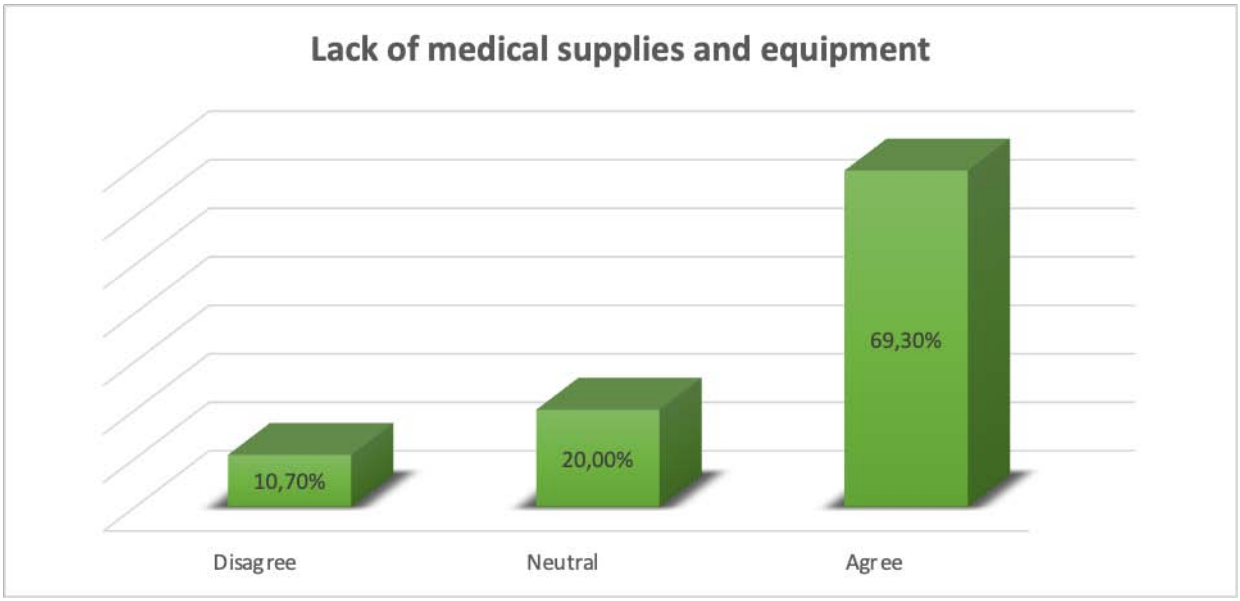


Figure 23: Perceived impact of Lack of medical supplies and equipment on NDC

The findings revealed that the majority of respondents, comprising, 69.3% expressed agreements that a lack of sufficient supplies and equipment hinders communication between nurses and doctors.

In examining nurses' and doctors' perceptions of this barrier, nurses rated it lower with a weighted average score of 3.80, whereas doctors assigned a higher score of 4.08.

- **Shortage of staffs:**

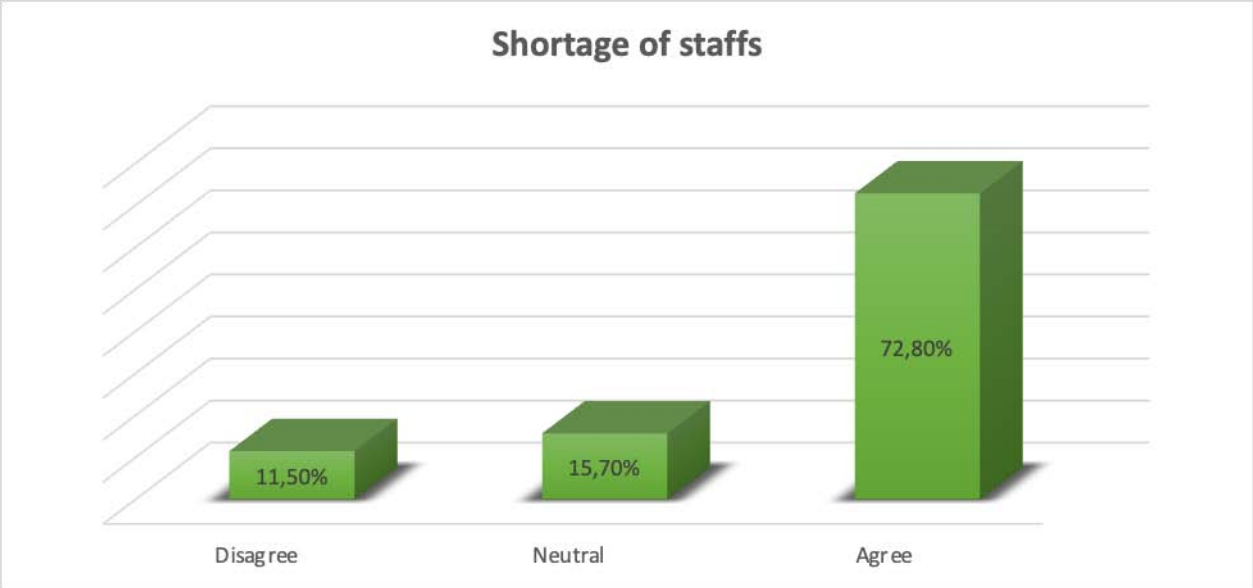


Figure 24: Perceived impact of the shortage of staffs on NDC

The results indicated that the majority specifically, 72.8% respondents agreed that staffing shortages poses a significant challenge to communication between nurses and doctors.

In comparing nurses' and doctors' perceptions of the potential barrier to effective NDC regarding the "Shortage of staff," nurses rated it slightly higher with a weighted average score of 4 compared to doctors' score of 3.95.

Figure 25: Organizational factors impacting nurse-doctor communication: Distribution of Low and High Scores among respondents

Out of the 140 individuals surveyed, 53.6% of the total respondents had a high score for organizational related factors scoring equal to or above the mean score of 16.15.

2. Work attitude-related personal individuals' factors:

Table VI: Agreement rates for work attitude-related personal individuals' factors affecting the level of NDC

Work attitude-related personal individuals' factors:	Strongly disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly agree N (%)
Noncompliance o nurse/doctor with advice	11(7,9%)	13(9,3%)	36(25,7%)	41(29,2%)	39(27,9%)
Abusive behavior: verbal, physical, sexual.	21(15%)	20(14,3%)	27(19,3%)	33(23,5%)	39(27,9%)
Negligence of duty by nurse/doctor.	9(6,4%)	13(9,3%)	40(28,6%)	40(28,6%)	38(27,1%)
Poor attitude towards one's work by nurse/doctor	11(7,9%)	10(7,1%)	35(25%)	45(32,1%)	39(27,9%)
Uncooperativeness at work by nurse/ doctor.	6(4,3%)	12(8,6%)	32(22,9%)	50(35,6%)	40(28,6%)

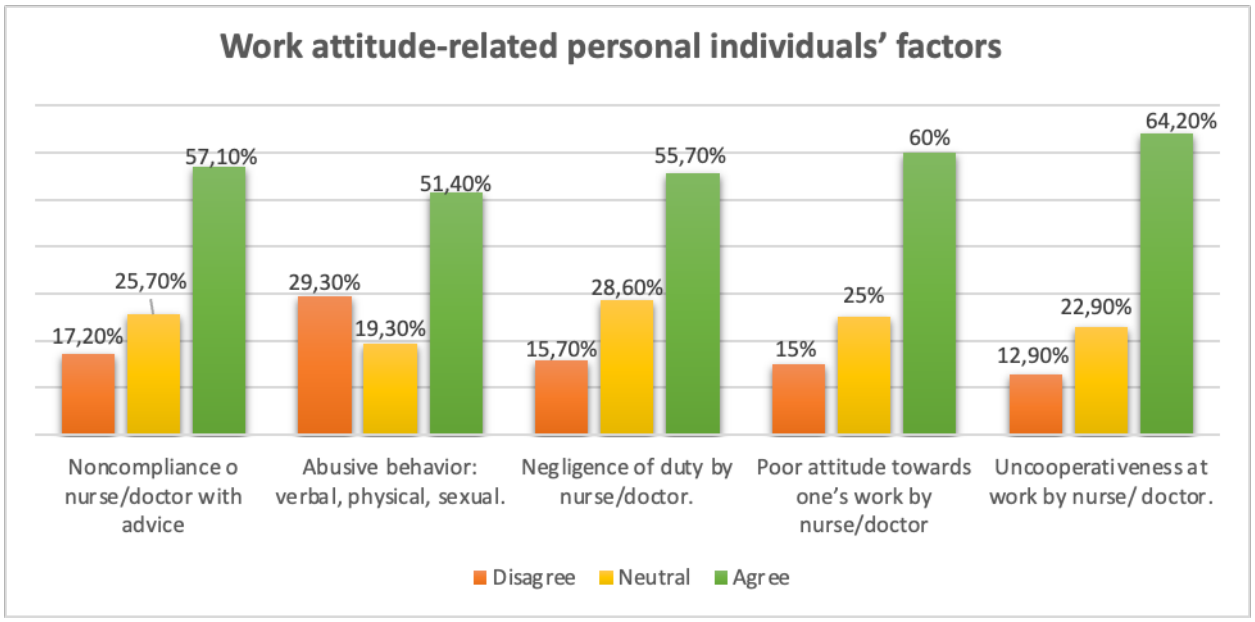


Figure 26: Participants perceptions regarding work attitude-related personal individuals' factors affecting the level of NDC.

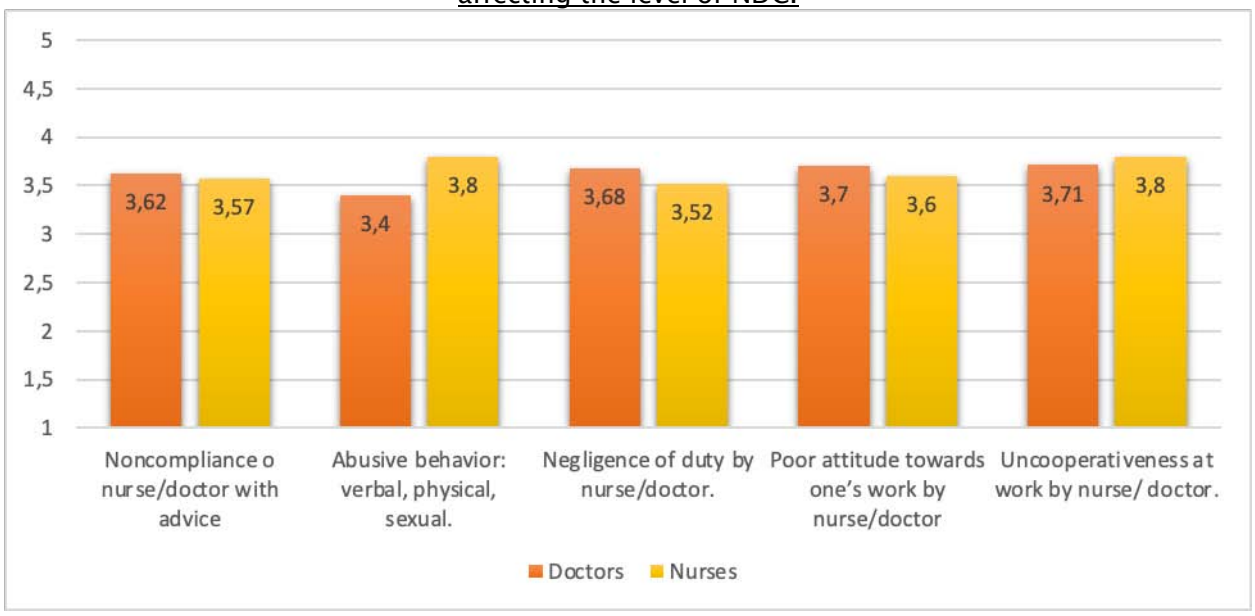


Figure 27: Weighted average scores for doctors Vs nurses' perceptions of work attitude-related barriers to NDC

- **Noncompliance o nurse/doctor with advice:**

The findings indicated that more than half of participants (51.4%) agreed that noncompliance with advice poses a significant challenge to communication between healthcare professionals.

In evaluating nurses' and doctors' perceptions of this factor, nurses rated it slightly lower with a weighted average score of 3.57 compared to doctors' score of 3.62.

- **Abusive behavior: verbal, physical, sexual:**

The results indicated that a large part, comprising 51.4% agreed that abusive behavior poses a substantial challenge to communication between healthcare professionals.

In comparing nurses' and doctors' perceptions regarding "Abusive behavior: verbal, physical, sexual," nurses rated it higher with a weighted average score of 3.8 compared to doctors' score of 3.4.

- **Negligence of duty by nurse/doctor:**

The findings showed that 55.7% of respondents expressed agreement regarding negligence of duty as a potential barrier to effective nurse-doctor communication.

In assessing nurses' and doctors' perceptions of this factor, nurses rated it slightly lower with a weighted average score of 3.52 compared to doctors' score of 3.68.

- **Poor attitude towards one's work by nurse/doctor:**

The data revealed that a large part comprising 60% of participants agreed that a negative attitude towards one's work poses a substantial obstacle to communication between nurses and doctors.

In examining nurses' and doctors' perceptions of this potential barrier, nurses rated it slightly lower with a weighted average score of 3.6 compared to doctors' score of 3.7.

- **Uncooperativeness at work by nurse/ doctor:**

The results indicated that a significant part of participants comprising 64.2% expressed agreements regarding uncooperativeness at work as a potential barrier to effective nurse-doctor communication.

In assessing nurses' and doctors' perceptions of uncooperativeness at work as potential barrier to effective NDC, nurses rated it slightly higher with a weighted average of 3.8 compared to doctors' average of 3.71.

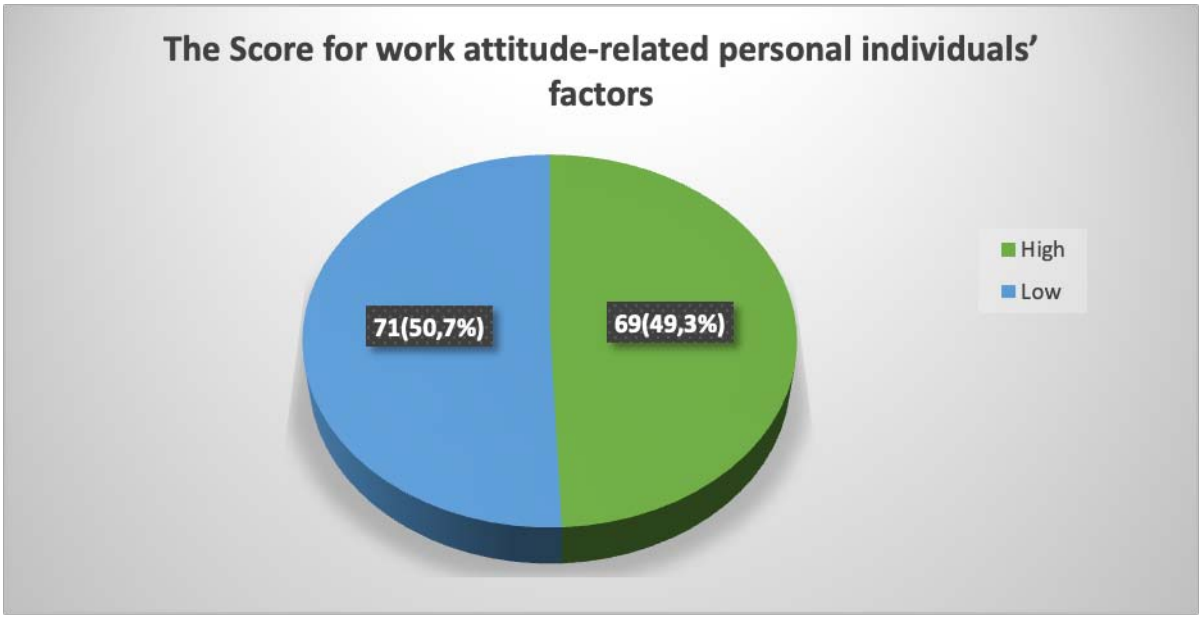


Figure 28: Work attitude-related personal individuals' factors impacting nurse-doctor communication: Distribution of Low and High Scores among respondents

Out of the 140 individuals surveyed 49.3% of the total respondents, scored above or equal to the mean score of 16.15 for work attitude-related personal individual factors, accordingly they were categorized as having a high score.

3. Personal behavior-related individual factors:

Table VII: Agreement rates for personal behavior-related individual factors affecting the level of NDC

Personal behavior-related individual factors	Strongly disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly agree N (%)
Disruptive behaviors	6(4,3%)	14(10%)	33(23,5%)	39(27,9%)	48(34,3%)
Unfavorable attitude towards other professions by nurses/doctors.	6(4,3%)	21(15%)	39(27,9%)	38(27,1%)	36(25,7%)
Inappropriate communication skills	7 (5%)	15(10,7%)	28(20%)	51(36,4%)	39(27,9%)

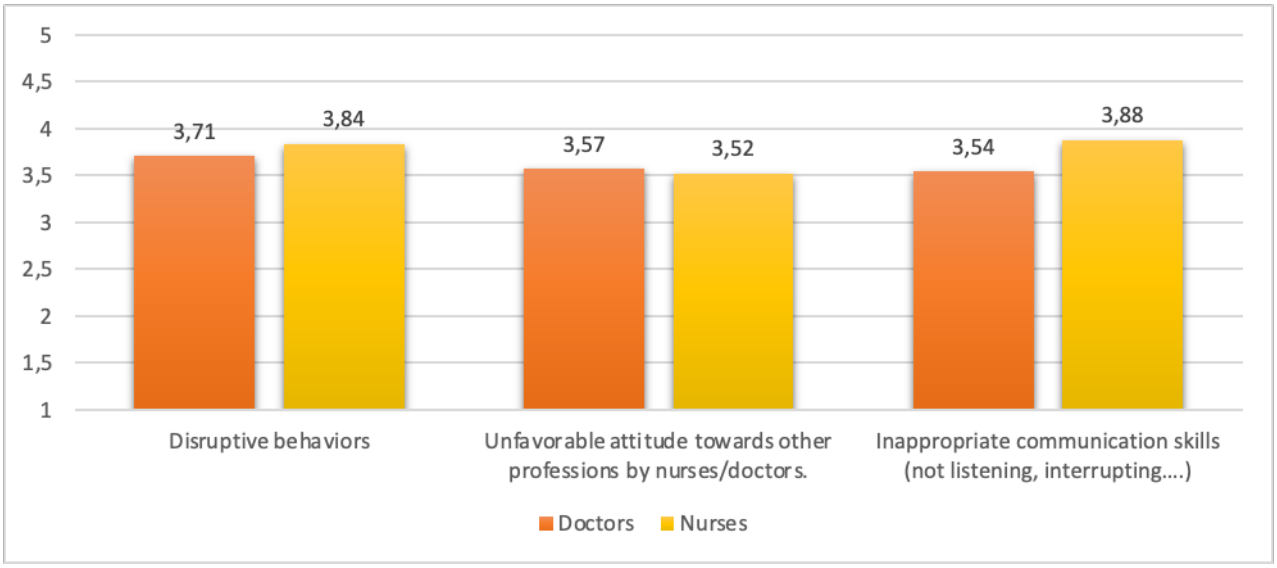


Figure 29: Weighted averages for doctors Vs nurses' perceptions of personal behaviors related barriers to NDC

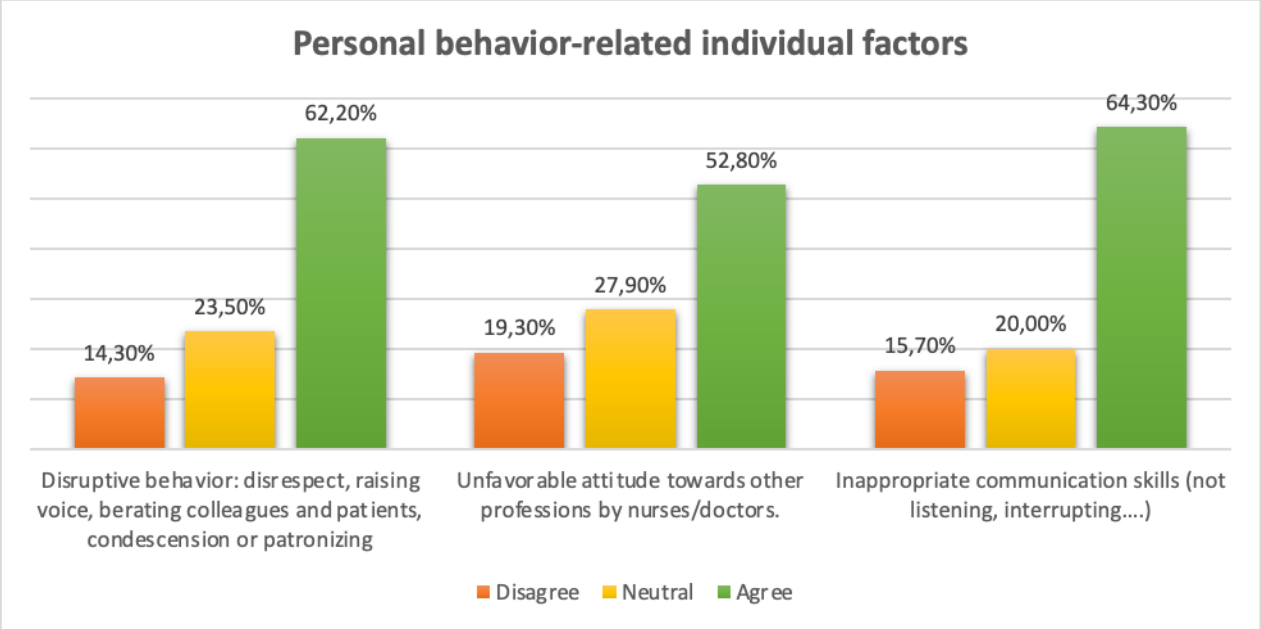


Figure 30: Participants perceptions regarding personal behavior-related individual factors affecting the level of nurse-doctor communication.

- **Disruptive behaviors:**

The results revealed that a significant part including 62.2% of respondents agreed that disruptive behaviors such as disrespect, raising voice, berating colleagues and patients, and condescension or patronizing significantly impede communication between nurses and doctors.

In analyzing nurses' and doctors' perceptions of disruptive behaviors as a potential hindrance to effective NDC, nurses rated it slightly higher with a weighted average of 3.84 compared to doctors' average of 3.71.

- **Unfavorable attitude towards other professions by nurses/doctors.**

The findings suggested that more than half of respondents including 52.8% agreed that unfavorable attitude towards other professions is a potential barrier to effective NDC.

In examining nurses' and doctors' perceptions of this potential barrier, nurses rated it with a weighted average of 3.52 while doctors' average was 3.57. The minor difference in scores indicates a shared awareness of the issue.

- **Inappropriate communication skills:**

The results indicated that a major part of respondents comprising 64.3% agreed that such issues hinder communication between nurses and doctors.

In evaluating nurses' and doctors' perceptions of inappropriate communication skills as a barrier to effective NDC, nurses rated it higher with a weighted average of 3.88 compared to doctors' average of 3.54.

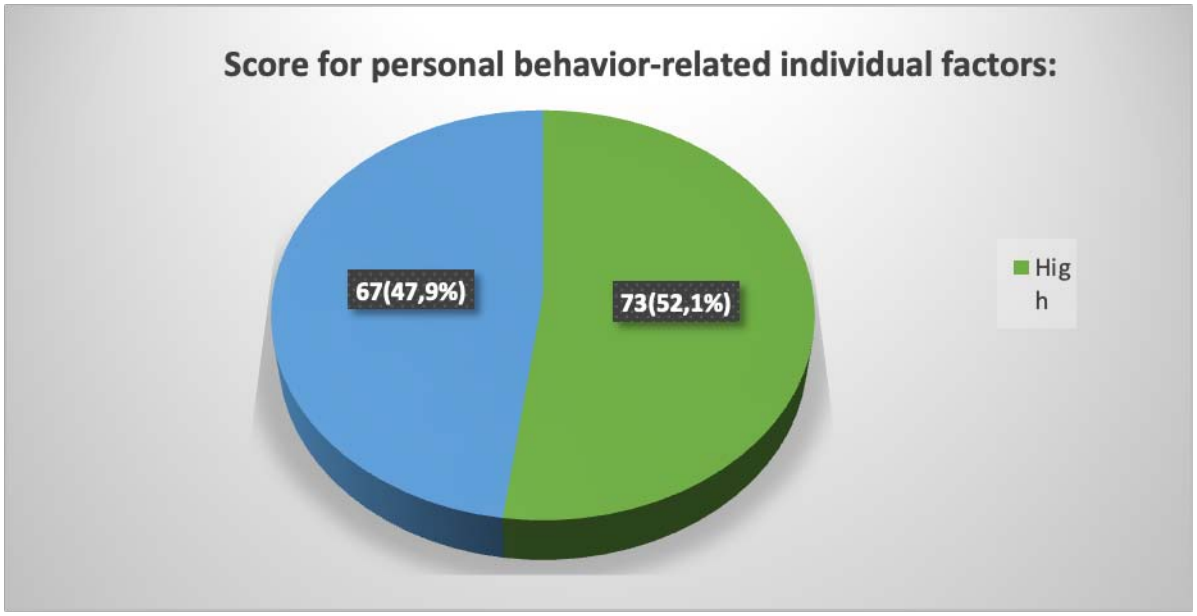


Figure 31: Personal behavior-related individual factors impacting NDC: Distribution of Low and High Scores among respondents.

More than half of the participants, constituting 52.1% of the total, had a high score for personal behavior-related individual factors. This suggests that they scored above or equal to the mean score of 12.61 for these factors.

4. Other factors:

Table VIII: Other factors affecting the level of NDC

Other individual related factors	Strongly disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly agree N (%)
Handwriting of doctors	11(7,9%)	17(12,1%)	52(37,1%)	34(24,3%)	26(18,6%)
Power of authority: feeling of inferiority-superiority complex syndrome	8(5,7%)	18(12,9%)	32(22,9%)	33(23,6%)	49(35%)
Lack of knowledge or competency of new nurses/doctors	7(5%)	26(18,6%)	44(31,4%)	36(25,7%)	27(19,3%)

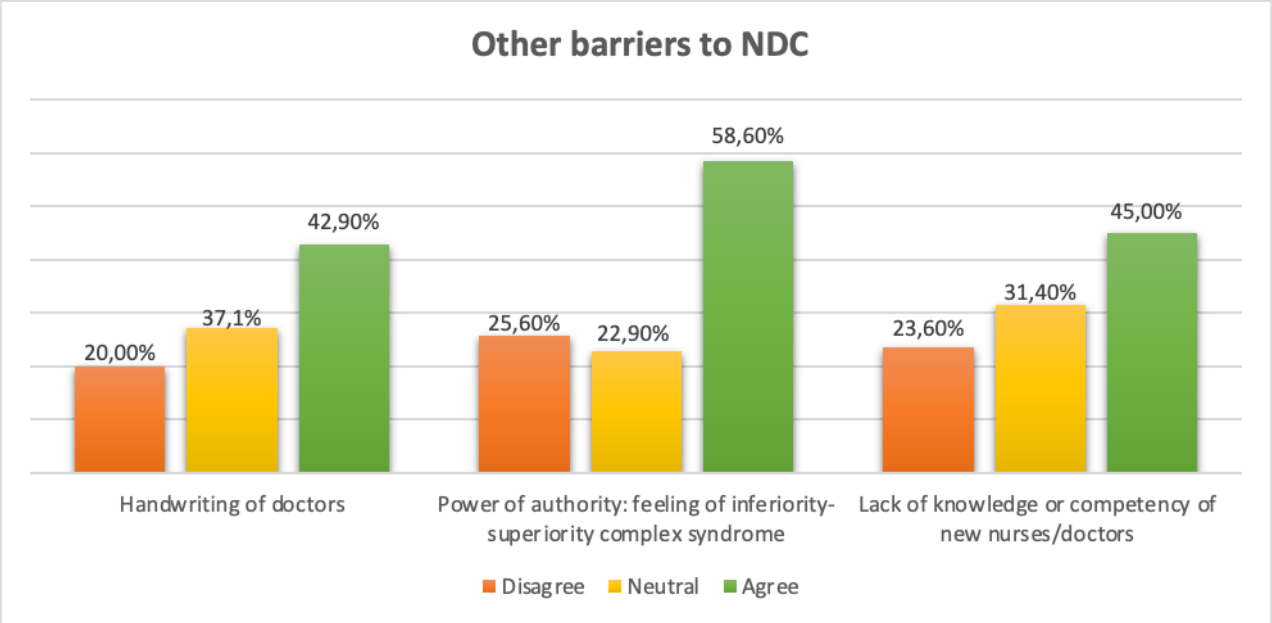
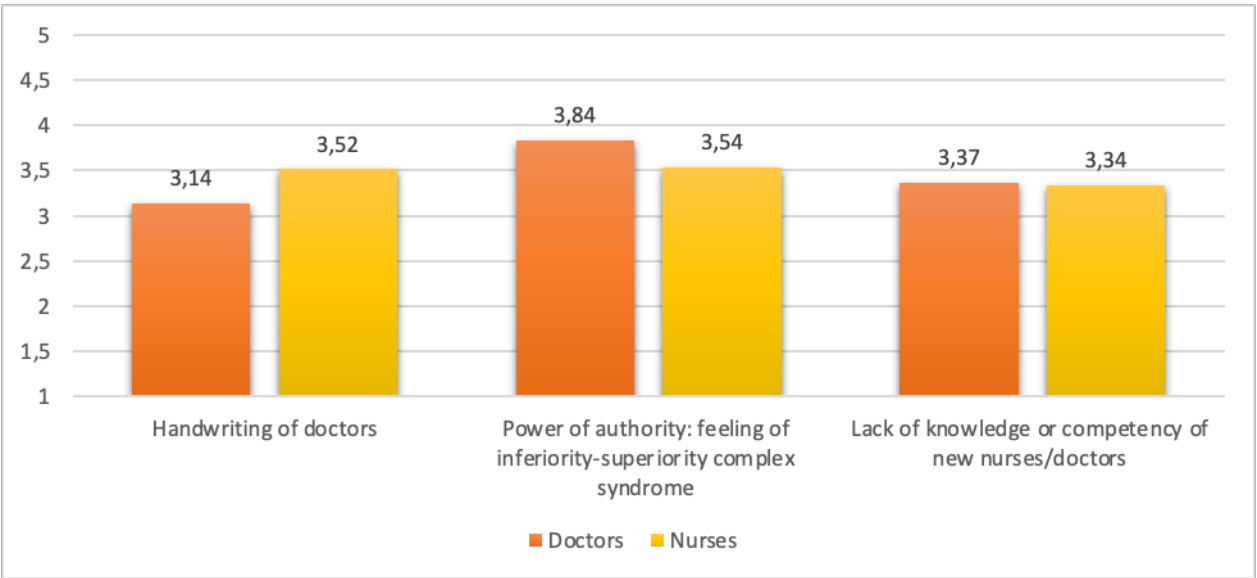


Figure 32: Participants perceptions regarding other factors affecting the level of NDC.



- **Power of authority: feeling of inferiority-superiority complex syndrome:**

The findings revealed that 58.6% of respondents agreed that the power of authority, often characterized by feelings of inferiority-superiority complex syndrome, poses a significant barrier to effective communication between nurses and doctors.

In exploring nurses' and doctors' perceptions of this barrier nurses rated it lower with a weighted average of 3.54, while doctors rated it higher with a weighted average of 3.84.

- **Handwriting of doctors:**

The results indicated 42.9% of respondents agreed that illegible handwriting by doctors poses a significant challenge to communication.

In evaluating nurses' and doctors' perceptions, nurses rated it higher with a weighted average of 3.52 compared to doctors' average of 3.14. This difference indicates that nurses perceived this issue as a more significant hindrance to communication than doctors did.

- **Lack of knowledge or competency of new nurses/doctors**

The findings suggested that 45% of respondents agreed that the lack of knowledge or competency of new nurses/doctors presents a significant barrier to communication.

In comparing nurses' and doctors' perceptions of this barrier, both groups indicated relatively similar perceptions, with nurses reporting a weighted average of 3.37 and doctors closely behind with 3.34.

Figure 33: Weighted averages for doctors Vs nurses' perceptions of other barriers to NDC

VI. Improvement strategies:

Table IX: Participants perceptions regarding improvement strategies efficiency

	Least effective=1	2	3	4	Most effective=5	Weighted average score
Interprofessional education between nurses and doctors	2(1,4%)	2(1,4%)	17(12,1%)	50(35,7%)	69(49,3%)	**4,30**
Required nurse-doctor communication classes for students entering the medical field at an under graduated level	0(0%)	1(0,7%)	17(12,1%)	63(45%)	59(42%)	**4,28**
Using simulation for training and uniting the two professions	0(0%)	1(0,7%)	13(9,3%)	63(45%)	63(45%)	**4,34**
Multidisciplinary rounds communication including nurses	2(1,4%)	3(2,1%)	15(10,7%)	43(30,7%)	77(55%)	**4,35**
Workshops and seminars	3(2,1%)	2(1,4%)	24(17,1%)	59(42,1%)	52(37,1%)	**4,10**
Improved and structured communication tools	2(1,4%)	3(2,1%)	16(11,4%)	62(44,3%)	57(40,7%)	**4,20**
Teamwork training programs	2(1,4%)	2(1,4%)	17(12,1%)	50(35,7%)	69(49,3%)	**4,38**
Having therapy sessions open to nurses and doctors to relay concerns in confidence	3(2,1%)	6(4,3%)	18(12,9%)	55(39,3%)	58(41,4%)	**4,13**

1. Interprofessional education between nurses and doctors (IPE):

Nearly half of the respondents (49.3%) rated the impact as a 5, signifying strong support for this theoretical solution. A substantial portion of respondents (35.7%) rated the impact as a 4, contributing to weighted average score of 4.30. These results suggest that interprofessional education is perceived as highly effective.

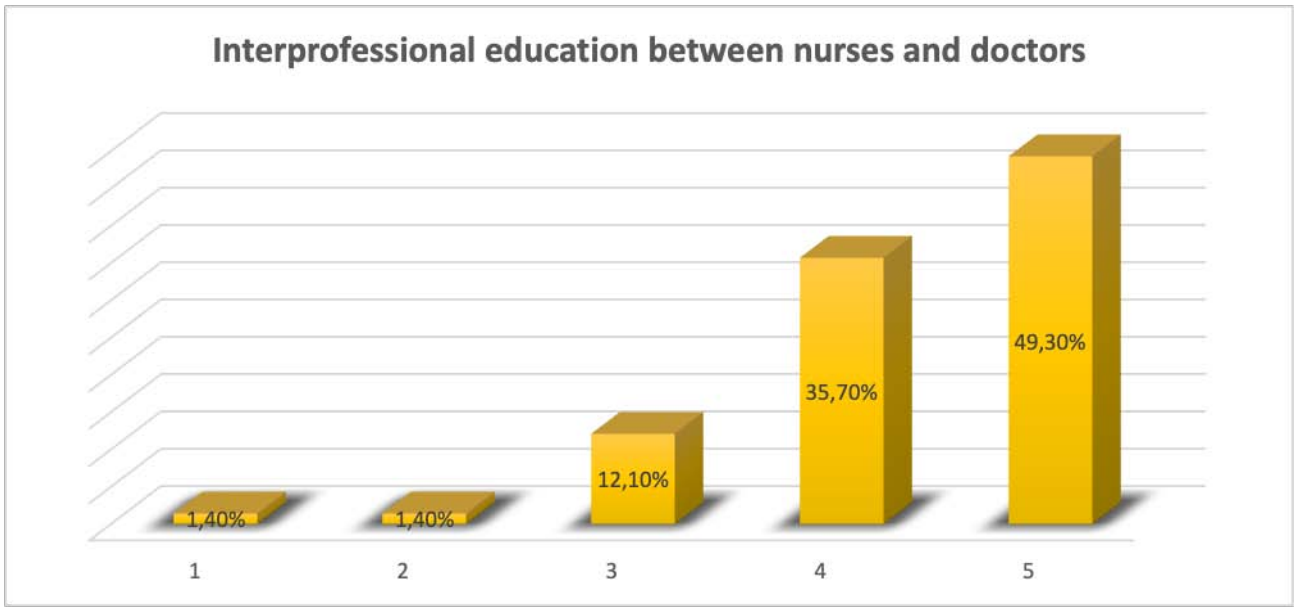


Figure 34: Participant ratings of interprofessional education for improving nurse-doctor communication

2. Required nurse-doctor communication classes for students entering the medical field at an under graduated level:

The majority of respondents (87%) rated the impact as either a 4 (45%) or 5(42%), contributing to a weighted average of 4.28, indicating a generally positive perception of the effectiveness of this strategy.

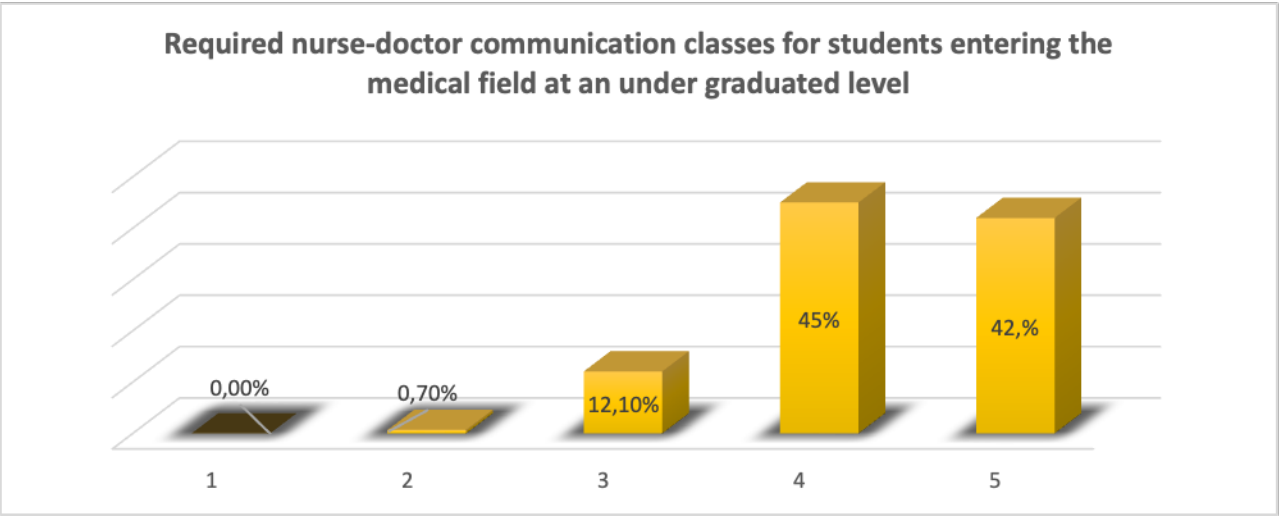


Figure 35: Participant ratings of nurse-doctor communication classes for students entering the medical field at an under graduated level for improving nurse-doctor communication

3. Using simulation for training and uniting the two professions:

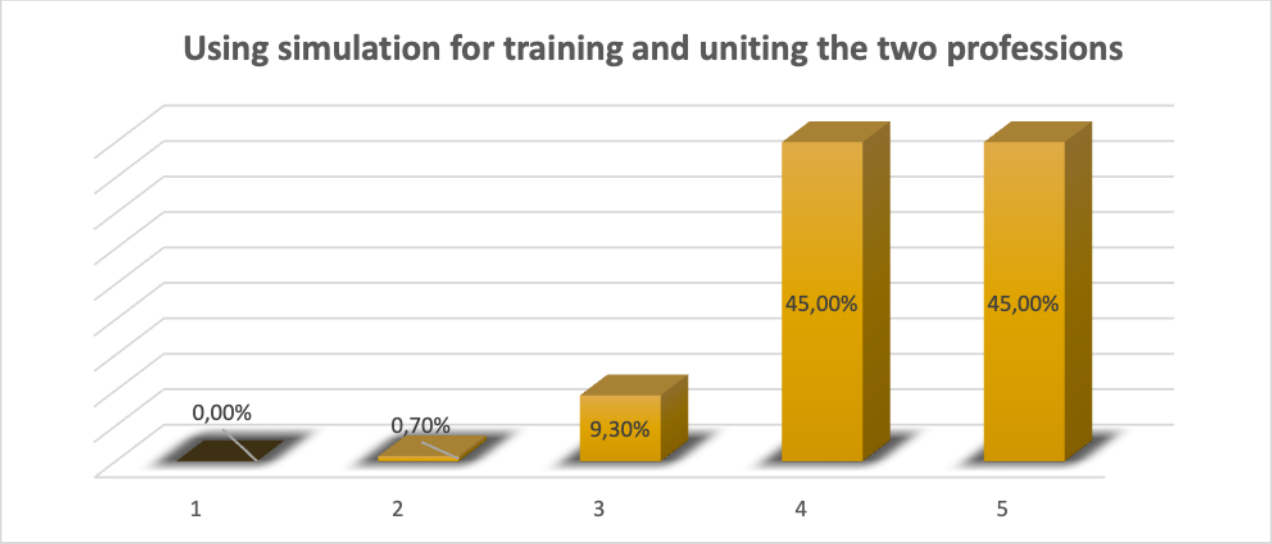


Figure 36: Participant ratings of Using simulation for improving nurse-doctor communication

The vast majority of respondents (90%) rated the impact as either a 4 (45%) or 5(45%), indicating a highly positive perception of the effectiveness of using simulation for training to

unite nurses and doctors. The weighted average score was 4.34 suggesting a strong overall support for this theoretical solution.

4. Multidisciplinary rounds communication including nurses:

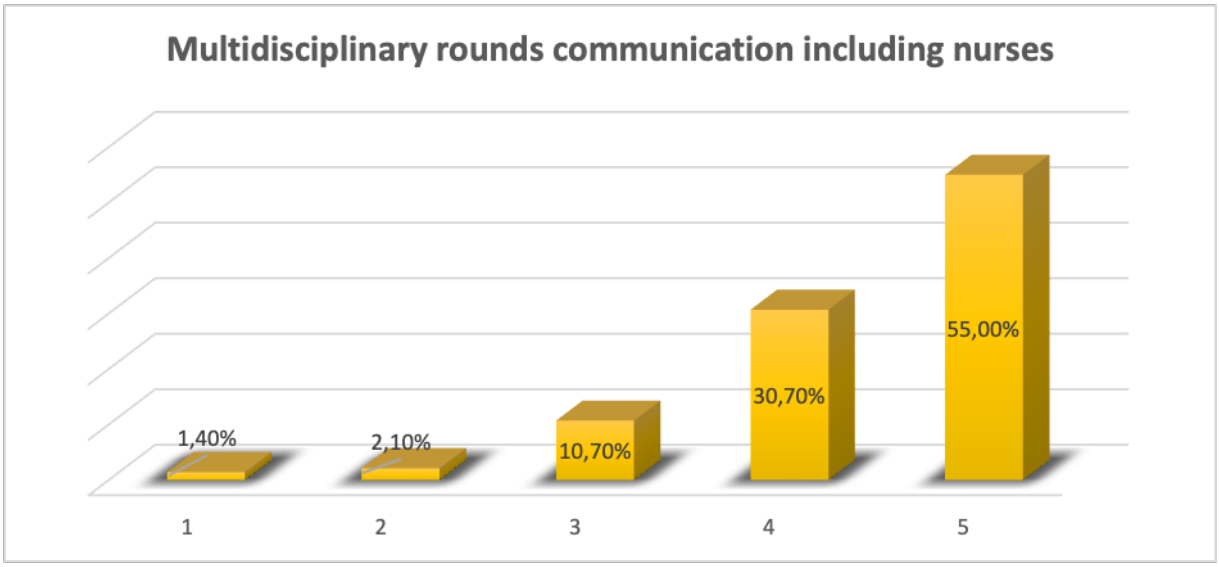


Figure 37: Participant ratings of including nurses in multidisciplinary rounds for improving nurse-doctor communication

A significant majority of respondents (85.7%) rated the impact as either a 4(30,7%) or 5(55%). The weighted average score was 4.35 showing strong support for this theoretical solution.

5. Workshops and seminars:

A significant majority of respondents (79.2%) rated the impact as either a 4(42.1%) or 5(37.1%), indicating a highly positive perception of the effectiveness of workshops and seminars. The weighted average score was 4,10 indicating a strong overall support for this theoretical solution.

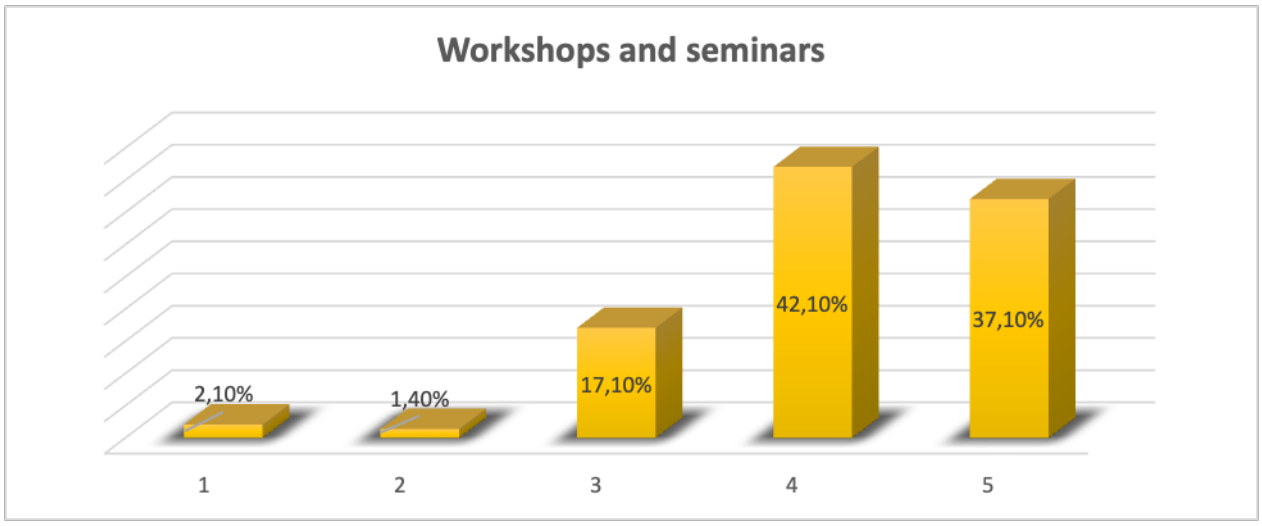


Figure 38: Participant ratings of workshops and seminars for improving nurse-doctor communication

6. Improved and structured communication tools:

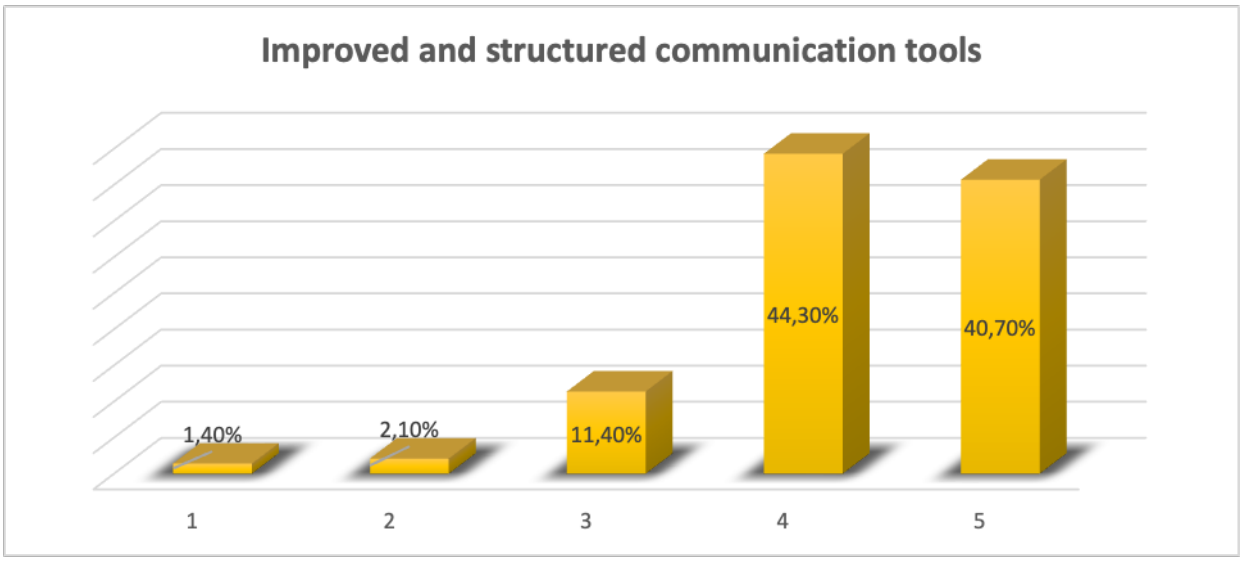


Figure 39: Participant ratings of using improved and structured communication tools for improving nurse-doctor communication

The majority of respondents (85%) rated the impact as either a 4 or 5 on the effectiveness scale. The weighted average score was 4.20 indicating that improved and structured communication tools are perceived as a promising strategy to enhance nurse-doctor collaboration.

7. Teamwork training programs:

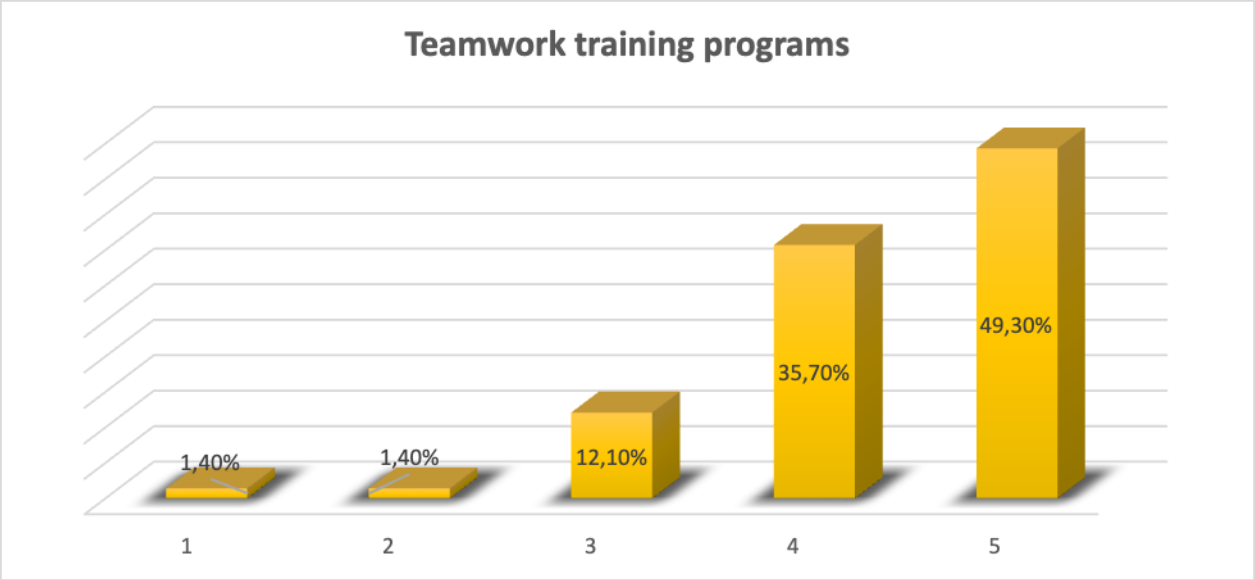


Figure 40: Participant ratings of teamwork training programs for improving nurse-doctor communication

A major part of respondents (85%) rated the impact of teamwork training programs as either a 4 or 5 on the effectiveness scale, contributing to a weighted average score of 4.38 out of 5. This suggests that teamwork training programs are perceived as a highly effective strategy.

8. Having therapy sessions open to nurses and doctors to relay concerns in confidence:

A vast majority of respondents (80,7%) rated the impact as either a 4 or 5 on the effectiveness scale. The weighted average score was 4.13 indicating that this theoretical solution received generally positive feedback, albeit with slightly less enthusiasm compared to some other solutions.

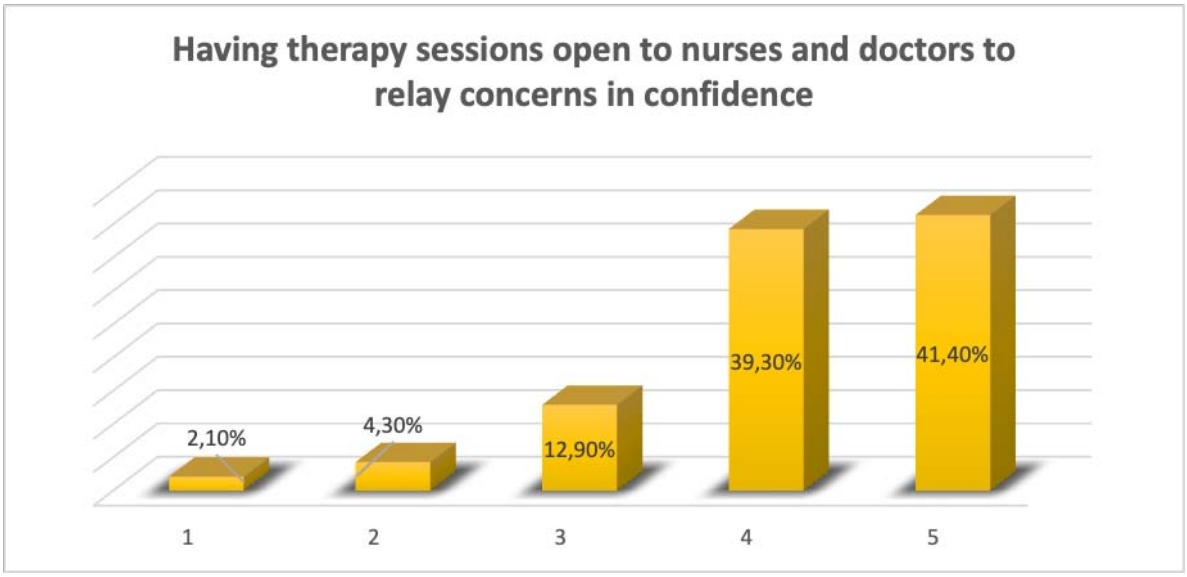


Figure 41: Participant ratings of having therapy sessions open to nurses and doctors for improving nurse-doctor communication

Figure 42: Improvement strategies efficiency by weighted average

In comparing the efficiency of various strategies to enhance nurse-doctor collaboration, teamwork training programs, multidisciplinary rounds communication including nurses and using simulation for training emerged as the highest-rated approaches, with weighted average scores of 4.38 ,4.35 and 4.34 out of 5 respectively. Following closely were strategies such as interprofessional education between nurses and doctors, required NDC classes for undergraduate students, and improved and structured communication tools, scoring respectively 4.30,4.28 and 4.20. However, workshops and seminars received a slightly lower rating of 4.10, while having therapy sessions open to nurses and doctors garnered a score of 4.13. Overall, the majority of the strategies were perceived as effective, with multidisciplinary rounds, using simulation for training and teamwork training programs standing out as particularly successful approaches to fostering nurse-doctor collaboration.

Bivariate analysis of factors associated with nurse-doctor communication:

I. Association between the age of respondents and the level of nurse-doctor communication:

Figure 43: Association between age and NDC level

The results indicated that among participants aged below 30 years old, 37.4% reported having a good level of NDC. Conversely, among respondents aged over 30 years old, 48.8% reported a good level of NDC.

Interestingly, these findings suggest younger respondents demonstrating a higher proportion reporting poor communication compared to older respondents. However, the p-value of **0.14** indicates that the observed results are not statistically significant.

II. Association between the gender of respondents and the level of nurse-doctor communication:

The results indicated that among female respondents, 39.8% reported having a good level of NDC. Conversely, among male respondents, 43.2% reported a good level of NDC.

Despite the slightly higher percentage of males reporting a good level of communication compared to females, the calculated p-value of **0.43** suggests that this difference is not statistically significant.

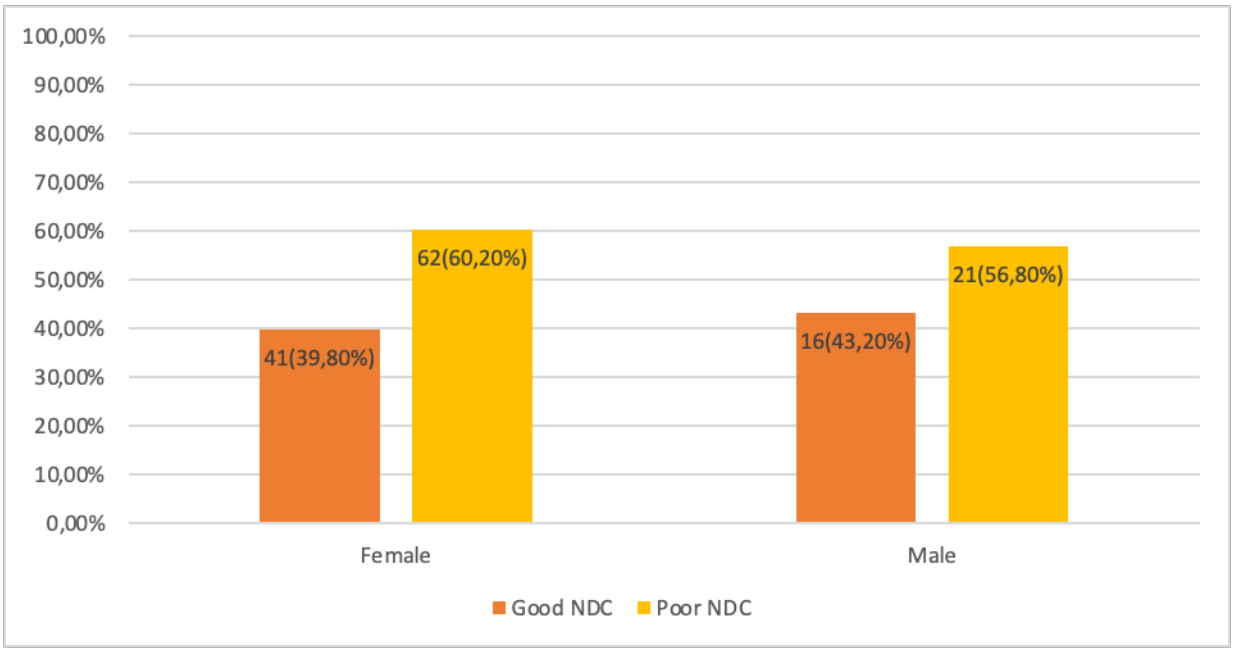


Figure 44: Association between the gender and NDC level

III. Association between the marital status of respondents and the level of nurse-doctor communication:

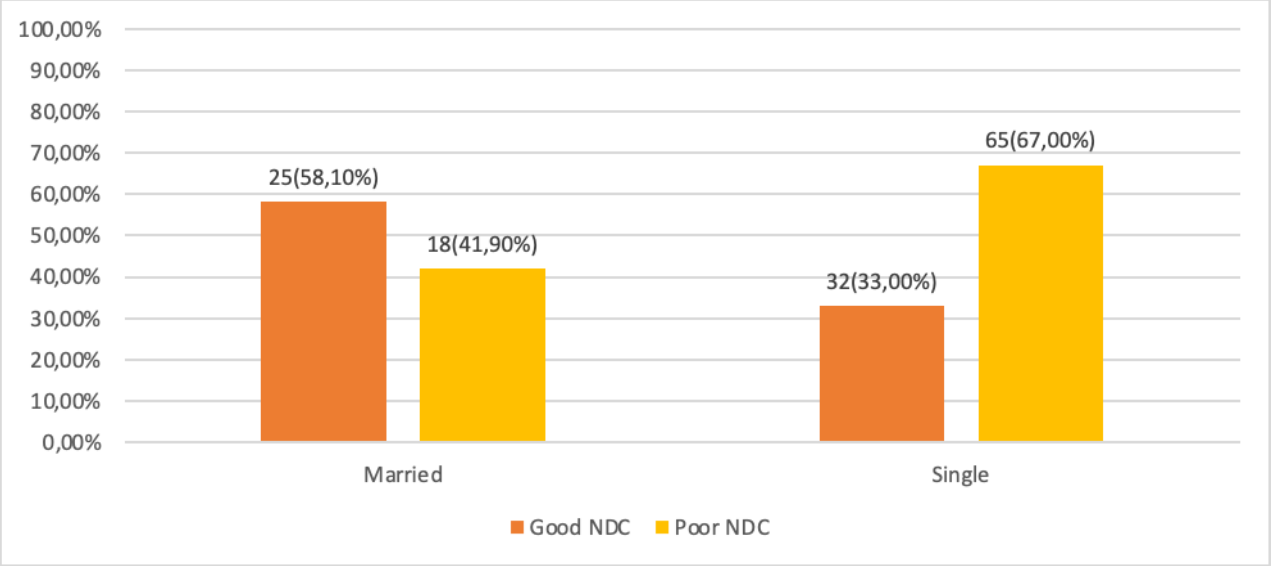


Figure 45: Association between the marital status and NDC level

The results revealed that among married respondents, 58.1% reported a good level of NDC. On the other hand, among single respondents, only 33% reported a good level of NDC.

The calculated p-value for this association was **0.005**, indicating a statistically significant difference in the distribution of NDC levels between married and single respondents. Specifically, married individuals were more likely to report a good level of communication compared to single individuals.

IV. Association between the professional category of respondents and the level of nurse-doctor communication:

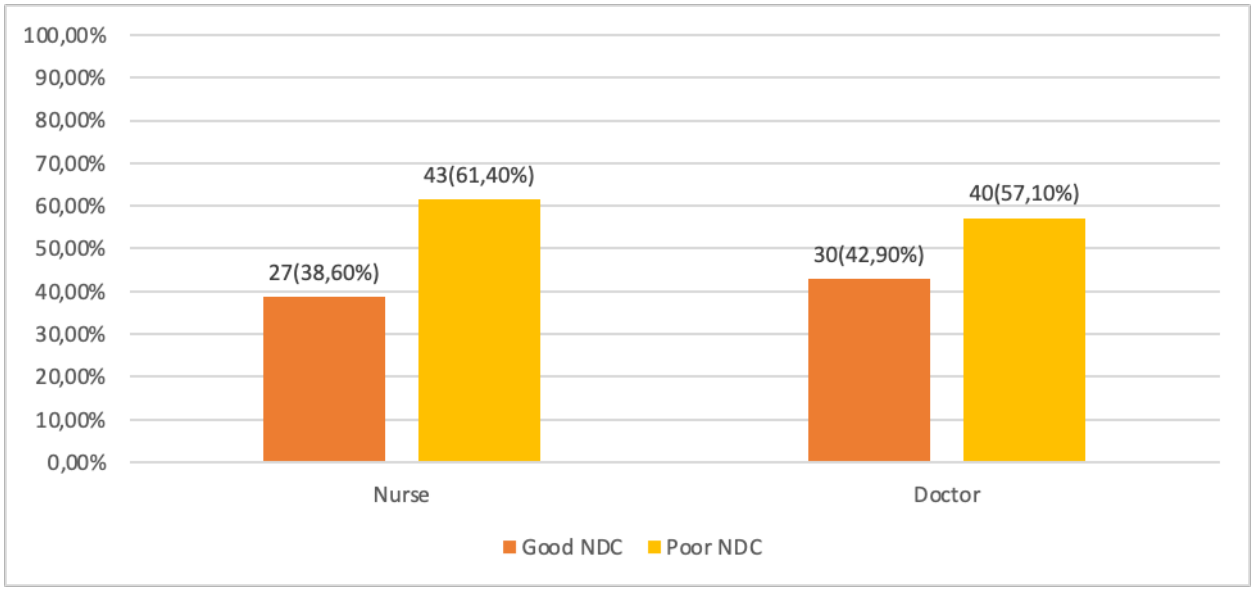


Figure 46: Association between the professional category and NDC level

The findings indicated that among nurses, 38.6% reported a good level of NDC, while. whereas, among doctors, 42.9% reported a good level of NDC.

However, the calculated p-value for this association was **0.36**, indicating that the observed differences between nurses and doctors were not statistically significant.

V. Association between the organizational related factors score and the level of nurse-doctor communication:

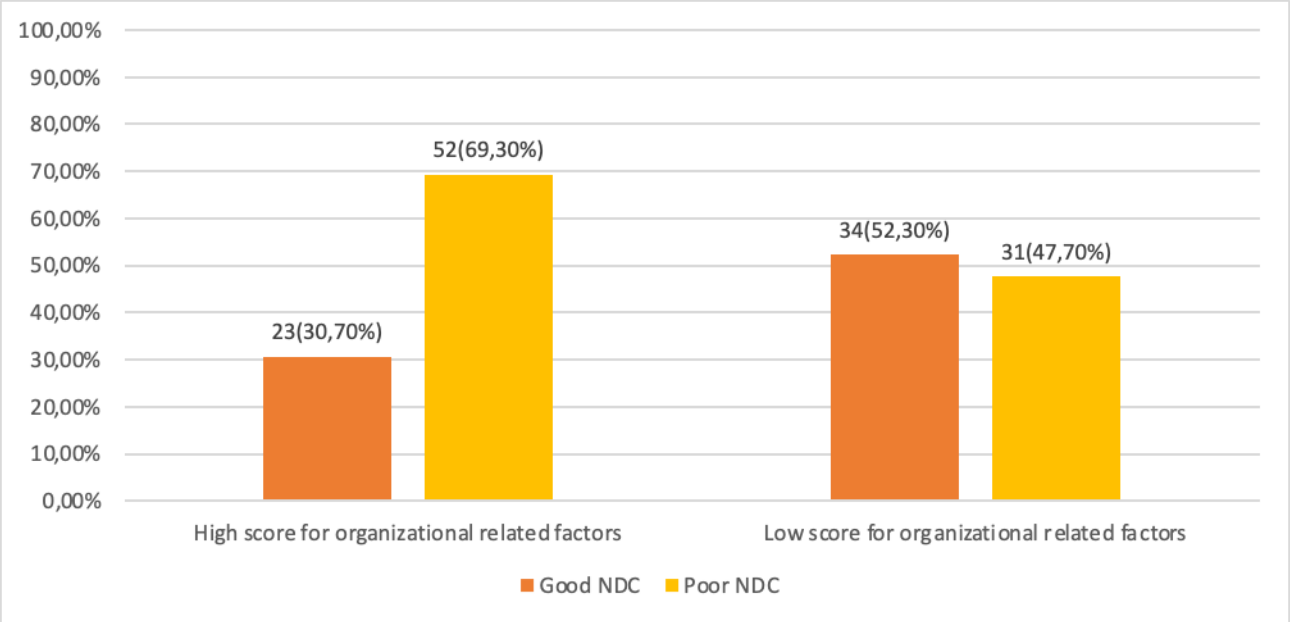


Figure 47: Association between the organizational related factors score and NDC level

The results indicated that among participants with a high score for organizational related factors, only 30.7% reported a good level of NDC. Conversely, among participants with a low score for organizational related factors, 52.3% reported a good level of NDC. This suggests that respondents who perceived higher levels of organizational challenges are more likely to report poor NDC

The calculated p-value for this association was **0.008** suggesting that the association between respondents' organizational related factors score and the level of NDC is statistically significant.

VI. Association between the work attitude-related personal individuals' factors score and the level of nurse-doctor communication:

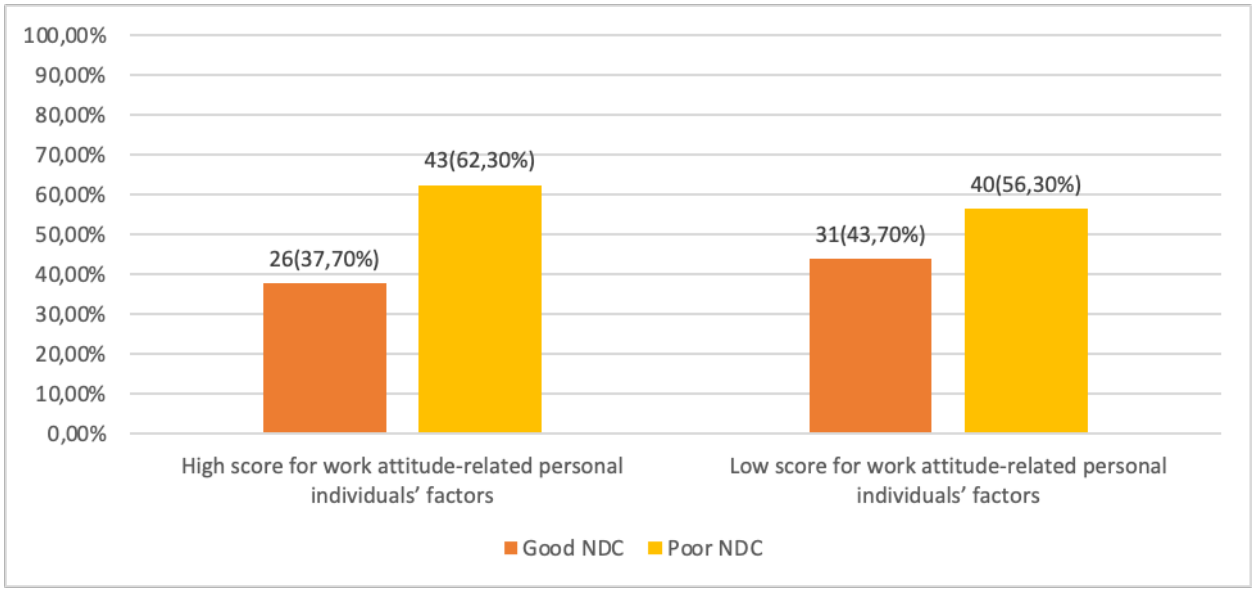


Figure 48: Association between the work attitude-related personal individuals' factors score and NDC level

The findings revealed that among participants with a high score for work attitude-related factors, 37.7% reported a good level of NDC. Whereas, among participants with a low score for work attitude-related factors, 43.7% reported a good level of NDC.

The p-value was **0,29** indicating that the association between respondents' work attitude-related personal individual factors score and the level of NDC is not statistically significant.

VII. Association between the personal behavior-related individual factors score and the level of nurse-doctor communication:

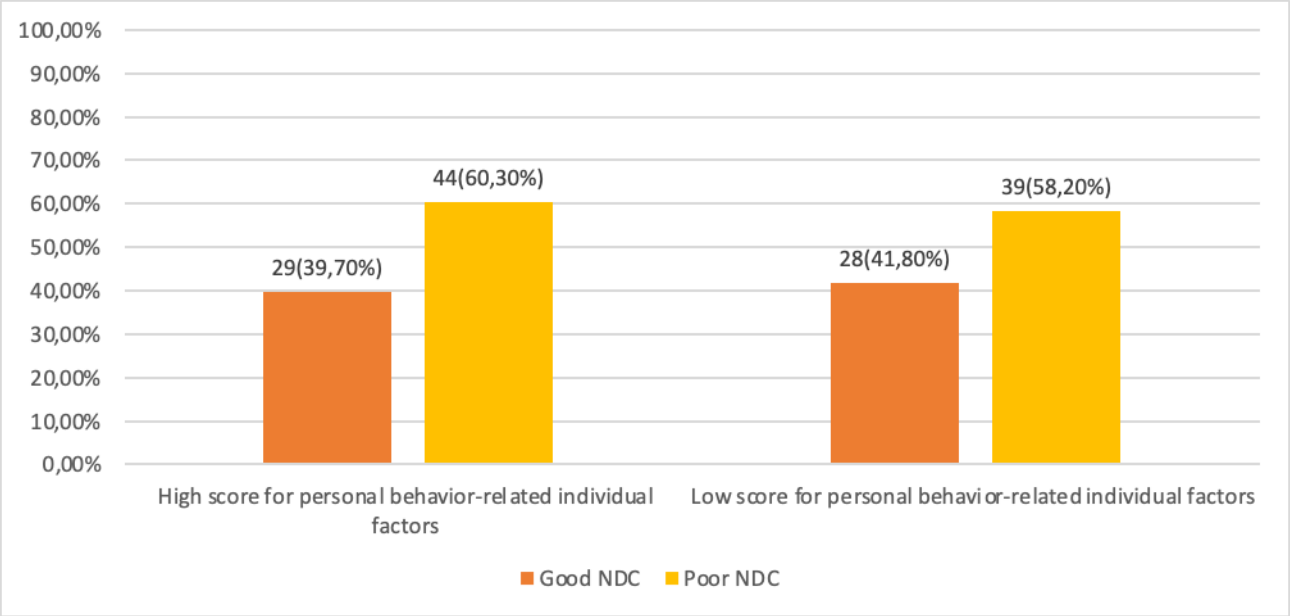


Figure 49: Association between the personal behavior-related individual factors score and NDC level

The results indicated that among participants with a high score for personal behavior-related individual factors, 39.7% reported a good level of NDC. On the other hand, among participants with a low score 41.8% reported a good level of NDC.

However, the calculated p-value for this association was 0.46, indicating that the observed differences in NDC levels between respondents with high and low scores for personal behavior-related factors were not statistically significant.

Table X: recapitulation of bivariable analysis of factors associated with the level of NDC

Variables	Categories	Level of NDC		p-value
		Good N (%)	Poor N (%)	
Age	>30 years old	20(48,8%)	21(51,2%)	0,14
	=< 30 years old	37(37,4%)	62(62,6%)	
Gender	Male	16(43,2%)	21(56,8%)	0,43
	Female	41(39,8%)	62(74,7%)	
Marital status	Single	32(33%)	65(67%)	**0.005**
	Married	25(58,1%)	18(41,9%)	
Professional category	Nurse	27(38,6%)	43(61,4%)	0,36
	Doctor	30(42,9%)	40(57,1%)	
Organizational related factors	High	23(30,7%)	52(69,3%)	**0,008**
	low	34(52,3%)	31(47,7%)	
Work attitude-related personal individuals' factors	High	26(37,7%)	43(62,3%)	0,29
	Low	31(43,7%)	30(56,3%)	
Personal behavior-related individual factors	High	29(39,7%)	44(60,3%)	0,46
	Low	28(41,8%)	39(58,2%)	

DISCUSSION

Background:

I. Communication and interprofessional collaboration in healthcare: definition and importance.

There has been a global interest during the last few decades, regarding why and how interprofessional collaboration should occur in health care, so the area is not new or uncharted. But even more today, when we have a change in demography with a population with complex health needs, the health care organizations have to work more cost-effectively and flexibly to meet the health care needs. Strategies for how to utilize the existing health workforce optimally are needed. Interprofessional collaboration has been emphasized as a strong and important force because high quality health care outcomes require actions that are more than the sum of the separate professional parts.[14,15] Interprofessional collaboration is also acknowledged to avoid clinical error and improve the quality and safety of patient care [16,17]

First, it is important to distinguish between communication and collaboration, as these terms appear frequently in research concerning the relationship between nurses and doctors and are not interchangeable. Communication and collaboration are two terms that are related, yet distinct. The Quality and Safety Education for Nurses (QSEN) project has identified teamwork and collaboration as one of five competencies needed by nurses to enhance patient safety. [18]

This competency can be defined in several ways which may be conceptually confusing. However, a central point in definitions is that practitioners from different professions work together with mutual respect regardless of what kind of knowledge and experience each brings to the team in an effort to deliver the highest quality of care. [12]

It is being able to function effectively within interprofessional teams, fostering open communication, and shared decision making to achieve quality patient care. [19] More simply stated, collaboration involves the processes of communication and problem solving as a team.[19,20] Communication is the first step to collaboration, as it is necessary to properly

communicate ideas, concerns, and questions in order to work together to solve a problem. Collaboration is linked to greater continuity of care, increased patient and professional satisfaction, and a decrease in wasted resources. When there is ineffective collaboration, patient safety and quality of care can be compromised leading to increased mortality rates. [21]

In order to have collaboration and good working relationships between doctors and nurses, communication must be clear, precise, and timely. According to the evidence, this type of communication often is not the case, resulting in delayed delivery of care to the patient, more medical errors, and decreased patient safety. [21] Because communication is the first component of effective collaboration, decreased communication means decreased collaboration.

II. Historical relationship between nurses and doctors:

The relationship between doctors and nurses is a very special one. There are few professions where the degree of mutual respect and cooperation between co-workers is as intense and important as that between the doctor and the nurse. [7]

The nurse-doctor relationship is influenced by the power of authority, social status, gender and other perspectives. Tensions, conflicts as well as misunderstandings caused by the difference in opinions and interest among nurses and doctors upset the relationship. The lack of good relationship can interfere with effective interdisciplinary communication and collaboration. Improving the patient safety requires addressing the current hierarchical professional relationship inherent in healthcare delivery. [22]

The earliest nurse doctor relationship was a manipulative termed the “Doctor-Nurse Game” ,outlined in 1967, where the nurse was permitted to indirectly suggest changes or modifications in a patient’s treatment or care plan but only if proper deference was shown to the physician and if nurses maintained their subordinate position. [7]

Fast forward to 2009, Schmalenberg and Kramer reported in their research article findings synthesized from six research articles on nurse-doctor communication. This article published story of 20,000 staff nurses and how they perceive, assess and develop high-quality

relationships with physicians in hospitals to improve patient care. The study reported 5 different types of nurse-physician relationships including collegial relationships, collaborative relationships, student-teacher relationships, friendly stranger relationships and hostile relationships. [23]

- **Collegial relationship**: their features include equal trust; power and respect characterize a collegial relationship. Nurses and doctors refer to each other as peers in their relationship. Doctors are excellent and value the opinion of staff nurses. [23]
- **Collaborative relationships**: marked by mutual trust, power, respect, and cooperation. they are based on mutuality rather than equality. Nurses freely say that the physicians and nurses listen to one another and plan care together, but the "doctor is still on top." The best nurse-physician relationships are collegial relationships and collaborative relationships.[23]
- **Student teacher nurse-physician relationships:** either the physician or the nurse can be a teacher. With residents or attending doctors who are dealing with comorbidities beyond their specialty, the nurses may take teaching or guiding role.[23]
- **Friendly stranger nurse-physician relationship:** there is a formal exchange of information and a neutral feeling tone of rapport. A nurse said I've worked with that doctor for over 17 years and he still doesn't know my name, although I address him by his name every morning. That's just the way it is. [23]
- **Hostile nurse-doctor relationship**: the worse nurse-physician relationships are hostile. This type of relationship characterized by anger; verbal abuse real or implied threats and resignations. [23]

Fortunately, more evidence is suggesting that the relationship between nurses and doctors is slowly becoming collegial or collaborative. [21] However It is highly relevant that efforts are taken to determine the type of nurse-doctor relationship in the local context, therefore strategies can be directed at improving relationships between nurses and physicians so that the two professions continue to move toward collaboration.

Discussion of our results:

I. Sociodemographic characteristics:

1. Age and status:

The distribution of participants by age in our study revealed a predominant presence of younger individuals, with the majority falling within the 20 to 30 years old age group, comprising 71% of the participants. Additionally, the age group of 31 to 40 years old represented 27% of the respondents, indicating a smaller but still significant proportion of participants in this age range.

As for the distribution of our 70 doctors based on their status, 57% were residents and 40% were interns. These professionals who are typically younger, make up a significant portion of doctors in university hospitals.

These findings mirror the academic and professional paths of healthcare professionals in training and align with the common practice where nurses in Morocco typically undergo a 3-year nursing education program while many medical students begin their residencies shortly after graduation, usually between the ages of 25 and 30, although this timeline can vary based on multiple factors.

Besides the opportunity for multiple attempts at internship and residency exams, the duration of medical studies may result in some individuals commencing their training later, in their late twenties or early thirties, due to various factors such as study interruptions or personal decisions delaying residency initiation.

2. Work experience:

When considering participants' experience years, it's notable that among those reporting more than 6 years of experience, the majority were nurses. Conversely, among those with less than 6 years of service, the majority were doctors, suggesting a larger representation of junior medical staff. This could be explained by the fact that in a University Hospital Centre, the majority of nurses are permanent employees. On the other hand, the majority of doctors are often in training positions, such as interns or residents, and their roles are temporary as they will leave after completing their training period.

3. Gender:

In terms of participants' distribution by gender, among the 140 participants in our study, 74% identified as female. In contrast, 26% of participants identified as male. This yielded a sex ratio of 0.36, indicating a notable predominance of female participants.

This finding aligns with the study by Matrane et al., who also observed a female predominance with 59% female participation in the 3rd cycle. Their findings further confirmed the increasing proportion of women in the residency and internship curriculum, which rose from 16.6% to 71.4% over five years.[24]

In higher education in Morocco, le Haut-Commissariat au Plan (HCP) projected that the feminization rate would reach 58.4% in 2022, compared to 49.4% in 2012. This surge was notably driven by fields such as educational sciences and paramedical professions, where feminization rates were projected to be 72.4% and 73.3%, respectively.[25]

Further, this change aligns with the global trend towards the feminization of the medical profession.[26]

4. Marital status:

The distribution of participants by marital status in our study revealed an interesting trend. The majority, comprising 69% of the total respondents, identified as single. There could be several factors contributing to these results. Firstly, the relatively higher percentage of single individuals could be attributed to the age of the participants, with a significant proportion falling within the younger age groups where individuals are more likely to be single. Additionally, the nature of the healthcare profession, particularly in early career stages, may demand significant time and commitment, making it challenging for individuals to prioritize relationships and marriage. Furthermore, cultural and societal norms regarding marriage and family life may also influence the marital status of healthcare professionals, with some opting to delay marriage until they have established themselves in their careers. Conversely, those who are married may have different priorities and responsibilities, potentially impacting their availability to participate in studies such as ours. Overall, these results highlight the complex interplay of personal, professional, and cultural factors that shape the marital status distribution among healthcare professionals in our study.

II. Nurses and doctors' perception of the importance and impact of nurse-doctor communication on different healthcare aspects:

1. Nurses and doctors' perception of communication importance:

In our study, a substantial majority of respondents (95,7%), comprising both nurses and doctors, expressed strong agreement with the significance of effective communication between these two groups. Particularly noteworthy is the overwhelming consensus among nurses, reflected in their weighted average score of 4.97. This sentiment is echoed in Lacoste's study, where 100% of nurses surveyed emphasized the importance of this communication channel, contributing to a perfect weighted average score of 5.[12]

On the other hand, doctors in both studies also acknowledged the importance of NDC and reported high levels of agreement. Yet, both studies reported slightly lower weighted average scores among doctors compared to nurses. This suggests a nuanced difference in perception between the two professional groups, with nurses possibly assigning a higher value to the communication dynamic with doctors. [12]

Overall, the results from both our study and Lacoste's study underscore the unanimous agreement among healthcare professionals regarding the critical significance of NDC in the workplace and the importance of fostering a collaborative and communicative environment within healthcare settings, where effective interprofessional communication is prioritized and supported.

Table XI: Nurses and doctors' perception of NDC importance: Comparative analysis between our study and Lacoste's study

NDC importance	Nurses weighted average	Doctors weighted average
Our study	4,97	4,78
Lacoste's study	5	4,85

2. Nurses and doctors' perception of miscommunication frequency:

The majority of respondents in our study, including both nurses and doctors, expressed disagreement with the idea that miscommunication between nurses and doctors is infrequent, as indicated by the weighted average scores. Notably, doctors exhibited a higher level of disagreement compared to nurses. This suggests that doctors, who are often at the forefront of patient care and communication, may have a more acute awareness of communication challenges in the healthcare setting.

Lacoste's study corroborates these findings, with both nurses and doctors expressing lower weighted average scores, indicating a higher level of disagreement with the proposition that miscommunication is rare. However, it's important to note that doctors in Lacoste's study

still expressed a higher level of concern compared to nurses, as evidenced by their weighted average score of 2.62, compared to 1.31 for doctors.[12]

Conversely, Foth et al indicated in his study that the deficit in communication processes was perceived as less problematic and burdening by physicians than by nurses, likely due to physicians' greater workplace autonomy. [27]

Overall, these findings underscore the pervasive nature of miscommunication between nurses and doctors in the healthcare setting. While the exact perception of miscommunication frequency may vary slightly between these professionals, the consensus remains that miscommunication is a prevalent issue that warrants attention and proactive measures for improvement.

Table XII: Perceived frequency of miscommunication between nurses and doctors: comparative analysis between our Study and Lacoste's study

Nurse-doctor miscommunication frequency	Nurses weighted average	Doctors weighted average
Our study	2,4	2
Lacoste's study	2,62	1,31

3. Nurses and doctors' perception of the impact of nurse-doctor miscommunication on different healthcare aspects

Our study on effective NDC shed light on the profound impact of miscommunication between healthcare professionals on various aspects of patient care and healthcare delivery. Both nurses and doctors overwhelmingly perceived poor communication as significantly affecting the **quality of care and patient outcomes**. This alignment in perception underscores the critical role effective communication plays in ensuring optimal healthcare delivery.

However, while nurses and doctors shared similar views on the importance of communication, subtle differences emerged in their perceptions of its impact on **patient safety and medical errors**. While nurses attributed a slightly lower weighted average score to this

aspect compared to doctors, the consensus remains strong, indicating a collective recognition of communication's pivotal role in patient safety.

Additionally, healthcare professionals recognized the implications of communication breakdowns on **patient death and the risk of lawsuits**, with both nurses and doctors attributing substantial significance to this aspect. However, doctors assigned a slightly higher weighted average score, reflecting their heightened awareness of the potential legal ramifications of communication failures.

Moreover, the study revealed that nurses and doctors' shared concerns regarding the impact of poor communication on **patient experience and satisfaction**. This suggests that both groups acknowledged the significant influence of effective communication on patients' perceptions of their care, emphasizing the need for collaborative efforts to improve communication practices.

Similarly, healthcare professionals recognized the implications of communication breakdowns on **healthcare cost management**, with doctors assigning a slightly higher weighted average score compared to nurses. This underscores the financial ramifications of ineffective communication and highlights the importance of addressing communication barriers to optimize resource allocation and cost efficiency in healthcare settings.

Furthermore, the study underscores the detrimental effects of poor communication on **healthcare professionals' well-being**, with both nurses and doctors expressing concerns about its impact on stress levels and burnout prevention. While nurses and doctors exhibited a close alignment in their perceptions, doctors tended to attribute a slightly higher severity to this aspect. This suggests that doctors may have perceived these challenges with a heightened sense of urgency, reflecting potential differences in their experiences and responsibilities within the healthcare system.

In line with our findings, Lingard et al., in their exploration of communication failures in operating rooms, revealed that communication breakdowns are frequently at the core of medical errors. They found that 36.4% of communication failures in their study led to observable and

direct impacts on system processes, such as inefficiency, heightened tension among team members, resource misuse and waste, procedures delays, patient inconvenience, and procedural errors.[28]

In addition, communication is essential to effective teamwork which plays a vital role in healthcare, as highlighted by Manser's review on teamwork and patient safety in dynamic healthcare domains. Collaborating as a team enhances clinical results, boosts professional satisfaction, and provides essential peer support. By working together, healthcare professionals can improve communication, reduce medical errors, enhance patient care, and create a more efficient and effective healthcare system. Teamwork not only leads to better patient outcomes but also fosters a positive work environment, increases job satisfaction, and promotes a culture of respect, appreciation, and support among healthcare workers. In essence, teamwork in healthcare is a core value that underpins the delivery of safe, high-quality care and contributes to the overall well-being of both patients and healthcare professionals.[29]

Moreover, in Pesko's study on NPC, patient severity, and hospital readmission in an American home healthcare, the impact of communication failures between nurses and physicians on patients' readmission was examined. The findings revealed that communication failure significantly increased the probability of readmission among high-risk patients. [10]

Effective communication is paramount in healthcare as it ensures safe and high-quality care for all involved. According to a 2016 John Hopkins study, medical errors claimed over 250,000 lives annually in the United States, ranking as the third-leading cause of death, following heart disease and cancer [30]. Miscommunication among healthcare professionals during transitions of care, as highlighted by The Joint Commission, an independent, not-for-profit organization responsible for accrediting hospitals nationwide, contributed to a staggering 80% of serious medical errors. [31]. This emphasizes the critical role communication plays in preventing adverse outcomes. Thus, the emerging healthcare model, interprofessional teams, can help subside the significant amount of deaths per year, solely through communication.[32]

Furthermore, studies have shown that improved collaboration between nurses and physicians correlates with decreased rates of bloodstream infections and pneumonia in intensive care units, emphasizing the critical role of teamwork in infection prevention[33]. Besides, multidisciplinary collaboration involving physicians, nurses and other healthcare professionals is essential for enhancing medication safety and reducing medication administration errors, which pose a significant threat to patient well-being. [34] Additionally, the implementation of communication tools such as SBAR (Situation, Background, Assessment, Recommendation) has been shown to enhance nurse-physician communication, leading to a reduction in unexpected deaths and improved patient safety outcomes. [35]

Furthermore, in their study titled "Nurse-to-physician communications: connecting for safety," Shannon and Myers, a nurse and a physician who left clinical care to better understand and address the underlying deficiencies in the care system, personally witnessed multiple occasions in which simple misunderstandings or failures to communicate resulted in harm to patients or flared into tension between staff members. They believed that poor NPC had a substantial negative effect on patient safety, as well as the patient experience of care, nurse satisfaction, physician satisfaction, care quality, and non-clinical outcomes such as additional costs associated with unnecessary readmissions, duplicative testing, and other forms of waste and inefficiency. [11]

In conclusion, the findings highlight the pervasive nature of nurse-doctor miscommunication and its multifaceted impact on healthcare delivery. By recognizing the shared concerns and perceptions of nurses and doctors regarding the consequences of poor communication, healthcare organizations can prioritize interventions aimed at fostering a culture of effective communication and collaboration. Addressing communication barriers not only enhances patient outcomes and satisfaction but also promotes healthcare professionals' well-being and mitigates financial risks, ultimately advancing the overall quality and safety of healthcare delivery.

III. Level of nurse-doctor communication

Our study examining NDC within the Pediatric Departments of Mother and Child Hospital revealed that 59.3% of respondents demonstrated a poor level of communication. This indicates that a significant portion of the respondents perceived the communication between nurses and doctors to be lacking.

The comparison of our study results with a study conducted in public hospitals of Eastern Ethiopia regarding NDC in patient care and associated factors, revealed notable similarities and differences. The Eastern Ethiopia study found that 53.4% of respondents had a poor level of NDC. Hence, both studies highlighted a significant portion of respondents perceiving communication between nurses and doctors as inadequate. However, our study had a higher percentage of respondents with poor communication levels compared to the Eastern Ethiopia study. This indicates a common challenge in NDC that needs attention and improvement strategies to enhance patient care outcomes. However, differences in sample size, geographical location, and hospital contexts between the two studies suggest the importance of considering these factors when interpreting and addressing communication issues in healthcare settings.[3]

The findings of these studies are in line with a study on the perceived nurse-physician communication and associated factors in public hospitals of Jimma, Ethiopia, which demonstrated that the perceived level of communication between these professional groups has attention-seeking gaps that hinder the optimal delivery of healthcare services.[4]

Table XI: Comparative analysis of NDC levels in Pediatric Departments of Mother and Child Hospital, UHC of Marrakech vs public Hospitals of Eastern Ethiopia

	Good level of NDC N (%)	Poor level of NDC N (%)
Our study	57(40.7%)	83(59.3%)
Jemal et Al study	206(46,8%)	234(53,4%)

IV. Barriers to effective nurse -doctor communication:

1. Organizational related factors:

- **Hospital recognition for healthcare professionals and management system:**

A significant majority of our respondents, comprising 69.2%, agreed that a disorganized hospital management system represents a notable barrier to effective NDC. This suggests a widespread recognition among participants of the detrimental effects of this factor on communication dynamics within the healthcare setting.

Furthermore, when comparing nurses and doctors' perceptions of this barrier, both groups demonstrated relatively high weighted average scores. The slight difference indicates that both professional groups perceived this barrier similarly in terms of its impact on communication.

Jemal et al.'s conducted a similar but multi-center-mixed methods study (a quantitative cross-sectional and phenomenological qualitative) to explore NPC in patient care and associated factors in public Hospitals of Eastern Ethiopia.[3] Although, our study reported a slightly higher agreement rate compared to Jemal et al.'s study (58.9%), both studies indicated a significant level of agreement among participants regarding the impact of this barrier on NDC.

Further, the qualitative findings from Jemal et al.'s study provided additional insights into the impact of hospital modernization and recognition on NDC effectiveness. Participants highlighted the importance of hospitals providing respect and recognition to healthcare professionals. Additionally, they emphasized the importance of hospital leaders being receptive to both staff and patient feedback, rather than favoring certain individuals or neglecting others.

Another study, focusing on nurses' perspectives regarding barriers to effective NDC, revealed that nurses expressed frustration stemming from the perception that their hard work and sacrifices were not appreciated by physicians or organizational management.[36]

The study conducted by Vlastarakos and Nikolopoulos shed further light on the dissatisfaction among healthcare professionals regarding hospital management. Their findings indicated that 76% of doctors, in their study, expressed dissatisfaction with hospital management and perceived it as inadequate. [37]

Another study regarding nurse-doctor relationship in Rwanda corroborated these findings, indicating that the majority of participants in the study confirmed a lack of equality between nurses and doctors in terms of hospital management. This disparity was found to contribute significantly to misunderstandings and conflicts between the two groups.[38]

The dissatisfaction expressed by healthcare professionals towards hospital management further emphasizes the need for reforms and improvements in organizational structures to enhance overall healthcare delivery and patient outcomes.

- **Lack of shared vision between nurses and doctors:**

A significant majority, comprising 67.1% of participants, agreed that this barrier presents a substantial obstacle to effective communication. This suggests that there is a prevalent acknowledgment among healthcare professionals of the importance of having a unified understanding and alignment of goals and objectives between nurses and doctors for optimal communication outcomes.

Both nurses and doctors rated the lack of shared vision similarly, suggesting a shared understanding between nurses and doctors regarding the importance of establishing a common vision to facilitate better communication dynamics.

In Jemal et al.'s study, 55.2% of respondents agreed that the studied barrier hinders effective NDC. Consequently, although both studies indicated a significant level of agreement among participants regarding the impact of having divergent goals and objectives on NDC, our study reported a higher percentage of agreement.[3]

Moreover, Hailu et al. also revealed in their study that the lack of shared vision between nurses and physicians was among the top six barriers strongly agreed upon by both nurses and physicians in the description of NPC barriers.[4]

Similarly, in Etherington et al.'s study on barriers and enablers to effective interprofessional teamwork in the operating room, 81.8% of participants, including nurses and doctors, identified a shared definition of teamwork as a critical enabler for effective collaboration. Participants emphasized the importance of most team members defining teamwork in the same way. Specifically, teamwork as spoken about as "working toward a common goal", with the common goal being patient safety or a good outcome for the patient.[39]

Numerous studies have consistently emphasized the significance of establishing shared objectives, visions, and goals among professionals in a workplace. Effective interprofessional teams require professionals' knowledge of each other's roles and cultivating a common understanding of tasks and goals.[40,41] This collective understanding is essential because professionals often approach problems from diverse perspectives based on their respective knowledge traditions.[42]

Overall, these findings highlight the importance of fostering a shared understanding and alignment of goals between nurses and doctors to enhance communication effectiveness.

- Lack of clarity in roles and responsibilities by nurses /doctors:

A substantial majority, comprising 72.9% of our participants, agreed that the lack of clarity in roles and responsibilities among nurses and doctors hinders communication. This suggests that there is a prevalent acknowledgment among healthcare professionals of the importance of having clear delineation of roles and responsibilities for effective communication and collaboration.

It's noteworthy that nurses rated this barrier higher compared to doctors, implying that they may encounter more challenges related to unclear roles and responsibilities. Nurses

heavily rely on clear guidance and direction to perform their duties effectively. Consequently, ambiguity in roles and responsibilities can lead to confusion and frustration among nursing staff.

Conversely, doctors, although still recognizing the barrier, might have perceived it as less critical or impactful on communication compared to nurses. This could be due to differences in the nature of their roles, with doctors having more autonomy and authority in decision-making. Nonetheless, the fact that both nurses and doctors recognized this factor as a barrier to effective NDC underscores its universal relevance within healthcare settings.

In comparison to the results obtained in Jemal et al.'s study, where 58.9% of respondents agreed that the studied barrier could hinder NDC, our study revealed a higher level of agreement. Therefore, while both studies highlighted the significance of role clarity in facilitating effective communication between healthcare professionals, the higher percentage of agreement in our study underscores the heightened recognition of this barrier within our sample population.[3]

In line with these findings, Amudha et al. reported in their study among nurses that lack of understanding about the professional role of nurses is an area that research has identified as needing attention to improve collaborative relationships.[36] As roles and responsibilities evolve with people's changing needs, tensions will arise unless everyone is aware of who does what, when, why and how. [43]

Clarification of roles plays a pivotal role in defining tasks and responsibilities across various professions, thereby fostering clear expectations among team members, as highlighted by Pullon.[44] This sentiment is echoed in a study on interprofessional collaboration between nurses and doctors, which identified challenges faced by nurses in determining the responsible doctor for their patients and the lack of clear guidelines on whom to contact. [45]

Moreover, role clarity and trust are identified as crucial factors in the development and optimization of IPC. Barriers to role clarity and trust can be attributed, in part, to limited

knowledge and understanding of other team members' knowledge, skills, and scopes of practice, posing challenges in effectively managing and optimizing roles within the team.[46,47]

These findings underscore the importance of clarifying roles and responsibilities to improve communication dynamics and ultimately enhance patient care outcomes.

- **Hierarchy and conflicting orders of doctors:**

More than half of the participants (51.4%) agreed that hierarchy and conflicting orders negatively impacted NDC, indicating a prevalent concern within the healthcare environment regarding the hierarchical structure and communication dynamics between nurses and doctors.

While both professional groups acknowledged the barrier, doctors rated it slightly higher than nurses. This suggests that doctors might have perceived hierarchy and conflicting orders within their ranks as a more pronounced obstacles to effective communication compared to how nurses perceived it. The difference in scores could stem from doctors' experiences with hierarchical structures within medical teams and the challenges they face in navigating conflicting directives.

Similarly, in Etherington et al.'s investigation study, it was revealed that a significant majority of participants, comprising 81.8% of nurses and doctors, identified hierarchies as impediments to IPC. Participants elaborated on how various social hierarchies, encompassing conflicts between professional status and years of experience, could affect teamwork, such as a first-year resident challenging a nurse with 30 years of experience. In any case, it was clear that addressing multiple aspects of power and hierarchy would be important to the success of any teamwork intervention. [39]

Vatn et Dahl indicated in their study on IPC between nurses and doctors for treating patients in surgical wards that the hierarchy is not only professional but also experience-based. Moreover, respondents did not describe this hierarchy as unilaterally negative but rather expressed the view that an experience-based hierarchy could be both natural and healthy. The

positive side of this structure is that it can contribute to patient safety through the support of an experienced colleague, regardless of profession. [45]

Effective interprofessional cooperation is closely linked to a working environment characterized by a flat structure, where the various professions can contribute their views on patient treatment equally without fear of criticism. [21,48]

However, research showed that health institutions are often hierarchically structured, with a traditional understanding of the role of medical doctors still prevailing among health professionals. Both the education system and medical institutions help maintain the hierarchy, which can impede the ideal of equitable contribution and communication among healthcare professionals.[21,40]

In addition, Aase et al and Leonard et al wrote that hierarchical structure may cause health professionals to abstain from communicating their opinions, and this can limit valuable contributions to patient treatment. [40,49]

Foth et al. also highlighted that the authoritarian delegation of medical orders presented a significant source of conflict, as nurses perceived it as a symbol of medical dominance and a devaluation of their own competencies. Further, hierarchical working relations contradicted the nurses' desire for team-oriented cooperation.[27]

- **Differential treatment of professionals:**

The results of our study highlighted the issue of differential treatment of professionals as a barrier to effective NDC. 50% of participants, expressed agreement with this notion, indicating widespread recognition of the issue within healthcare settings.

When comparing nurses' and doctors' perceptions, nurses rated the barrier slightly higher, suggesting that nurses might have experienced or perceived instances of unequal treatment or favoritism more acutely within the healthcare environment, potentially impacting their communication dynamics with doctors.

Similarly, in Hailu et al.'s study, the differentiation of nurses and physicians within hospital settings emerged as one of the top six factors that nurses and physicians strongly agreed upon. [4]

Conversely, Jemal et al.'s findings indicated a lower agreement rate of only 39.1%, suggesting potential variations in perceptions across different studies or contexts. [3]

In Mukeshimana et Asingizwe's study, the majority of respondents, totaling 86.7%, confirmed the absence of equality between nurses and doctors in terms of hospital management within the study area. [38]

This inequality was corroborated by other studies, which highlighted a pervasive perception among hospital managers of nurses being considered less intelligent compared to doctors, who are often regarded as geniuses. Consequently, nurses are consulted less frequently, if at all, in decision-making processes by managers.[50] Moreover, nurses' efforts are frequently unrecognized, with credit for successes primarily attributed to doctors. [51]

Addressing this barrier requires fostering a culture of equity, fairness, and mutual respect within the healthcare team, ensuring that all professionals are valued and treated equally, regardless of their role or status.

- **Absence of communication forum between nurses and doctors**:

The findings of our study indicated that the absence of dedicated communication forums between nurses and doctors can significantly hampers effective NDC, as acknowledged by 67.1% of respondents. This lack of structured platforms for communication can contribute to information gaps, exemplified by the absence of regular forums or meetings where healthcare professionals can discuss patient care.

Notably, nurses perceived the barrier more critically. The higher rating from nurses may indicate that they feel a stronger need for structured communication platforms to facilitate collaboration, exchange of information, and coordination of care with doctors.

This aligns with findings from Jemal et al.'s study, where 57.3% of respondents also agreed on the notion of the lack of dedicated communication forums hindering NDC. [3]

Hailu et al.'s findings also corroborated the significance of the absence of these forums. In their study, the absence of such forums emerged as the first factor strongly agreed upon by both nurses and physicians as a major contributing factor to nurse-physician miscommunication.[4]

These findings are consistent with other studies highlighting the detrimental effects of the lack of face-to-face communication opportunities on NDC effectiveness. Tjia et al. and Walden et al. have similarly emphasized how the absence of such opportunities can hinder effective communication between nurses and physicians.[52,53]

Furthermore, maintaining opportunities for face-to-face communication, as demonstrated in Aston et al.'s study, can significantly improve NDC. For instance, the introduction of daily nurse-physician surgical morning meetings improved NDC in an Australian pediatric hospital ward, creating opportunities to jointly clarify patient issues, treatment goals and plans. Aston et al. revealed that such initiatives as simple as discussions among nurses and doctors can enhance personal and professional experience and lead to improved health outcomes for patients.[54]

Additionally, Rosenstein's study on the impact of nurse-doctor relationships on nurses' satisfaction and retention emphasized the importance of creating more opportunities for collaboration and communication. Respondents in the study recommended improvement strategies such as open forums, group discussions, and collaborative workshops to foster better communication and collaboration between nurses and doctors.[55]

These results underscore the urgent need to establish structured communication platforms to facilitate effective collaboration within healthcare settings. Addressing this barrier necessitates establishing formal communication mechanisms, such as regular interdisciplinary meetings or digital platforms, to facilitate open dialogue and enhance collaboration between nurses and doctors.

- **Lack of medical supplies and equipment:**

The results of our study indicated that a significant majority of respondents, comprising 69.3% of the sample, agreed that a lack of sufficient supplies and equipment served as a barrier to effective NDC.

When comparing nurses' and doctors' perceptions, doctors rated this barrier higher than nurses. The higher rating from doctors may stem from their direct reliance on these resources to diagnose and treat patients effectively, leading them to perceive shortages as more impactful on communication with nurses.

Similarly, findings from Jemal et al.'s qualitative study align with these results, indicating that the accessibility and availability of necessary medical equipment and materials are closely associated with the level of NDC. A participant in the study highlighted how nurses are often responsible for managing medical equipment, and when there is a shortage, nurses may face challenges in accessing them. This can lead to frustration and anger among physicians when they are unable to obtain necessary supplies.[3]

Furthermore, malfunctioning equipment in units emerged as one of the top six factors strongly agreed upon by both nurses and physicians in the NDC factor description, in Hailu et al.'s study.[4]

Wheelock et al.'s findings demonstrated a correlation between equipment-related issues and increased stress levels and decreased teamwork, particularly among nurses.[56]

Similarly, in Etherington et al.'s study, equipment issues were identified as significant concerns for both nursing staff and surgeons, underscoring the importance of these issues in interprofessional teamwork. Participants in the study also highlighted how resource-related challenges could exacerbate tensions between professional groups. These factors, should be taken into account in intervention development to promote sustainability.[39]

This emphasizes the importance of ensuring adequate access to medical supplies and equipment to facilitate seamless communication and collaboration between nurses and doctors, ultimately enhancing patient care outcomes.

- **Shortage of staffs:**

A significant majority of our respondents, comprising 72.8% of the sample, agreed that staffing shortages pose a significant challenge to NDC. This highlights the critical role that adequate staffing levels play in facilitating effective communication and collaboration within healthcare teams.

When comparing nurses' and doctors' perceptions, nurses rated the barrier slightly higher compared to doctors. The higher rating from nurses may stem from their frontline experiences, where understaffing directly impacts their ability to communicate effectively with doctors, coordinate patient care, and address patient needs promptly.

Similarly, findings from Jemal et al.'s qualitative study align with these results, revealing that work overload and tiredness due to a shortage of professional staff contribute to ineffective NDC and reduce the quality of patient care. A participant in the study highlighted how staffing shortages lead to work overload on assigned staff, resulting in fatigue and reduced time for inter-professional communication. [3]

Furthermore, time was identified as a major factor in communication breakdown. Because nurses and physicians can be independently busy, finding time to communicate properly becomes a pressing issue. Work environments characterized by high patient acuity and staffing shortages create additional stress and thus contribute to communication breakdown. [57,58]

These findings are consistent with other studies, such as Amudha et al.'s research, where 54% of nurses reported that the shortage of staff nurses was one of the major issues. The tiredness associated with this lifestyle change had negative consequences for both nurses' well-being and quality of care of their patients. [36] Further, the shortage of nurses added stress to the working environment, echoing findings from other studies.[59–61] Additionally, organizations need to implement staff retention strategies to address workforce issues, as suggested by previous research. [59,61,62]

Addressing this barrier necessitates addressing staffing issues through strategies such as increasing staffing levels, optimizing workflow processes, and fostering interdisciplinary collaboration to alleviate work overload, reducing fatigue among healthcare professionals, and fostering effective communication and collaboration between nurses and doctors.

2. Work attitude-related personal individuals' factors:

- **Noncompliance of nurse/doctor with advice:**

Professionals may exhibit resistance or noncompliance with advice, impacting communication. For example, nurses or doctors not adhering to medical advice or treatment plans can lead to communication breakdowns. The findings of our study underscored the significant impact of this barrier on NDC, with over half of respondents (51.4%) acknowledging it as a notable challenge in healthcare settings.

In evaluating nurses' and doctors' perceptions, nurses rated it slightly lower compared to doctors. The minimal difference in scores suggests a shared understanding of the challenge, yet doctors might have placed slightly more emphasis on the impact of noncompliance on communication dynamics.

These findings align with previous research conducted by Mukeshimana et Asingizwe, who reported that the refusal of doctors to accept advice from nurses regarding patient care was a significant factor contributing to disputes between nurses and doctors.[38] These results are further supported by Porter, who highlighted in his study that through doctor's monopoly over diagnosis and prescription, doctors decided who should be a patient and what should be done to them, nurses are never consulted nor allowed to give their advice; they are limited to assisting their medical superiors, to administering drugs and to maintaining a hygienic and comfortable environment for patients.[63] Additionally, Gordon's work suggested that in some cases doctors consider nurses as less intelligent reason why they refuse to take advice from them. [64]

Conversely, the comparison with the study conducted by Jemal et al. where 45.2% of respondents agreed on this notion indicates a variation in perceptions between the two studies. our study showed a higher percentage of agreement compared to the previous study, suggesting potential differences in context, methodology, or participant demographics that might have influenced perceptions.[3]

Moreover, in a study by Chang et al. on interdisciplinary communication in the intensive care unit at the University Hospital of the West Indies, it was revealed that physicians generally found it easy to accept advice from fellow physicians, with a high percentage ranging from 90% to 100%. Conversely, nurses' perceptions varied depending on the source of advice. While 85% of nurses found it easy to accept advice from senior residents, only 63% felt the same regarding consultants and junior residents. Therefore, nurses were generally less open to receiving advice from physicians, except for senior residents, which can be attributed to their closer interaction on a daily basis. [65]

This resistance or noncompliance could stem from various factors such as differing perspectives on treatment approaches, lack of understanding or agreement with the advice given, or systemic issues within the healthcare environment. Such instances can disrupt the flow of information between healthcare professionals, impeding collaboration and potentially compromising patient care outcomes. Therefore, addressing and mitigating instances of noncompliance with advice is essential for fostering effective communication and ensuring optimal patient care delivery.

- **Abusive behavior: verbal, physical, sexual**:

The results of our study revealed important insights into the perceived impact of abusive behavior on NDC. More than half of respondents, comprising 51.4%, acknowledged abusive behavior as a substantial challenge to effective communication between healthcare professionals. This finding underscores the severity of the issue and its potential implications for patient care and professional collaboration.

Furthermore, the comparison between nurses' and doctors' perceptions highlighted an interesting disparity. while doctors also recognized the issue, nurses rated abusive behavior as a more significant barrier to effective communication. The higher rating from nurses suggests that they might have experienced or witnessed instances of verbal, physical, or sexual abuse more frequently within the healthcare environment, potentially impacting their communication dynamics with doctors.

Moreover, the discrepancy between our study's findings and those of Jemal et al. was notable. While our study showed a higher agreement percentage regarding the impact of abusive behavior on NDC, only 31.6% of respondents agreed with this notion in Jemal et al.'s study. This inconsistency may be attributed to various factors, including differences in sample demographics, healthcare settings, or methodologies employed. It highlights the complexity of understanding and addressing abusive behavior as a barrier to effective communication within healthcare teams.[3]

In line with our study, Rosenstein's study identified verbal abuse as one of the strongest reasons for respondents' discontent.[55] Furthermore, Cox's survey of nurses nationwide regarding physician abuse of nurses revealed a high rate of verbal abuse, defined as "communication that is perceived to be harsh, condemnatory attack towards the victim, either professionally or personally," and its negative consequences on nurse satisfaction, morale, productivity, and turnover.[66]

Additionally, a study published in the Journal of Professional Nursing reported that 90% of nurses witnessed at least one episode of verbal abuse during the previous year, occurring at an average rate of 6 to 12 incidents per year.[67]

Similarly, Gordon noted that some physicians rudely overrule nurses' clinical concerns and subject them to verbal abuse and humiliation. Additionally, her study revealed instances where nurses reported being humiliated, screamed at, and subjected to temper tantrums, as well as physical abuse. Shockingly, 90% of union members disclosed experiencing at least one

act of assault or aggression during their careers. Furthermore, this abuse has historically been accepted as an exercise in stress release, nurses didn't like it but they expected it, were grateful when it didn't happen, and were reluctant to complain about it. [64]

Addressing this barrier requires a zero-tolerance approach to abusive behavior, comprehensive training on respectful communication and conflict resolution, and establishing supportive mechanisms for reporting and addressing instances of abuse, thereby fostering a safe and respectful work environment conducive to effective communication and collaboration between nurses and doctors.

- **Negligence of duty by nurse/doctor:**

The findings indicated a significant concern among participants regarding negligence of duty by nurses or doctors as a potential barrier to effective NDC. Specifically, 55.7% of respondents agreed that this barrier poses a substantial challenge to communication between healthcare professionals.

In assessing nurses' and doctors' perceptions of this potential barrier, nurses rated it slightly lower compared to doctors. The difference in scores indicates a divergence in perception, with doctors potentially placing more emphasis on the impact of negligence on communication dynamics or potentially more direct consequences for doctors when communication breaks down due to negligence.

These findings align with similar studies, In Jemal et al.'s study, 59.1% of respondents agreed with the notion that negligence of duty could hinder NDC.[3] Similarly, Ogbimi et Adebamowo's study found that a significant majority of doctors (76.6%) and a slightly lower majority of nurses (65.3%) perceived this factor as affecting nurse-doctor working relationships in University Teaching Hospitals in the Southern Health Zone of Nigeria.[51]

Additionally, Mukeshimana et Asingizwe reported that lack of attention to patient by nurses was cited by more than a half of participants as a factor able to generate disharmony and misunderstandings between nurses and doctors. Further, delay of the doctor to respond the

nurse's call was also reported as the cause of disputes in their study. [38] This is consistent with other research indicating that doctors often do not respond immediately to nurses' calls, which has a negative impact on patient life in many cases. According to the same authors, doctors hate being contacted repeatedly for minor issues and expected nurses to deal with these. [7,68]

Negligence of duty can lead to breakdowns in trust, communication errors, and compromised patient care. The consistency of findings across multiple studies strengthens the argument for the importance of addressing this barrier by fostering a culture of accountability, promoting clear expectations and responsibilities, and implementing mechanisms for ongoing training and feedback to ensure that all healthcare professionals uphold their duty of care.

- **Poor attitude towards one's work by nurse/doctor:**

Our data revealed a prevalent concern among respondents regarding poor attitude towards one's work as a significant barrier to effective NDC. Specifically, 60% of participants agreed that professional's negative attitude, lack of enthusiasm or dedication to their roles poses a substantial obstacle to communication between nurses and doctors.

The comparison between nurses' and doctors' perceptions revealed a slight variation, with doctors rating this barrier marginally higher. This marginal difference in scores suggests a shared recognition of the issue, with doctors potentially placing slightly more emphasis on the impact of attitudes towards work on communication dynamics.

Similarly, Jemal et al.'s study reported a slightly lower percentage of agreement, yet still significant, with 53.6% of respondents acknowledging the hindrance posed by these poor attitudes. Moreover, one of the qualitative findings from his study highlighted the impact of professionals' performance levels on IPC between nurses and physicians during patient care. A pediatric ward head nurse noted that some of the professionals both from nurses and physicians had a gap in performing their responsibilities appropriately and had also a trend of neglecting one's duties. At this time, inter-professional conflict maybe happens. Such alike

experience could lead to ineffective NDC in patient care and this is primarily affecting the patients' safety. [3]

In addition, our study's results also parallel those of Ogbimi and Adebamowo's research, which found that a greater proportion of doctors (67.8%) compared to nurses (62.1%) perceived poor work attitude as negatively affecting nurse-doctor working relationships. [51]

Furthermore, Gordon et al.'s study provided valuable insight into the importance of self-awareness and clarity regarding professional roles in fostering effective communication and collaboration in healthcare settings. Their findings suggested that individuals who possess knowledge and understanding of themselves, coupled with a clear understanding of how their professional roles complement others in delivering high-quality care, are better equipped to comprehend the impact of their actions on interactions with colleagues. This insight supports the notion that addressing barriers such as poor work attitude requires not only recognizing its presence but also fostering a deeper understanding of its implications on IPC and patient outcomes.[69]

Poor attitudes can lead to decreased motivation, lack of engagement, and potential conflicts, all of which can hinder effective communication between nurses and doctors. Addressing this barrier requires fostering a positive work culture, providing support and resources to promote professional fulfillment, and implementing strategies for conflict resolution and team-building to enhance communication and collaboration.

- **Uncooperativeness at work by nurse/ doctor:**

The results indicated a widespread acknowledgment of the negative impact of uncooperativeness at work by nurses or doctors on teamwork and collaboration. Specifically, 64.2% of respondents agreed that such behavior poses a substantial challenge to communication between healthcare professionals.

In assessing nurses' and doctors' perceptions of this potential barrier, nurses rated it slightly higher compared to doctors. Yet, the minimal difference in scores suggests a shared

understanding of the challenge, with both groups recognizing the impact of uncooperative behavior on communication dynamics within the healthcare team.

Aligned with our findings, Jemal et al.'s study reported that 55.7% of respondents acknowledged uncooperativeness at work by physicians/nurses as a potential hindrance to NDC.[3] Additionally, Mukeshimana and Asingizwe's study highlighted a similar trend, with more than half of the participants identifying uncooperative work attitudes as a cause of disharmony between nurses and doctors. [38]

Moreover, Ogbimi and Adebamowo's findings further corroborated the significance of uncooperative attitudes at work in impacting nurse-doctor relationships. Their study revealed that a higher percentage of nurses than doctors (69.9% of nurses compared to 66.7% of doctors) perceived uncooperative attitudes as affecting nurse-doctor relationship. This disparity in perception between nurses and doctors underscores the complexity of the issue and suggests potential variations in experiences and perspectives among healthcare professionals.[51]

Furthermore, the observed uncooperativeness at work could potentially be attributed to a lack of awareness of best practices, as highlighted by Etherington et al. Their study revealed that nearly 60 % of participants in the operating room (OR) reported not being aware of any best practices for teamwork. Participants mentioned that teamwork was not emphasized during their training and that they had not experienced any structured or formulated approach to it. Instead, they often learned about teamwork on the job and from mentors, rather than through formal training. This lack of emphasis on teamwork during training may contribute to a deficiency in cooperative behaviors among healthcare professionals.[39]

These consistent findings across studies reinforces the importance of addressing this issue to promote collaborative teamwork, foster better communication and collaboration among healthcare professionals.

3. Personal behavior-related individual factors:

- **Disruptive behavior:**

The results of our study indicated a notable consensus among respondents regarding the impact of disruptive behaviors on NDC. The majority, comprising 62.2%, expressed agreement that behaviors such as disrespect, raising voice, berating colleagues and patients, and condescension significantly impede communication between nurses and doctors.

Furthermore, the analysis of nurses' and doctors' perceptions revealed that both professional groups acknowledged disruptive behaviors as a significant barrier to effective communication indicating a shared recognition of the issue. However, nurses perceived disruptive behaviors as slightly more pronounced obstacles than doctors did.

These findings align with Rosenstein et al.'s survey among 1200 healthcare professionals including nurses, physicians, and hospital executives, which revealed that 92.5% of respondents had witnessed disruptive behavior by physicians, including yelling, disrespect, condescension, and berating colleagues and patients. However, although only a small percentage of physicians were reported to exhibit disruptive behavior, both physicians and nurses agreed that it influences nurses' as well as other staff members' attitudes toward patient care and inhibits teamwork, affecting the efficiency, accuracy, safety, and outcomes of care. Disruptive behavior often led to confrontation and unease among those working closely with these physicians.[55]

Conversely, Physicians said that disruptive behavior is not unique to physicians, the implication being those nurses, too, can exhibit such behavior, and that it's important to distinguish disruptive behavior from the effort to "get things done" (that is, when physicians need to be demanding and domineering in a crisis, ensuring that tasks and procedures are completed quickly and effectively). [55]

Similarly, in Jemal et al.'s study, interestingly 47.3% of respondents agreed that disruptive behavior of physicians could hinder NDC, while 42.7% agreed that disruptive behavior of nurses could hinder this communication. This suggests that while both professionals'

disruptive behaviors are recognized as potential barriers, there is a slightly higher concern regarding the impact of physicians' behaviors.

Furthermore, the qualitative study findings of Jemal et al. highlighted the importance of professionals' attitudes and behaviors in determining the effectiveness of NDC in patient care. Nurses and physicians alike emphasized the significance of maintaining professional conduct and responding positively to challenging situations. [3]

Overall, such behaviors can erode trust, impede collaboration, and compromise patient safety. Addressing this barrier requires promoting a culture of respect, empathy, and professionalism within the healthcare environment, with proactive measures to address and mitigate instances of disruptive behavior through education, training, and appropriate disciplinary actions.

- **Unfavorable attitude towards other professions by nurses/doctors**

Our findings shed light on the significance of unfavorable attitudes towards other professions as a potential barrier to effective NDC. More than half of the respondents, comprising 52.8%, agreed that such attitudes pose a hindrance to communication between nurses and doctors. This suggests that there is a substantial acknowledgment within the healthcare community of the detrimental effects of negative perceptions and attitudes towards colleagues from different professional backgrounds.

Both professional groups rated the issue with relatively similar weighted averages, indicating a shared awareness among nurses and doctors of the negative impact of unfavorable attitudes towards other professions on communication dynamics.

Similarly, Hailu et al.'s study identified unfavorable attitude toward other professions as one of the top six factors strongly agreed upon by nurses and physicians in the NDC factor description. Moreover, in Jemal et al.'s study, 49.1% of respondents agreed that unfavorable attitudes toward other professions hinder NDC. Despite the slight variations in the reported percentages, this indicates a similar trend observed across studies, with a significant portion of

respondents recognizing the impact of negative attitudes on interprofessional communication dynamics.[3,4]

In addition, respect and trust towards the abilities of other professions are crucial aspects of effective IPC. As students undergo their professional socialization process, they need to interact with students from different professions. If they are kept in silos during their education, it is likely that they will lack understanding of the abilities of other professions as educational philosophies and ideological worldviews vary.[70,71]

This lack of understanding and appreciation for each profession's contributions to care delivery can foster negative attitudes, perpetuate stereotypical views, instill fear regarding professional integrity, and even evoke feelings of jealousy. [43,72]

Given that students arrive at their higher education institutes with preconceived views of their own and other professions, educators bear the responsibility of creating opportunities for students to meet, learn and work together so that they are not left to be educated in silos. In order to prevent negative feelings from developing and instead build a foundation for positive attitudes to form that will allow for the culture change that is sorely needed in the health and social care workforce. [73–75]

The convergence of findings across studies underscores the critical need to address unfavorable attitudes and promote positive interprofessional relationships to facilitate effective communication and improve overall healthcare delivery.

- **Inappropriate communication skills**:

The findings of our study revealed that a substantial majority of respondents, comprising 64.3%, acknowledged that issues such as inappropriate communication skills can significantly impede communication between nurses and doctors.

Nurses rated it higher compared to doctors. This indicates that nurses perceived inappropriate communication skills as a more significant barrier to effective communication between the two professional groups, with nurses potentially encountering communication

challenges more frequently or perceiving them as more impactful on their interactions with doctors.

In comparison to our findings, Jemal et al.'s study reported that 50.7% of participants agreed that unsatisfactory inter-professional communication skills can negatively affect the level of NDC. Additionally, Mukeshimana et Asingizwe found in their study that the majority of respondents identified personal skills as the main factor causing disharmony between nurses and doctors. These findings align with our study's results, indicating a prevalent acknowledgment of the significance of communication skills in shaping nurse-doctor interactions. [3,38]

In contrast to the findings of our study, Ogbimi et Adebamowo's research suggested that doctors (66.7%) were more likely than nurses (57.5%) to suggest that inadequate development of interpersonal skills plays a role in their working relationship. This discrepancy highlights potential variations in perceptions between different healthcare professionals regarding the impact of communication skills on nurse-doctor collaboration.[51]

aligning with the emphasis of our study on the need for improved communication, Lindqvist indicated in his study that professionals in the practice setting are expected to work together effectively, and in order to do this they need to use interprofessional communication skills. However, he noted a lack of training in these skills, with individuals and teams often not receiving appropriate learning opportunities to develop these vital skills.[75]

According to Etherington, learned teamwork skills can serve as valuable tools in navigating personality conflicts and managing negative emotions, thereby mitigating the impact of communication barriers. Dealing with any kind of conflict is challenging and it is a true skill to learn to manage and deal with various situations and responses when emotions are running high. Currently, students may be able to practice communication with angry or "difficult" patients, but there are less frequent examples in the literature of how to deal with challenging colleagues. [39,75,76]

Inappropriate communication skills can lead to misunderstandings, conflicts, and breakdowns in teamwork, ultimately compromising patient care. Addressing this barrier requires targeted training and education on effective communication strategies, active listening, and empathy-building exercises for both nurses and doctors. Fostering a culture of open communication and mutual respect within the healthcare team is essential for overcoming this barrier.

4. Other factors:

- **Power of authority: feeling of inferiority-superiority complex syndrome:**

The results of the study indicated that a substantial portion of respondents, comprising 58.6%, acknowledged the presence of power dynamics, often manifesting as feelings of inferiority-superiority complex syndrome, as a significant barrier to effective communication between nurses and doctors.

When examining nurses' and doctors' perceptions of this barrier, doctors rated it slightly higher. This divergence suggests differing perspectives, with doctors attributing more significance to power dynamics within the healthcare hierarchy compared to nurses.

Jemal et al.'s qualitative study revealed similar insights. Key informants highlighted inferiority-superiority complex feelings among professionals as a factor affecting NPC. For instance, a physician emphasized the impact of inter-professional conflict stemming from these complex feelings. Specifically, some physicians experience a superiority complex syndrome, while some nurses feel an inferiority complex syndrome. This highlights the importance of professionals avoiding such sentiments and instead collaborating for the benefit of patients.[3]

Historical dynamics have often placed doctors in positions of superiority and nurses in positions of inferiority. This historical context has contributed to maintaining a hierarchical relationship where nurses were expected to blindly obey doctors' orders in order to preserve harmony.[77]

Amudha et al.'s study further corroborated this, with nurses expressing feelings of being looked down upon when offering suggestions, though some are appreciated and accepted. [36] Additionally, Mukeshimana et Asingizwe's findings reveal that disputes in NDC are primarily caused by the behavior of doctors who perceived themselves as superiors. [38]

These insights highlight the persistence of power differentials within healthcare settings and emphasize the need to address these dynamics to foster effective NDC.

- Handwriting of doctors:

The findings of our study highlighted the impact of illegible handwriting by doctors as a barrier to NDC. A significant proportion of respondents, comprising 42.9% agreed that this issue poses a considerable challenge to effective communication.

When comparing nurses' and doctors' perceptions of this barrier, nurses rated it higher. This highlights nurses' frustration with deciphering doctors' handwriting, implying that nurses perceived this issue as a far more significant hindrance to effective communication than doctors themselves do.

In line with our findings, Amudha et al. reported similar observations regarding the legibility of doctors' handwriting. 50% of nurses in their study expressed difficulties with deciphering doctors' handwritten prescriptions. They described instances where seeking clarification from doctors led to retaliatory responses, with doctors redirecting them to their seniors who, sometimes, were also not sure of the written prescription.[36]

Research indicated that illegible doctors' handwriting contributes to unintentional mistakes such as medication errors. Legible handwriting is crucial for avoiding misunderstandings, reducing medical errors, and improving patient safety. However, with the implementation of electronic health records, this issue is expected to diminish in the future. Studies suggest that when nurses directly hear the physician's plan of care, the potential for misunderstanding decreases, thereby reducing the risk of errors. Nevertheless, nurses often find it challenging to understand doctors' handwriting and may feel hesitant to seek clarification, leading to potential miscommunication and errors in treatment.[57,78–80]

This calls for urgent action to address this barrier, demanding the implementation of electronic medical records, standardized documentation practices, and clear communication protocols. Nurses demand collaborative efforts to tackle handwriting issues head-on, as they rightfully advocate for improved communication effectiveness to uphold patient safety and quality of care.

- **Lack of knowledge or competency of new nurses/doctors:**

Our results highlighted the perceived impact of the lack of knowledge or competency among new nurses and doctors as a barrier to NDC. A substantial portion of respondents, comprising 45% agreed that this issue presents a significant challenge to communication.

When comparing nurses' and doctors' perceptions of this barrier, both groups indicated relatively similar views, suggesting a shared recognition among healthcare professionals of this challenge.

Amudha et al.'s study revealed significant challenges related to the lack of knowledge or competency among new nurses, contributing to barriers in NDC. Junior nurses with less than one year of clinical experience often felt treated differently by doctors compared to experienced nurses, reporting experiences of being ignored and not fitting in. Many specialists were noted to prefer working with only experienced nurses, which led to feelings of inadequacy and exclusion among junior nurses. Respondents expressed frustration at the lack of opportunities for learning and mentorship, with consultants often preferring to work with senior staff and providing limited guidance to junior nurses.[36]

These findings underscore the importance of addressing gaps in knowledge and competency through robust training programs and mentorship opportunities for new healthcare professionals. By ensuring that all team members are adequately prepared and equipped to fulfill their roles, healthcare organizations can foster a more collaborative and communicative environment

V.Analysis of factors affecting the level of NDC in patient care:

Organizational related factors had the highest percentage (53.6%) of respondents with a high score, indicating that organizational issues may play a significant role in communication barriers. Personal behavior-related individual factors followed closely behind with 52.1% of respondents scoring high, suggesting that individual behaviors also contribute substantially to communication challenges. Work attitude-related personal individual factors had a relatively balanced distribution with 49.3% of respondents scoring high, indicating a more even spread of attitudes towards work-related behaviors among respondents.

Overall, while organizational factors appeared to have the highest impact on communication barriers, personal behavior and work attitude-related factors also play significant roles. These findings suggest a complex interplay of factors contributing to communication challenges between nurses and doctors, emphasizing the need for comprehensive strategies addressing organizational, interpersonal, and individual-level factors to enhance communication and collaboration in healthcare settings.

Interestingly, Jemal et al.'s study aligns with our findings on organizational factors, reporting that 58.2% of respondents had a high score for these factors. However, there was a slight discrepancy in the results concerning work attitude-related factors. While our study found 49.3% of participants scoring high, Jemal et al.'s study reported a higher percentage, with 52% scoring high. Additionally, Jemal et al.'s study did not mention percentages for personal behavior-related individual factors; however, these factors were noted to come in the third position after organizational and work attitude-related factors. [3]

Furthermore, Hailu et al.'s study corroborated the prominence of organizational-related factors, with these factors being identified as the primary barriers to NDC. This was followed by work attitude-related individual factors and personal behavior-related individual factors, echoing the trends observed in Jemal et al.'s study.[4]

Despite some discrepancies among the studies, they collectively emphasized the intricate interplay of organizational, attitudinal, and personal behavioral factors in shaping communication dynamics between nurses and doctors, necessitating holistic approaches to address these challenges effectively.

Table XIV: Comparison of results on factors affecting NDC: Our study vs. Jemal et al.'s study

Factors affecting NDC		Our study	Jemal et al.'s study
Organizational related factors	High	53,6%	58,2%
	Low	46,4%	41,8%
Work attitude-related personal individual factors	High	49,3%	52%
	Low	50,7%	48%
Personal behavior-related individual factors	High	52,1%	----
	Low	47,9%	----

VI. Improvement strategies:

Several effective strategies have been proposed to enhance nurse-doctor collaboration and communication in healthcare settings, for meaningful change, these strategies are highly recommended to be commenced at the undergraduate level and continue into practice. [13]

1. Interprofessional education (IPE):

Our results suggested that interprofessional education between nurses and doctors was perceived as highly effective in improving collaboration by a significant majority of respondents.

IPE describes learning activities where students from different disciplines learn together. The ideas of interprofessional education dates back to the 1960s, and since then have been reinforced through several WHO policy reports: Learning Together to Work Together for Health. [81]. There are mainly two arguments that are prominent. Firstly, IPE will prepare students to

work together, which results in better IPC. Secondly, working in an interprofessional practice will lead to better health outcomes and better safe health care delivery for patients. IPE was also conceived as a means to overcome ignorance and prejudice among health and social care professions.[82]

Introducing IPE and nurse-doctor communication classes from the start of undergraduate health care education could be an important way to prevent the formation of negative interprofessional attitudes. [83] Regarding students, they tend to identify themselves with their future profession on the basis of prior knowledge and experiences at the beginning of their undergraduate health care and medical education.[84]

There is a great diversity of educational approaches and learning activities to encourage interprofessional learning especially in undergraduate health care education such as small group discussions about patient cases, large group lectures and simulations. An educational activity becoming increasingly widespread throughout the world is the arrangement of Interprofessional training wards (IPTW). Many institutions around the world have established these wards. Generally described, an IPTW is often a hospital ward where students from different fields of health care and medical education work together for two to three weeks, with the support of supervisors. The purpose of the IPTW is that the students should practice collaboration and thereby develop a greater understanding of their professional and interprofessional competencies in the team.[85,86]

2. Simulation for interprofessional training:

Our findings suggested a strong overall support for Using simulation to improve nurse-doctor communication. With no respondents rating it as the least effective option, this solution appears promising and may be considered for implementation to enhance nurse-doctor collaboration.

Simulation has been supported as a successful pedagogy for building interprofessional communication skills. Nurses, doctors, and students have expressed appreciation and value for training in the area. The propensity of evidence regarding the pedagogy of simulation has suggested it is a highly effective way to teach interprofessional communication skills and may warrant consideration as the gold standard for communication training. healthcare institutions should aim to enhance trainings with simulations. Medical schools, schools of nursing, and other professions should regularly incorporate interprofessional simulations throughout the curriculum. Simulation training should begin in the academic setting and extend to staff development to promote retention of this knowledge. Using diversified yet aligned objectives in simulation to address overarching objectives of communication and teamwork yet attend to the key patient management skills specific to each discipline.[87]

3. Interdisciplinary rounds:

Multidisciplinary rounds communication, including nurses, was perceived as highly effective in improving collaboration by a significant majority of respondents.

Because communication is best face-to-face according to the evidence, and because collaboration involves problem solving as a team, interdisciplinary rounds are an opportunity for both nurses and doctors to improve communication and collaboration. Researchers recommend having rounds on specific days and times to ensure that multiple disciplines can all be available to lead to nurses having a better understanding of a patient's plan of care.[88]

Multiple researchers have found that collaborative rounds led to improved patient outcomes, more efficient patient care, improved communication between nurses and physicians, improved perception of patient care, and allowed for greater collaboration on plan of care between nurses and physicians. [57,89]

4. Improved and structured communication tools

Our results indicated that improved and structured communication tools were perceived as a promising strategy to enhance nurse-doctor collaboration.

Studies tested communication tools as a means of sharing succinct yet comprehensive information, using templates or worksheets. [13] One study implemented Situation-Background-Assessment-Recommendation (SBAR) as a communication template and reported that this approach increased the frequency of nurse-physician communication. [35]

The study by Narasimhan et al used a different structure, a daily goals worksheet, to capture pertinent information, including the daily care goals. Both nurses and physicians reported significant improvements in nurse-physician communication when using a shared multidisciplinary goals worksheet, where patients' daily treatment goals were collectively updated.[90]

5. Workshops and seminars:

A significant majority of respondents indicated a highly positive perception of the effectiveness of workshops and seminars as a way to improve NDC.

Workshops on teamwork and other unit-specific communication building activities could also be used by units attempting to improve communication between nurses and physicians[23].

Workshops could also include conflict resolution discussions and unit-specific interventions aimed at problems assessed by staff relating to nurse and physician communication. Seminars and workshops on cultural humility, team-science, patient safety, and conflict resolution are warranted in additional to communication skills training due to the complex, multi-faceted nature of communication.[87]

6. Teamwork training

Our findings suggested that teamwork training programs were perceived as a highly effective strategy to improve nurse-doctor collaboration, indicating strong support for their implementation to enhance teamwork and communication within healthcare settings.

Effective teamwork is paramount in healthcare settings, and comprehensive team training programs play a pivotal role in fostering the essential skills required for successful collaboration. Research emphasized four core teamwork skills crucial for safe care delivery: Leadership, Mutual Support, Situation Monitoring, and Communication. Team training initiatives, exemplified by programs like TeamSTEPPS (Team Strategies and Tools to Enhance Performance and Patient Safety), aim to enhance participants' knowledge, attitudes, and skills in these fundamental areas. TeamSTEPPS, introduced by the Agency for Healthcare Research and Quality (AHRQ), provides a valuable resource kit for healthcare professionals, offering specific tools and strategies to fortify core teamwork skills. This program not only focuses on skill development but also incorporates in-depth guidance on cultural transformation within organizations. Utilizing an action planning change model, TeamSTEPPS involves assessment, planning, implementation, and sustainment phases, allowing customization of tools to address specific needs. By emphasizing these critical teamwork skills, TeamSTEPPS contributes to improving team performance and enhancing the overall quality of patient care.[91,91-93]

VII. Bivariate analysis of factors associated with nurse-doctor communication:

1. Association between the age of respondents and the level of nurse-doctor communication:

Our study suggested that younger respondents tend to report poorer communication compared to older respondents, although the difference was not statistically significant (p-value = 0.14).

This finding is in line with a study conducted in in Iran, which revealed no significant difference in perception of NDC among different age groups.[94] Conversely, it is not consistent with Jemal et al.'s study, which identified that increased age of participants was found to be an independent predictor of the level of NDC in patient care. Thus, as the age of nurses and physicians increases, the level of NDC decreased. [3] This is comparable with Hailu et al.'s study which showed that increasing age had negative relation with communication effectiveness among nurses and doctors (p = 0.001).[4] This is also echoed in a previous study conducted in Northeastern Japan among doctors, indicating that negative perception of IPC for providing patient-centered care was associated with older age.[95]

The variation observed could stem from several factors. Firstly, the predominance of younger participants in our study could contribute to this contrast. Additionally, disparities in study settings, sample size, and the professional category of participants might also play a role in shaping these differences.

2. Association between the gender of respondents and the level of nurse-doctor communication:

The results showed that while a slightly higher percentage of male respondents reported good communication compared to female, the difference was not statistically significant (p-value= 0.43). The lack of statistical significance indicates caution in drawing definitive conclusions about gender differences impacting NDC levels in our study.

our findings align with Jemal et al.'s study, which similarly found no significant association between the sex of respondents and NDC levels.[3] However, our results contrast with Hailu et al.'s study, which identified significantly higher perceived NDC in openness and sharing of patient information among females compared to males (p = 0.017).[4] This discrepancy is further supported by research conducted in Iran, which found that female nurses had a significantly higher perceived NDC compared to male nurses (P = 0.017). These differences were attributed to the more positive perceptions of female nurses towards frustration with interaction and mutual understanding relative to their male colleagues.[94]

It's worth noting that while there's a numerical distinction in communication levels between genders, this could be influenced by various factors beyond gender alone. Contextual aspects such as individual communication styles, workplace dynamics, or even cultural factors might contribute to these disparities.

3. Association between the marital status of respondents and the level of nurse-doctor communication:

Our study revealed a significant correlation between marital status and NDC levels, with married individuals more likely to report positive communication experiences compared to singles as evidenced by the calculated p-value of **0.005.**

This finding aligns with Jemal et al.'s study, which also found that a higher level of NDC occurred among ever married than single/unmarried participants.[3] This trend may be attributed to the support systems and interpersonal skills cultivated within marriage, which could positively influence communication. Besides the responsibilities and experiences associated with marital life may contribute to better communication skills in healthcare settings. However, these findings contrast with Hailu et al.'s study, which found no significant association between marital status and the perceived level of nurse-doctor communication. [4]

Further research could explore the underlying mechanisms driving this relationship and its implications for healthcare communication practices, while also considering potential cultural and demographic influences.

4. Association between the professional category of respondents and the level of nurse-doctor communication:

Our findings revealed that while there were numerical differences in communication levels between nurses and doctors, with a slightly higher proportion of doctors reporting good communication, these differences were not statistically significant (p-value = 0.36). This suggests that, despite the observed disparities, professional category alone may not be a significant predictor of NDC levels in our study.

Conversely, in Jemal et al.'s study the communication level between nurses and physicians in patient care was found to be higher among nurses than physicians.[3] This finding is in line with a study conducted in Egypt Alexandria Main University Hospital, which showed that among dimensions of nurse-physician interprofessional relationships, mean score of communication among nurses was slightly higher than among physicians.[96] Similarly, another study conducted in USA corroborates these results.[97]

On the other hand, Hailu et al demonstrated in their study that perceived communication level was less among nurses than physicians.[4] This result is consistent with studies by Chang

et al., Thomas et al., and Simpson et al., all of which indicated that physicians' communication scores were superior to those of nurses.[65,98,99]

Several factors could contribute to these findings. For instance, while nurses and doctors have distinct roles within the healthcare system, their interactions and communication patterns may be influenced by various contextual factors such as hierarchy, workload, or organizational culture. Additionally, individual communication styles and interpersonal dynamics between nurses and doctors could also play a role in shaping communication experiences.

In general, the discrepancy in the level of inter- professional communication among nurses and physicians may be the traditional trends that Physicians feel as their role is superior to that of nurses' role and this may lead to giving less concern for communication by physicians with that of nurses, and vice versa. [3]

5. Association between the organizational related factors score and the level of nurse-doctor communication:

Our findings revealed a significant relationship between respondents' scores on organizational-related factors and their reported levels of NDC. Among participants with high scores for organizational-related factors, a substantial majority reported poor communication. This suggests that individuals perceiving higher levels of organizational challenges are more likely to report poor NDC. The calculated p-value of **0.008** indicates statistical significance, underscoring the strength of the association between respondents' perceptions of organizational challenges and their experiences of NDC.

These findings suggest that addressing organizational challenges may be instrumental in improving NDC. Moreover, the statistically significant association underscores the importance of considering organizational factors when designing interventions or strategies aimed at enhancing communication between nurses and doctors.

Our results align with Jemal et al.'s study, where participants with high scores for organizational-related factors reported significantly lower levels NPC. This quantitative finding was further supported and elaborated upon by the qualitative component of the same study.[3]

Similarly, Hailu et al. also found that organizational factors negatively impacted perceived respect and satisfaction ($p = 0.02$) as well as perceived openness and sharing of patient information ($p = 0.025$) during NDC.[4]

Additionally, our findings are consistent with previous studies conducted in USA and Turkey, which similarly emphasized the influence of organizational factors on the level of NPC in patient care.[13,100,101]

Further research could delve deeper into the specific organizational challenges that impact communication and explore potential interventions to mitigate their effects. Additionally, qualitative research approaches may provide valuable insights into the lived experiences of healthcare professionals regarding organizational factors and their influence on communication dynamics. Overall, our study contributes valuable evidence to the understanding of the complex interplay between organizational context and NDC in healthcare settings.

6. Association between the work attitude-related personal individuals' factors score and the level of nurse-doctor communication:

Our findings revealed that among participants with high scores for work attitude-related factors, the majority reported poor communication. This suggests that individuals exhibiting negative work attitudes and behaviors are more likely to encounter challenges in NDC. However, the calculated p-value of 0.29 indicates that the observed association was not statistically significant.

In contrast to our findings, Jemal et al.'s study revealed that participants with high scores for work attitude-related factors experienced a significant decrease in the level of NPC in patient

care. This observation was further elucidated and supported by the qualitative component of the study.[3]

Similarly, Hailu et al.'s research corroborated these findings, demonstrating that perceived individual work attitude factors negatively impacted NDC. Specifically, they found that for each unit increase in perceived work attitude individual factors score, the perceived openness and sharing of patient information decreased by an average of 0.08 ($p = 0.037$). [4]

Moreover, these results align with other studies that have consistently highlighted the detrimental influence of individual work attitude factors on the level of NPC in patient care.[13,100,101]

A potential explanation could be that participants who report a high impact of these factors on NPC during patient care may experience a lower level of NPC themselves.[3]

These findings suggest a potential trend indicating that negative work attitudes and behaviors may influence NDC, albeit not to a statistically significant extent in our study. This indicates the need for further exploration. Future research could delve deeper into the specific dimensions of work attitudes and behaviors and their implications for communication.

7. Association between the personal behavior-related individual factors score and the level of nurse-doctor communication

Our study revealed that among participants with high scores for personal behavior-related factors, the majority reported poor communication. However, the calculated p-value of 0.46 indicates that the observed differences in NDC levels between respondents with high and low scores for personal behavior-related factors were not statistically significant.

In line with our results, Jemal et al. and Hailu et al. also indicated that personal behavior-related individual factors were scored high, suggesting an impact on NDC in patient care. However, they found no significant association between these factors score and the perceived level of NDC. [3,4]

This similarity of non-significance underscores the complexity of factors influencing communication dynamics in healthcare settings.

It's important to consider potential explanations for these findings. Additionally, future research could delve deeper into specific dimensions of personal behavior-related factors and their implications for communication, ultimately contributing to the development of interventions aimed at improving NDC effectiveness.

RECOMMENDATIONS

To enhance communication between nurses and doctors and to develop collaborative skills that can bring down professional boundaries, healthcare practitioner and students must have opportunities to spend time together, to learn, and to practice together, from and about each other in meaningful ways. The following recommendations can be implemented to improve nurse-doctor communication and interprofessional collaboration:

I. Establish and integrate interprofessional education and training programs:

- Interprofessional education is generally well received, enabling knowledge and skills necessary for collaborative working to be learnt
- Introducing IPE and communication classes from the start of undergraduate health care education to prevent the formation of negative interprofessional attitudes.
- Include both nurses and doctors in these programs to foster a collaborative mindset from the early stages of their professional development.
- Multiple educational approaches and learning activities to encourage interprofessional learning can be applied such as small group discussions about patient cases, large group lectures and simulations
- Discuss the global trend of establishing Interprofessional Training Wards (IPTW) where students from different healthcare fields collaborate for practical experience
- IPE programs should be developed by educators as well as learners who all have unique values about themselves and others.
- Authenticity and customization and staff development of IPE are important mechanisms for positive outcomes of IPE.

II. Promote simulation training for interprofessional communication:

- Schools and healthcare institutions should regularly incorporate interprofessional simulations throughout the curriculum.
- Initiate simulation training in academic settings and extend it to staff development for knowledge retention
- Using diversified yet aligned objectives in simulation to address overarching objectives of communication and teamwork yet attend to the key patient management skills specific to each discipline
- As online education is expanding, increased use of virtual simulation may also be implemented as a way to unite the disciplines for training purposes.
- Evaluate learner's communication performance in simulation with valid and reliable instruments.

III. Encourage interdisciplinary rounds:

- Facilitate face-to-face communication and promote routine interdisciplinary meetings including nurses and doctors to discuss patient cases, treatment plans, and share insights.
- Schedule rounds on specific days and times to ensure that multiple disciplines can all be available to lead to nurses having a better understanding of a patient's plan of care.

IV. Implement improved and structured communication tools:

- Define and communicate clear protocols for information exchange between nurses and doctors.
- Ensure that these protocols are easily accessible and well-understood by all healthcare professionals, contributing to streamlined communication.
- Using shared multidisciplinary goals worksheets to capture pertinent information, including the daily care goals where patients' daily treatment goals will be collectively updated by nurses and doctors
- Test templates or worksheets that promote sharing succinct and comprehensive information.
- Introduce structured communication tools, such as the Situation-Background-Assessment-Recommendation (SBAR) framework.

V.Conduct workshops and seminars:

- Organize workshops on teamwork and communication building activities.
- Include conflict resolution discussions and unit-specific interventions to address communication issues.
- Conduct seminars and workshops on interprofessional collaboration, cultural humility, team science, patient safety, and conflict resolution.

VI. Implement teamwork training programs:

- Emphasize the importance of effective teamwork through comprehensive training programs that prioritize core teamwork skills.
- Adopt established programs like TeamSTEPPS, integrating tools and strategies to enhance teamwork skills.

- Organize team-building activities that involve both nurses and doctors to foster better relationships outside of clinical settings.
- Enhance interpersonal skills and create a supportive environment that encourages collaboration and effective communication.

VII. Incorporate cultural competence training:

- Provide cultural competence training to healthcare professionals, addressing the diverse cultural context in Morocco.
- Enhance sensitivity to cultural differences, leading to improved communication and understanding among nurses and doctors.

VIII. Promote a feedback culture and conduct periodic assessments of collaboration practices:

- Establish mechanisms for feedback on communication effectiveness.
- Encourage regular feedback sessions where healthcare professionals can openly discuss communication challenges and collaboratively work towards solutions.
- Regularly assess the effectiveness of interprofessional collaboration through surveys, interviews, or focus group discussions.
- Use the feedback obtained to refine and adjust strategies for ongoing improvement.

STUDY LIMITATIONS AND STRENGTHS

I. Strengths of the study:

- The major strength of this study is that it provides research into area in which working relationship between nurses and doctors have never been explored, in Marrakech and Morocco.
- The inclusion of both nurses and physicians strengthens the study by avoiding conclusions limited to one professional group.
- Apart that these results may benefit the actual subjects, they also make a helpful contribution to the literature of nurse-doctor communication in Morocco. In addition, they help validate previous literature and studies in the field done in other areas.

II. Limitations of the study:

- Respondents often tend to answer questions in what they consider to be a socially desirable manner. besides the study might have been subjected to respondents' discussion with their colleagues that might result in social desirability bias.
- The exploration of relationships is a sensitive issue and a different methodology may produce different results. Answers received may also be reconstructions of respondent's experiences.
- The study might also be subjected to respondents' recall bias.
- The environment where this research was conducted may differ from others, leading to discrepancies in findings.
- Non-probability sampling: the sample was selected on the basis of convenience; therefore generalizability may be reduced.
- The study's sample size, may not fully represent the broader population. Future research with a larger target population and sample size is recommended for improved generalizability.

- Limited analytical research: due to a lack of existing analytical studies on nurse-doctor communication, comparative analysis was constrained and discussion was limited.
- Absence of National Studies: the absence of national studies on the topic restricted the ability to contextualize findings.

While efforts were made to mitigate these limitations through careful study design and data analysis, acknowledging these constraints is crucial for interpreting the findings accurately and for guiding future research endeavors aimed at enhancing nurse-doctor communication and ultimately improving healthcare delivery.

CONCLUSION

This survey represents a pioneering effort to address the crucial yet underexplored issue of nurse-doctor communication within the healthcare landscape of Morocco. By delving into the perceptions of communication importance, frequency, and impact, the study has provided valuable insights that can inform collaborative practices. Additionally, the assessment of current communication levels and identification of existing barriers lay the groundwork for targeted interventions aimed at fostering effective interprofessional collaboration.

Our findings resonate with the broader discourse on effective communication in healthcare, underscoring the pivotal role of nurse-doctor communication in shaping various facets of patient care. An overwhelming majority of respondents, including both nurses and doctors, emphasized the critical importance of effective nurse-doctor communication. However, a concerning revelation emerged as the majority expressed dissatisfaction with the current level of communication, revealing prevalent communication gaps within our hospital.

Furthermore, our study unveiled a multitude of barriers hindering effective nurse-doctor communication, spanning organizational constraints to personal behaviors and work attitudes. These multifaceted challenges underscore the necessity for comprehensive interventions targeting all these factors to foster a culture of open communication and collaboration.

Further analysis revealed significant associations between marital status besides respondents' scores on organizational-related factors and their reported levels of nurse-doctor communication.

The implications of our findings extend beyond our study setting, advocating for systemic reforms to mitigate communication barriers and strengthen interprofessional collaboration across healthcare institutions. By prioritizing interventions aimed at cultivating a communication-friendly environment, such as interprofessional education, simulation, implementing improved and structured communication tools, and teamwork training programs, healthcare organizations can not only enhance patient outcomes and satisfaction but also safeguard the well-being of healthcare professionals while mitigating financial risks.

Through these endeavors, our study not only addresses a significant gap in the literature but also sets a precedent for future research and initiatives aimed at optimizing communication and collaboration for the betterment of healthcare delivery in Morocco. As we navigate the complexities of modern healthcare, let us heed the lessons gleaned from this endeavor and embark on a collective journey toward a future where effective communication is the bedrock of compassionate and proficient healthcare delivery.


ABSTRACTS

Abstract

Improving quality and safety in healthcare necessitates effective communication among healthcare team members. Nurse-doctor communication, pivotal in-patient care, remains a persistent challenge, especially in developing countries like Morocco. This study addresses this gap by evaluating the current state of communication between nurses and doctors. It aims to assess perceptions of communication importance, identify barriers, and explore strategies for improvement. By shedding light on this crucial yet understudied aspect of healthcare in Morocco, this study seeks to enhance inter-professional collaboration and ultimately improve patient care.

In this descriptive analytical cross-sectional study conducted among nurses and doctors of the Pediatric Departments of Mother and Child Hospital, UHC Mohamed VI of Marrakech. Participants were selected using a random sampling technique. Data collection utilized a Likert scale self-administered questionnaire distributed both in printable and online formats. Methods involved distributing 200 manual questionnaires and online submissions, resulting in 140 valid responses. Statistical analyses used the software SPSS 23. Fisher's Exact Test used to assess associations between each independent variable and level of nurse-doctor communication, with statistical significance declared at a p-value below 0.05.

The study achieved a response rate of 47%, with an overwhelming majority of respondents (95.7%) emphasizing the critical importance of effective communication between nurses and doctors. Both groups predominantly disagreed with the notion that miscommunication between them is infrequent. The study illuminated the profound impact of poor communication on patient care and healthcare delivery, with most respondents perceiving it as affecting various aspects such as quality of care, patient safety, and healthcare cost management. A significant majority of respondents demonstrated a poor level of nurse-doctor communication (59.3%), with organizational factors identified as significant barriers. These barriers included lack of clarity in roles and responsibilities (72.9%), shortage of staff (72.8%),

among others. Personal behavior-related factors, such as inappropriate communication skills (64.3%) and disruptive behavior (62.2%), also contributed to communication challenges. Furthermore, the study found significant associations between marital status and communication levels, with married individuals more likely to report positive communication ($p = 0.005$). Additionally, individuals perceiving higher levels of organizational challenges were more likely to report poor nurse-doctor communication ($p = 0.008$).

The consistency of our findings with previous studies underscores the persistent challenges posed by negative nurse-doctor relationship in healthcare communication. This comparison highlights the relevance and reliability of our findings, as they resonate with and complement existing research in the fields.

To improve communication and foster collaborative skills, healthcare practitioners and students should engage in interprofessional education and training programs. These initiatives should begin early in undergraduate healthcare education and involve both nurses and doctors.

In this study, we explored the dynamics of nurse-doctor communication, representing a pioneering effort to address this underexplored issue within Morocco's healthcare landscape. By assessing perceptions of communication importance, frequency, and impact on healthcare aspects, valuable insights were gained to inform collaborative practices.

Résumé

L'amélioration de la qualité et de la sécurité des soins de santé passe par une communication efficace entre les membres de l'équipe soignante. La communication infirmier-médecin, reste un défi persistant, en particulier dans les pays en développement comme le Maroc. Cette étude vise à combler cette lacune en évaluant l'état actuel de la communication entre les infirmiers et les médecins. Elle vise à évaluer les perceptions de l'importance de la communication, à identifier les obstacles et à explorer les stratégies d'amélioration. En faisant la lumière sur cet aspect crucial mais peu étudié des soins de santé au Maroc, cette étude cherche à renforcer la collaboration interprofessionnelle et, en fin de compte, à améliorer les soins aux patients.

Cette étude descriptive analytique transversale a été menée auprès des infirmiers et des médecins des services pédiatriques de l'Hôpital Mère-Enfant du CHU Mohamed VI de Marrakech. Les participants ont été sélectionnés à l'aide d'une technique d'échantillonnage aléatoire simple. La collecte des données s'est faite à l'aide d'un questionnaire auto-administré à l'échelle de Likert, distribué à la fois sous forme imprimée et en ligne. Les méthodes utilisées ont consisté à distribuer 200 questionnaires manuels et à une soumission en ligne, ce qui a permis d'obtenir 140 réponses valides. Les analyses statistiques ont été effectuées à l'aide du logiciel SPSS 23. Le test exact de Fisher a été utilisé pour évaluer les associations entre chaque variable indépendante et le niveau de communication infirmier-médecin, la signification statistique étant déclarée à une valeur p inférieure à 0,05.

L'étude a obtenu un taux de réponse de 47 %, une majorité écrasante de répondants (95,7 %) soulignant l'importance cruciale d'une communication efficace entre les infirmiers et les médecins. Les deux groupes étaient majoritairement en désaccord avec l'idée que les erreurs de communication entre eux sont peu fréquentes. L'étude a mis en lumière l'impact profond d'une mauvaise communication sur les soins aux patients et la prestation des soins de santé, la plupart des personnes interrogées estimant qu'elle affecte divers aspects tels que la qualité des

soins, la sécurité des patients et la gestion des coûts des soins de santé. Une grande majorité ont fait état d'un faible niveau de communication infirmier-médecin (59,3 %), les facteurs organisationnels étant identifiés comme des obstacles importants. Ces obstacles sont notamment le manque de clarté des rôles et des responsabilités (72,9 %), le manque de personnel (72,8 %) ... Les facteurs liés au comportement personnel, tels que des compétences de communication inappropriées (64,3 %) et des comportements perturbateurs (62,2 %), ont également contribué aux difficultés de communication. En outre, l'étude a mis en évidence des associations significatives entre l'état civil et les niveaux de communication, les personnes mariées étant plus susceptibles de faire état d'expériences de communication positives que les célibataires ($p = 0,005$). En outre, les personnes percevant des niveaux plus élevés de défis organisationnels étaient plus susceptibles de faire état d'une communication médiocre ($p = 0,008$).

La cohérence de nos résultats avec ceux d'études antérieures souligne les défis persistants posés par la relation négative entre l'infirmier et le médecin dans la communication en matière de soins de santé. Cette comparaison met en évidence la pertinence et la fiabilité de nos résultats, car ils rejoignent et complètent les recherches existantes dans ce domaine.

Pour améliorer cette communication et favoriser les compétences de collaboration, les praticiens et les étudiants en soins de santé devraient s'engager dans des programmes d'éducation et de formation interprofessionnels. Ces initiatives devraient être lancées dès le début des études de premier cycle et impliquer à la fois les infirmiers et les médecins.

Dans cette étude, nous avons exploré la dynamique de la communication infirmier-médecin, ce qui représente un effort pionnier pour aborder cette question sous-explorée dans le contexte des soins de santé au Maroc. En évaluant les perceptions de l'importance, de la fréquence et de l'impact de la communication sur les aspects des soins de santé, des informations précieuses ont été obtenues pour informer les pratiques de collaboration et améliorer la qualité des soins aux patients.

ملخص

يتطلب تحسين الجودة والسلامة في مجال الرعاية الصحية التواصل الفعال بين أعضاء الفريق. لا يزال التواصل بين الممرضين والأطباء، وهو أمر محوري في رعاية المرضى، يمثل تحديًا مستمرًا، خاصة في البلدان النامية مثل المغرب. تعالج هذه الدراسة هذه الفجوة من خلال تقييم الوضع الحالي للتواصل بين الممرضين والأطباء. وتهدف إلى تقييم تصورات أهمية التواصل وتحديد العوائق واستكشاف استراتيجيات التحسين. تسعى هذه الدراسة من خلال تسليط الضوء على هذا الجانب المهم الذي لم يتم دراسته بشكل كافٍ في مجال الرعاية الصحية في المغرب، إلى تعزيز التعاون بين المهنيين وتحسين رعاية المرضى.

في هذه الدراسة التحليلية الوصفية المقطعية التي أجريت على الممرضين والأطباء في أقسام طب الأطفال في مستشفى الأم والطفل في المركز الجامعي محمد السادس بمراكش. تم اختيار المشاركين بشكل غير عشوائي واستخدم في جمع البيانات استبيانًا بمقياس ليكرت، وُزِّع بصيغتين مطبوعة وإلكترونية. وشملت الأساليب توزيع 200 استبيان يدوي وإرسالا عبر الإنترنت، مما أدى إلى جمع 140جوابا بعد فحص البيانات. استخدمت التحليلات الإحصائية برنامج SPSS 23. كما استُخدم اختبار فيشر لتقييم الارتباطات بين كل متغير مستقل ومستوى التواصل بين الممرض والطبيب، مع إعلان الدلالة الإحصائية عند قيمة p أقل من 0.05.

حققت الدراسة نسبة استجابة بلغت 47%، حيث أكدت الغالبية العظمى من المشاركين (95.7%) على الأهمية الحاسمة للتواصل الفعال بين الممرضين والأطباء. ولم تتفق المجموعتان في الغالب مع فكرة أن سوء التواصل بينهما أمر نادر الحدوث. سلطت الدراسة الضوء على التأثير العميق لسوء التواصل على رعاية المرضى وتقديم الرعاية الصحية، حيث رأى معظم المشاركين في الدراسة أنه يؤثر على جوانب مختلفة مثل جودة الرعاية وسلامة المرضى وإدارة تكاليف الرعاية الصحية. أظهرت الغالبية العظمى (59.3%) من المشاركين في الدراسة ضعفا في مستوى التواصل بين الممرضين والأطباء، مع تحديد العوامل التنظيمية كعوائق كبيرة. وشملت هذه العوائق عدم وضوح الأدوار والمسؤوليات (72.9%)، نقص الموظفين (72.8%)، وغيرها. كما أسهمت العوامل المتعلقة بالسلوك الشخصي، مثل مهارات التواصل غير الملائمة (64.3%) والسلوكيات التخريبية (62.2%) في تحديات التواصل. علاوة على ذلك، وجدت الدراسة ارتباطات كبيرة بين الحالة الاجتماعية ومستويات التواصل، حيث كان الأفراد المتزوجون أكثر عرضة للإبلاغ عن تجارب تواصل إيجابية مقارنة بالعزاب .(p = 0.005) بالإضافة إلى ذلك، كان الأفراد الذين يدركون مستويات أعلى من التحديات التنظيمية أكثر عرضة للإبلاغ عن ضعف التواصل بين الممرض والطبيب.(p = 0.008)

يؤكد اتساق النتائج التي توصلنا إليها مع الدراسات السابقة على التحديات المستمرة التي تفرضها العلاقة السلبية بين الممرض والطبيب في التواصل في مجال الرعاية الصحية. تسلط هذه المقارنة الضوء على أهمية وموثوقية النتائج التي توصلنا إليها، حيث أنها تتوافق مع البحوث الحالية في المجالات التي تؤكد على الحاجة إلى تدخلات هادفة لمعالجة عوائق التواصل بين الممرضين والأطباء وتحسين الممارسات التعاونية في أماكن الرعاية الصحية.

لتحسين التواصل وتعزيز المهارات التعاونية، يجب على ممارسي الرعاية الصحية والطلاب المشاركة في برامج التعليم والتدريب بين المهنيين. يجب أن تبدأ هذه المبادرات في مرحلة مبكرة من التعليم الجامعي للرعاية الصحية وأن تشمل الممرضين والأطباء على حد سواء. يجب تعزيز التدريب بالمحاكاة، سواء في البيئات الأكاديمية أو في تطوير الموظفين. يوصى أيضًا بتشجيع الجولات متعددة التخصصات، وتطبيق أدوات التواصل المنظم، وعقد ورش عمل حول العمل الجماعي وحل النزاعات.

في هذه الدراسة، استكشفنا ديناميكيات التواصل بين الممرضين والأطباء، وهو ما يمثل جهدًا رائدًا لمعالجة هذه القضية التي لم يتم استكشافها بشكل كافٍ في مجال الرعاية الصحية في المغرب. ومن خلال تقييم التصورات المتعلقة بأهمية التواصل وتواتره وتأثيره على جوانب الرعاية الصحية، تم اكتساب رؤى قيمة لإثراء الممارسات التعاونية ورفع جودة رعاية المرضى.

ANNEX

Questionnaire: A survey on effective communication between nurses and doctors: barriers and strategies to improve interprofessional collaboration

-Section I: Socio-demographic characteristics

- Age in years: ☐ 20-30. ☐ 31-40. ☐ >40. ☐
- Sex of respondents: Male. ☐ Female. ☐
- Marital status: ☐ Single. ☐ Married. ☐ Others. ☐
- Work experience in years: <1. 1-5. 6-10. >10.
- Department: ……
- Professional category:

-Nurse specialty……,

-Doctor. Intern. Resident. Specialist. Professor.

-Section II: importance of nurse-doctor communication

Using a scale of 1 to 5 (1=strongly disagree 5=strongly agree) rate the following propositions:

	1	2	3	4	5
Nurse-doctor communication is important in the work place					
Miscommunication between nurses and doctors is rare					

Using a scale of 01 to 05 (1=no impact. 5=significant impact) rate the impact of poor communication between nurses and doctors on the following aspects of healthcare:

	1	2	3	4	5
Quality of care and patient outcomes					
Patient safety and medical errors					
Patient death and risk of lawsuits					
Patient experience and satisfaction					
Healthcare cost management (additional costs)					
Stress level for healthcare professionals and prevention of burnout.					

Section III: level of nurse –doctor communication

Using a scale of 01 to 05 (1=never. 2=rarely. 3=sometimes 4 =usually 5=always) rate the following statements:

Statement	1= never	2= rarely	3= sometimes	4= usually,	5= always
I ask frequent clarification in understanding what nurse/doctor says.					
In the event of a change of a treatment plan for the patient, nurses and doctors have a mutual understanding of it.					
I discuss mechanisms to maintain patient safety with nurses /doctors.					
Patient discharge confirmed by the signature of both nurses and doctors.					
I have the same understanding of patient's care with nurses/doctors.					
I take int account nurses/doctors schedules when making plans to treat a patient together.					
We openly exchange information about matters related to work in patient care.					
We listen to each other during communication in patient care.					
I receive correct information from nurses/doctors on patient care.					
I consider nurse/doctor views when making decisions about patient care.					
I feel angry after nurse-doctor interaction					
I feel frustrated after nurse-doctor interaction					
I feel understood after nurse-doctor interaction					
I feel respected after nurse-doctor interaction					

I feel pleased after nurse-doctor interaction					
I feel satisfied after nurse-doctor interaction					
We have equal understanding during interaction for the patient care.					
Talking between me and doctors/nurses is joyful					
Doctors/nurses consider nurses/doctors information about the patient as relevant					

Section IV: barriers to effective communication between nurses and doctors

Using a scale of 1 to 5 (1=strongly disagree. 5= strongly agree) rate the following potential barriers to effective nurse-doctor communication:

1- Organizational related factors:	1	2	3	4	5
Disorganized hospital management system					
Lack of shared vision between nurses and doctors					
Lack of clarity in roles and responsibilities by nurses /doctors.					
Hierarchy and conflicting orders of doctors					
Differential treatment of professionals					
Absence of communication forum between nurses and doctors					
Lack of medical supplies and equipment					
Shortage of staffs					
2-Individual related factors:	1	2	3	4	5
Disruptive behavior: disrespect, raising voice, berating colleagues and patients, condescension or patronizing					
Abusive behavior: verbal, physical, sexual.					
Handwriting of doctors					
Poor attitude towards one's work by nurse/doctor					
Uncooperativeness at work by nurse/ doctor.					
Negligence of duty by nurse/doctor.					
Noncompliance o nurse/doctor with advice					
Inappropriate communication skills (not listening,					

interrupting….)					
Power of authority: feeling of inferiority-superiority complex syndrome					
lack of knowledge or competency of new nurses/doctors					
Unfavorable attitude towards other professions by nurses/doctors.					

Section V: strategies to improve nurse-doctor collaboration.

On a scale of 1 to 5 (1= least effective 5= most effective) rate the following theoretical solutions to improve nurse-doctor collaboration:

Theoretical solutions	1	2	3	4	5
Required nurse-doctor communication classes for students entering the medical field at an under graduated level					
Using simulation for training and uniting the two professions					
Multidisciplinary rounds communication including nurses					
Improved and structured communication tools					
Workshops and seminars					
Interprofessional education between nurses and doctors					
Teamwork training programs					
Having therapy sessions open to nurses and doctors to relay concerns in confidence					

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أ ْقسم ِبالله العظيم

أن أراقب الله في مهنتي

وأن أصون حياة الإنسان في كافة أطوارها، في كل الظروف والأحوال باذلة وسعي في إنقاذها من الهلاك والمرض والألم والقلق .وأن أحفظ للناس كرامتهم، وأستر عورتهم، وأكتم سرهم .وأن أكون على الدوام من وسائل رحمة الله، باذلة رعايتي الطبيّة للقريب والبعيد، للصالح والطالح، والصديق والعدو. وأن أثابر على طلب العلم، وأسخره لنفع الإنسان لا لأذاه .وأن أوقر من علّمني، وأعلم من يصغرني، وأكون أختا لكل زميل في المهنة الطبيّة متعاونين على البر والتقوى .وأن تكون حياتي مصداق إيماني في سري وعلا نيتي، نقية م ّما يشينها تجاه الله ورسوله والمؤمنين.

والله على ما أقول شهيد

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سنة 2024 أطروحة رقم 215

التواصل الفعال بين المُمرضين والأطباء: العوائق واستراتيجيات تحسين التعاون بين المهنيين

الأطروحة

قدمت ونوقشت علانية يوم **2024/05/28**

من طرف

السيدة فاطمة الزهراء البداوي

المزدادة في 03 فبراير 1998

لنيل شهادة الدكتوراه في الطب

الكلمات الأساسية:

الممرض-الطبيب-التواصل-مستوى-عوائق- التعاون المهني- استراتيجيات التحسين.

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