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29 September 2023 03:45

TABLE OF CONTENTS

Search Strategy..... iii

1. Healthcare Workers' SARS-CoV-2 Infections in Four Hospital Outbreaks during Delta Variant Prevalence in Sydney, Australia..... 1

2. Professional Values of Undergraduate Students at a Nursing School in South Africa..... 11

3. Nurses' Perceptions on How Recovery-Oriented Mental Health Care Can Be Developed and Implemented..... 20

4. The Relationship between Bullying and Emotional State among Undergraduate Nursing Students: A Cross-Sectional Correlation Study..... 35

5. Midwives' and Diabetes Nurses' Experience of Screening and Care of Women with Gestational Diabetes Mellitus: A Qualitative Interview Study..... 37

6. Psychosocial Problems among Psychiatric Nurses for Caring Patients with Mental Disorders during the COVID-19 Pandemic..... 51

7. The Relationship between Metacognitive Beliefs with Clinical Belongingness and Resilience among Novice Nurses in Neonatal Intensive Care Units..... 65

8. Psychometric Evaluation of the Postoperative Recovery Profile..... 74

9. Discharge against Medical Advice at a Teaching Hospital in Ghana..... 88

10. Investigation of Caring Behavior and Caring Burden and Their Associated Factors among Nurses Who Cared for Patients with COVID-19 in East Guilan, the North of Iran..... 97

11. Violence against Emergency Nurses in Kermanshah-Iran: Prevalence and Associated Factors..... 99

12. The Effects of Education Based on the Nursing Process on Ostomy Self-Care Knowledge and Performance of Elderly Patients with Surgical Stoma..... 112

Bibliography..... 124

SEARCH STRATEGY

Set No.	Searched for	Databases	Results
S4	Journal of Nursing	Ebook Central, Public Health Database, Publicly Available Content Database	298838*
S3	Nursing	Ebook Central, Public Health Database, Publicly Available Content Database	580571*
S2	Nursing and Health Sciences	Ebook Central, Public Health Database, Publicly Available Content Database	251311*
S1	Manipal Journal of Nursing and Health Sciences	Ebook Central, Public Health Database, Publicly Available Content Database	415°

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Healthcare Workers' SARS-CoV-2 Infections in Four Hospital Outbreaks during Delta Variant Prevalence in Sydney, Australia

Hutchinson, Danielle [1]
; Mohana Kunasekaran [1]
; Stone, Haley [1]
; Chen, Xin [1]
; Quigley, Ashley [1]
; Aye Moa [1]
; C Raina MacIntyre [2]

[1] Biosecurity Program, The Kirby Institute, Faculty of Medicine, University of New South Wales, Sydney, NSW 2052, Australia [2] Biosecurity Program, The Kirby Institute, Faculty of Medicine, University of New South Wales, Sydney, NSW 2052, Australia; College of Public Service &Community Solutions, Arizona State University, Tempe, AZ 85004, USA

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ABSTRACT (ENGLISH)

Background. Healthcare workers (HCWs) are at risk of SARS-CoV-2 infections due to occupational exposure. The use of airborne personal protective equipment (PPE) significantly reduces this risk. In June 2021, an epidemic of the Delta variant began in New South Wales (NSW), Australia. Concurrent PPE guidelines, set by the Clinical Excellence Commission (CEC), restricted the use of respirators. *Objective*. To understand the relationship of PPE guidelines with workplace-acquired HCW SARS-CoV-2 infections in different clinical settings and to examine the relationship between rates of community transmission and workplace-acquired HCW infections during the Delta outbreak in NSW. *Methods*. Total SARS-CoV-2 HCW infections between 13 June and 30 October 2021 (first four months of the Delta wave) were estimated from the government COVID-19 surveillance reports and compared with the surveillance reports of community transmission. In the absence of a detailed reporting of HCW infections, open-source data including news articles, media releases, and epidemiological surveillance reports were also collected. Data were extracted on HCW cases of SARS-CoV-2 from four hospitals, including the number of HCW cases (per NSW Health definition), clinical setting, PPE guidelines, and evidence of increasing local transmission. *Results*. SARS-CoV-2 infections in HCW identified as workplace-acquired infections ($n=177$) and those without a known transmission source ($n=532$) increased during the period of increasing community transmission ($n=75{,}014$) in NSW. Four hospital COVID-19 clusters affecting 20 HCWs were identified between June and October 2021. HCW clusters occurred in general wards where staff were recommended to wear surgical masks. No workplace-acquired HCW infections were reported in these hospitals from critical care wards, where respirators were recommended during the same outbreak weeks. *Conclusions*. Differences in PPE policy across different wards may leave healthcare staff at risk of SARS-CoV-2 infection. During periods of high community transmission, respirators should be provided to protect hospital staff. Formal reporting of HCW infections should occur.

FULL TEXT

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1. Introduction

Since the emergence of COVID-19, the disease caused by the SARS-CoV-2 virus, in December 2019, more than 495 million cases have been confirmed globally [1]. In New South Wales (NSW), Australia, an epidemic of the Delta variant in Sydney, Australia, began in June 2021 and spread to all regions of NSW [2]. Healthcare workers (HCWs) are at higher risk of contracting COVID-19 due to occupational exposure and may have not have had access to adequate personal protective equipment (PPE) early in the pandemic due to the denial of airborne transmission of the virus [3].

The World Health Organization (WHO) has identified HCWs as a group at increased risk of becoming infected with SARS-CoV-2 due to the increased likelihood of exposure through contact with people infected with the virus [4]. This risk increases with increasing levels of community transmission [4]. In September 2021, WHO estimated HCW deaths due to COVID-19 between 80,000 and 180,000 globally, with a likely estimate of 115,500 deaths [4]. In the Australian context, it has been shown that HCWs have up to three times the risk of infection compared with the general population, and there have been multiple hospital outbreaks throughout the pandemic [5]. During the first six months of the pandemic, the rate of HCW infection was 90/100,000, the overall population infection was 34/100,000, and HCWs comprised of an estimated 6.03% of all reported infections [5]. In the Australian state of Victoria, over 4000 health and aged care workers became infected in 2020, with at least 69 percent of infections acquired at the workplace [6].

Transmission of SARS-CoV-2 is airborne [7]. In performing routine care with prolonged patient contact and working within a contaminated indoor environment, HCWs are at risk of COVID-19 exposure in the workplace [8]. HCWs may then cause ongoing transmission to their coworkers, patients, their families, and community members [8]. The use of masks and respirators, has been shown to significantly lower the rate of COVID-19 infection among HCWs [9].

The NSW Department of Health policy regarding the use of PPE is informed by the guidelines set by the Clinical Excellence Commission (CEC) [10]. During the COVID-19 pandemic, HCWs have been required to use “contact and airborne precautions” (P2/N95 respirator and eye protection) when providing care to patients with confirmed or suspected COVID-19, or if determined a close contact by the Public Health Unit (PHU) [10]. At the start of the Delta outbreak (version 1.1 of guidelines [10]), staff working in the critical care wards, including emergency departments, intensive care units, and designated COVID-19 wards, were required to use respiratory PPE, while staff working in other clinical areas (noncritical care) were required to wear surgical masks when performing patient care during periods of moderate community transmission [10]. These guidelines do not account for the presence of asymptomatic infection among staff and patients. Furthermore, restrictive guidelines and shortages of respirators in the NSW hospital system led to some frontline HCWs to use surgical masks or PPE that had not been fit-tested [11]. In NSW, there is no formal reporting of HCW infections. Therefore, in this study, media articles and other publicly available data were searched for reports of hospital outbreaks.

1.1. Objective

The objective of this study is twofold: first, to investigate the relationship between PPE guidelines and workplace-acquired HCW SARS-CoV-2 infections at different clinical settings within hospitals, in the absence of a formal reporting of HCW infections; and second, to examine the correlation between rates of community transmission and HCW infections.

2. Methods

2.1. Data Collection

In the absence of formal, public reporting of workplace-acquired HCW infections in NSW, open-source data can provide valuable information on workplace outbreaks, although it may be limited with regard to completeness of case information [5].

We searched for open-source reports of HCW clusters of SARS-CoV-2 infections in hospitals in NSW, Australia, between 13 June 2021 (the start of the epidemiological week in which the first case of Delta variant of SARS-CoV-2 was reported in NSW [12]) and 30 October 2021.

We conducted a study with a retrospective comparative analysis using open-source data to identify HCW clusters in

the Delta variant epidemic in NSW in 2021. In addition, we compared the PPE policy implementation across the affected and nonaffected wards in the same hospitals.

2.1.1. Identifying HCW Infections in NSW

Total SARS-CoV-2 HCW infections between 13 June 2021 and 30 October 2021 were collated using information from the State COVID-19 surveillance reports (Table 1) [8, 12–14]. In NSW surveillance reports, HCWs were defined as medical and nursing staff, administrative and support staff, paramedics, laboratory technicians, pharmacists, and cleaners [2]. For this study, this definition is maintained. The state PHU designates the source of HCW infections following a case investigation [6]. Attribution to workplace acquisition of SARS-CoV-2 may be difficult in periods of high levels of community transmission; therefore, both “possible” and “unknown” cases (Table 1) have been included in Figure 1.

Table 1

NSW HCW SARS-CoV-2 infections by attributed source (13 June 2021 to 30 Oct, 2021) [8, 12–14].

Reporting period	13 June 2021 to 30 October, 2021 (epidemiological weeks 25–43)
Dominant strain	Delta
Vaccination	High rates of vaccination among HCW
Workplace-acquired cases*	177
Community-acquired cases*	181
Unknown source*	532
Total HCW with COVID-19	890
Total cases with COVID-19 in NSW	75,014

*As assessed by NSW Health. Criteria for attributing place of infection not available.

[figure(s) omitted; refer to PDF]

2.1.2. Identifying HCW Workplace Outbreaks in NSW during the Delta Epidemic

Open-source data were collected for NSW, Australia, including media articles, hospital and state government media releases, and state government epidemiological surveillance reports, and were reviewed to identify workplace-acquired HCW infections between 13 June and 30 October 2021. The cohort study data collection began on 15 August 2021 and continued through 30 October 2021. A line list of reported positive cases was created with information including infection source, date of reported case, location including specific wards, policies relating to PPE, and vaccination coverage (see Table S1 in appendix). No identifying information was available or recorded. A Google search was conducted using the following keywords: (healthcare worker OR nurse OR hospital personnel) AND (NSW OR Sydney) AND (COVID-19 OR COVID OR coronavirus OR Delta OR SARS-CoV-2) AND (hospital OR ward) AND (outbreak OR cluster). The first six pages of each Google search were reviewed.

2.2. Inclusion and Exclusion Criteria for HCW Clusters

HCW clusters were defined as two or more cases of COVID-19 in the same healthcare facility within one week (Table 2). Critical care wards are defined as emergency departments, intensive care units, and designated COVID-19 wards, and noncritical care wards are defined as other wards providing clinical inpatient care.

Table 2

Inclusion and exclusion criteria and results.

Inclusion criteria	Included HCW clusters
Two or more HCWs in the same cluster were infected within a one-week period. Complete information about the hospital, the number of HCW infected with documented transmission occurring at the workplace, dates, and the ward type, in the week/s following an increase in community transmission, determined by the designation of LGA of concern	Hospital A ($n=7$)Hospital B ($n=2$)Hospital C ($n=8$)Hospital D ($n=3$)
–	
Exclusion criteria	*Excluded*
–	
No information about workplace transmission, less than 2 HCW infected, and no information about ward type	Hospital E: 24 patients and five staff members were infected across six separate wards ($n=5$) in an epidemiological week. No information about workplace transmission [15]Hospital F: one patient and one HCW ($n=1$) [16]

HCW clusters were included if complete information was available about the hospital, the number of HCWs infected with documented transmission occurring at the workplace, dates, and the ward type (Table 2). The PPE policy was as per the CEC guidelines unless otherwise stated by the hospital. Vaccination coverage was obtained by open-source media reports or hospital press releases. To establish an increased likelihood of HCW exposure to COVID-19 across all wards (including emergency department presentations), a criterion for inclusion was that the cluster occurred in the week/s following a documented increase in community transmission (Table 2). This was determined by the designation of local government areas (LGAs) of concern or suburbs of concern by the NSW Department of Health, through manual search of the daily NSW Health media releases and the weekly epidemiological reports [12, 17]. NSW Health used COVID-19 case data, vaccination coverage, and movement trends in the local area to determine LGAs of concern [18]. Inclusion and exclusion criteria and the results are shown in Table 2.

2.3. Data Analysis

Analysis and reporting were performed by using Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for epidemiological studies [19]. Data collected for analysis focused on the HCW in four tertiary care hospitals located in Sydney during the Delta epidemic in 2021. The four hospitals were selected due to well-reported outbreaks among health workers, including publicly available details on the type of wards involved.

A descriptive analysis was conducted, and case counts were compared between noncritical care wards and critical care wards within the same hospital over the same period.

Total SARS-CoV-2 community and HCWs confirmed infections between 13 June 2021 and 30 October 2021 were collated using information from the state and commonwealth COVID-19 surveillance reports.

3. Results

3.1. HCW Infections in NSW

Total SARS-CoV-2 HCW infections between 13 June 2021 and 30 October 2021 are shown in Table 1 [8, 12–14]. There were 890 cases in HCW in that period. The source of HCW infections is designated by the state PHU following case investigation, without further information about how the source was ascertained [6]. The majority of HCW infections ($n=532$) were classified as “unknown source,” followed by community-acquired cases ($n=181$) and

workplace-acquired cases ($n=177$) [8, 12–14].

During epidemic periods, HCWs in NSW have had an increase in workplace-acquired infections (Figure 1). There had been 890 healthcare workers diagnosed with COVID-19 in the Delta outbreak by 30 October 2021 (epidemiological week 43), and of those, 42.1% ($n=375$) were vaccinated with two doses of COVID-19 vaccine, 11.3% ($n=101$) had received one dose, and 46.5% ($n=414$) were unvaccinated [2]. The overall vaccination rate of HCWs in Sydney metropolitan hospitals as of 31 August 2021 was recorded as follows: 81% of HCWs had received two doses and 5% had received one dose [20].

[figure(s) omitted; refer to PDF]

3.2. HCW Workplace Outbreaks in NSW during Delta Epidemic

We identified six HCW outbreaks involving 25 infected HCWs, of which four met the inclusion criteria [21–27]. Table 3 shows that HCW outbreaks corresponded with the increasing community transmission by the local government area (LGA) [12, 28]. Vaccination rates were high compared to the community [20, 26, 29, 30]. The wards associated with the HCW clusters were general and noncritical care wards, including acute aged care, neurology, oncology, and orthopedic [21–27]. HCWs used surgical masks for patient care episodes on the affected wards, as per the CEC guidelines. Across the same weeks, there were no clusters identified in critical care wards (ICU and emergency), where HCWs were provided respirator masks for patient care [21–27].

Table 3

Summary of HCW clusters in NSW during Delta epidemic 2021 (epidemiological weeks 24–43).

HCW cluster	Hospital A	Hospital B	Hospital C	Hospital D
Local area identified as increasing community transmission*	18 July 2021	28 July 2021	8 August 2021	7 September 2021
Outbreak date	23–30 July 2021*epidemiological week 31*	13–20 August 2021*epidemiological week 33*	14–21 August 2021*epidemiological week 33*	9 September 2021*epidemiological week 36*
Vaccination rate	>50%	Approx. 80%	70%	92%
Wards associated with cluster	Acute aged care, neurology (29 patients)	Oncology (6 inpatients)	Oncology, orthopedic	Acute aged care
–				
Number of HCW with workplace-acquired SARS-CoV-2 infection				
Noncritical care wards	7	2	8	3
Critical care wards	0	0	0	0
–				
PPE policy in place at the commencement of the outbreak				

Noncritical care wards	Surgical masks for patient care (as per CEC guidelines)	Surgical masks for patient care (as per CEC guidelines)	Surgical masks for patient care (as per CEC guidelines)	Surgical masks for patient care (as per CEC guidelines)
Critical care wards (ED, ICU, and COVID-19 wards)	Contact and airborne precautions (respirator mask)	Contact and airborne precautions (respirator mask)	Contact and airborne precautions (respirator mask)	Contact and airborne precautions (respirator mask)

∗Determined by NSW department of health.

3.2.1. Hospital A 23–30 July 2021 (Epidemiological Week 31)

The hospital A cluster was reported on 24 July with the index case of a partially vaccinated nurse who worked across two wards whilst infectious, neurology and geriatrics [31]. During the week from 23 July to 30 July 2021 (epidemiological week 31), there were seven workplace-acquired infections among HCWs in these two wards [22, 23]. During the same period, there were no HCW infections in critical care wards [23], despite the likely exposure to COVID-19-positive patients due to the increasing community transmission. The relevant LGA was designated an LGA of concern from 18 July 2021 due to the rising community transmission [12]. Following this outbreak, all clinical staffs were required to wear full respiratory PPE [22]. At the time of the hospital A cluster, the vaccination rates for the staff were greater than 50% [29].

3.2.2. Hospital B 13–20 August 2021 (Epidemiological Week 33)

The hospital B cluster was reported on 14 August, with the index case of an oncology patient who tested positive on 13 August [25]. Subsequently, five other oncology patients and two staff members were tested positive [25]. The staff members, a nursing unit manager and a junior medical officer, were both fully vaccinated [25]. During the same period, there were no reported HCW infections on critical care wards [20]. The surrounding area was designated an LGA of concern on 28 July 2021, due to the rising community transmission [32]. While vaccination rates were unable to be sourced for the relevant epidemiological week, it was documented on 31 August 2021 that across all Sydney metropolitan hospitals, staff vaccination rates were 81% fully vaccinated (two doses) and 5% partial vaccination (one dose) [20].

3.2.3. Hospital C 14–21 August 2021 (Epidemiological Week 33)

The hospital C cluster was reported on 14 August, with an unknown index case. The first four cases of staff members in this cluster who tested positive for workplace-acquired COVID-19 were reported on 14 August [21]. During the week of 14–21 August (epidemiological week 33), eight HCWs were infected across the oncology and orthopedic wards; however, no HCW infections were reported in the critical care wards in the hospital [15, 21, 26]. The surrounding area was designated an LGA of concern from 8 August [33]. Following the outbreak, the hospital C required all staff to use respiratory protection during clinical interactions [21, 27]. Staff vaccination rates at hospital C were reported to be 70% at the time [26].

3.2.4. Hospital D 9 September 2021 (Epidemiological Week 36)

The hospital D cluster was reported on 9 September, when two patients and three nurses tested positive in the geriatric ward [24]. Following this outbreak, staff were required to increase PPE levels for safety purposes [24], and no further cases were reported. During the same period of increasing community transmission in the surrounding area [28], there were no workplace-acquired infections reported in the critical care wards of hospital D. Staff vaccination coverage was 92% at the relevant time [30].

4. Discussion

There is variable public reporting of HCW infections due to workplace exposure to SARS-CoV-2. Due to this, we utilized open-source data to extract more detailed information on workplace outbreaks [5]. There were 171 HCW infections attributed to workplace-acquired sources by NSW Health, and this study examines outbreaks involving 20 of those cases. This is a descriptive study; therefore, while associations may be drawn, positive correlations with statistical significance have not been established.

We have shown that differences in PPE policy across different wards may contribute to healthcare staff risk of SARS-CoV-2 infection. The guidelines in operation during the study period recommended airborne precautions in critical care wards and no workplace-acquired infections in these settings were reported in open-source media or publicly available reports. In contrast, reported outbreaks occurred in general wards (geriatric, neurology, oncology, and orthopedics) where surgical masks were recommended during the same periods of high community transmission. Exposure of HCWs in emergency departments, intensive care units, and COVID-19 wards was likely, due to the high levels of community transmission; however, there were no HCW clusters reported in open-source media or publicly available reports in these clinical areas during that time. The guidelines used in NSW assumed that airborne transmission only occurs in selected situations such as aerosol-generating procedures; however, SARS-CoV-2 is airborne [7]. Approximately 35% of infections present as asymptomatic [34], and in addition, the presymptomatic stage of infection is highly contagious [35]; therefore, in times of increasing community transmission, precautionary PPE should be available. With a high rate of hospital staff vaccination in the Sydney metropolitan area, it is possible that the differences seen in this study could be attributed to differences in the types of PPE used in the differing clinical areas.

Australian HCWs are up to three times more likely to have SARS-CoV-2 infection than the general population [5, 6]. The Victorian second wave in 2020 reported that 63.4% of cases were acquired in a healthcare setting, 19.3% in the community, and 17.3% were unable to be determined [6]. In NSW, there was less information about attribution and almost half were classified as “unknown” sources. This suggests a potential attribution bias, which may function to minimize the true picture of workplace transmission in NSW hospital settings, and could underestimate the impact of inadequate use of PPE.

There were high rates of HCW vaccination in NSW, in part due to eligibility, and also as a public health order mandating COVID-19 vaccination at least one dose of a COVID-19 vaccine by 30 September 2021 and both doses by 30 November 2021, as a condition of employment [36]. At the time, two doses of the COVID-19 vaccine were considered “fully vaccinated.” By 31 August 2021, staff in metropolitan hospitals in Sydney had a vaccination rate of 81% vaccinated with two doses and 5% partial vaccination (one dose) [20]. However, it has been shown in other locations that even in highly vaccinated healthcare workforce, vaccine effectiveness decreases over time, in part due to characteristics of the circulating variant and in part due to waning immunity [37]. Vaccination should not be the only focus of COVID-19 control in high-risk settings such as hospitals, and respirators should be prioritized to protect HCW [37].

The WHO formally acknowledged that SARS-CoV-2 was spread through airborne transmission in May 2021 [7]. During times of increasing community transmission, HCWs are at a higher risk of acquiring workplace infections [5]. Changes in guidelines governing the provision of PPE can be expected to follow. In June 2021, the Infection Control Expert Group (ICEG) published national guidelines for the use of face masks by HCW in Australia [38]. The guidelines stated that respirator and eye protection should be used if the patient was known or suspected to be COVID-19 positive, if there was a current transmission in the community (especially if there were unlinked cases), if the duration of care was prolonged or at close proximity if there were other transmission risk factors such as the patient coughing or shouting, or if there was inadequate ventilation or sudden air movements (including a door opening or closing) [38].

The Clinical Excellence Commission in NSW updated the infection control and PPE guidelines on several occasions in 2021; however, the recommendations regarding the use of N95/P2 respirators did not change [10]. Therefore, it remained in the NSW hospital system that airborne protection (the use of N95 and eye protection) was to be used with patients with suspected or confirmed COVID-19 or close contact with COVID-19 cases as determined by the PHU [10].

These guidelines may not have been sufficient to protect HCWs in noncritical care wards during the pandemic [11]. Following the HCW clusters and severe staffing shortages, the relevant local health districts (LHDs) moved independently to require their workforce to wear PPE during all clinical interactions, overriding the CEC guidelines [21, 22, 24, 27]. Burnout, illness, and mass furloughing have created severe health workforce shortages during the

pandemic. Therefore, there is a benefit beyond the protection of the individual to mitigating the airborne transmission of SARS-CoV-2 in healthcare facilities.

5. Limitations

The lack of formal reporting on health worker infections necessitated the use of open-source data for this study. Although the number of HCW cases was provided in Health bulletins, other information was not available, and the attribution of the source of infection was not described, with the majority of cases classed as “unknown.” Compliance with the outbreak measures by HCWs was also assumed and it is unknown what strategies were employed to measure it. The quantitative measure of compliance rates and qualitative data on the reasons for compliance with infection control measures could provide more depth to our understanding of the transmission of the SARS-CoV-2 virus among HCWs in a tertiary hospital setting. Further limitations to the study include the use of open-source data, including media articles, government reports, and documents, which may vary in completeness of case information and impact validity. The quality of the data used may be further improved by verification of the open-source data by hospital authorities or formal reports being issued, similar to the state of Victoria. This study conducted a descriptive analysis by comparing case counts of workplace-acquired HCW SARS-CoV-2 infections in noncritical care wards and critical care wards within the same hospital over the same period, as well as investigating HCW infections at times of increasing community transmission. While the variables under study (lack of policy requirement to use respirators in the work environment and workplace-acquired infection and community transmission and HCW infections) appear to have a relationship, no statistical analysis was performed, and therefore, a positive correlation between the variables cannot be concluded.

6. Conclusions

In this descriptive study, we analysed four hospital outbreaks affecting 20 HCWs during the Delta wave of SARS-CoV-2 in Sydney, Australia. All the identified HCW clusters were in general wards who utilized surgical masks as PPE. Differences in PPE policy across different wards may leave healthcare staff at a disproportionate risk of SARS-CoV-2 infection. All hospital HCWs should be provided with respirators during periods of increasing community transmission of SARS-CoV-2. To meet work health and safety obligations toward HCW, healthcare-acquired infections should be reported.

Authors’ Contributions

Danielle Hutchinson wrote the original draft, conceptualised the study, proposed the methodology, and performed the formal analysis. Mohana Kunasekaran and Haley Stone reviewed and edited the manuscript, proposed the methodology, and performed the formal analysis. Xin Chen reviewed and edited the manuscript and proposed the methodology. Ashley Quigley reviewed and edited the manuscript and performed the formal analysis. Aye Moa reviewed and edited the manuscript, supervised the study, and proposed the methodology. C Raina MacIntyre conceptualised the study, reviewed and edited the manuscript, and supervised the study.

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DETAILS

Subject:	Infections; Patients; Emergency medical care; Health surveillance; Workers; COVID-19 vaccines; State government; Personal protective equipment; Severe acute respiratory syndrome coronavirus 2; Epidemiology; Pandemics; Medical personnel; Epidemics; Hospitals; Data collection; Community; Immunization; Intensive care; Critical care; Masks; Disease transmission
Business indexing term:	Subject: Workers
Location:	Australia; Sydney New South Wales Australia
Editor:	Judie Arulappan
Publication title:	Nursing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023
Publisher:	Hindawi Limited
Place of publication:	New York
Country of publication:	United Kingdom, New York
Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437
Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article
Publication history :	
Milestone dates:	2022-05-05 (Received); 2023-07-07 (Revised); 2023-08-29 (Accepted); 2023-09-14 (Pub)
DOI:	https://doi.org/10.1155/2023/1806909

ProQuest document ID:	2867834412
Document URL:	https://www.proquest.com/scholarly-journals/healthcare-workers-sars-cov-2-infections-four/docview/2867834412/se-2?accountid=211160
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Last updated:	2023-09-25
Database:	Publicly Available Content Database

Document 2 of 12

Professional Values of Undergraduate Students at a Nursing School in South Africa

Bimray, Portia [1]
; Chipps, Jennifer [1]
; Ticha, Victoire [1]
[1] School of Nursing, Faculty of Community and Health Sciences, University of the Western Cape, 14 Blanckenberg Street, Bellville, South Africa

ProQuest document link

ABSTRACT (ENGLISH)

Background. Nursing schools play an important role in instilling nursing professional values in undergraduate nursing students and ensuring that they produce professional nurse graduates. Several studies in various countries have been conducted to describe the professional values held by nursing students, but this has not been explored in detail in South Africa. *Aim*. The purpose of this study was to describe the professional values held by undergraduate degree students at a nursing school in South Africa. *Methods*. A cross-sectional survey using a self-administered questionnaire was conducted. With a population of 1,233 undergraduate nursing students across four years in the degree programme at the nursing school, a sample of 294 was calculated as the representative (95% CI, 5% error, and 50% response distribution). The 26-item nurses professional values scale revision (NPVS-R) with five value dimensions was used to collect the data. Means, frequencies, and confidence intervals were used to describe the values and Mann–Whitney *U* tests and Kruskal–Wallis independent sample tests were used to compare the findings with the demographic characteristics. *Results*. A total number of 245 respondents completed the questionnaire (response rate of 83.3%). Overall, the nurse professional value score was high (113.1 ± 13.1). The values of trust (4.46 ± 0.61), justice (4.39 ± 0.57), and caring (4.38 ± 0.55) were rated significantly higher than those of professionalism (4.23 ± 0.64) and activism (4.22 ± 0.57). First- and final-year students had significantly higher professional value scores. *Conclusion*. The study results describe the professional values of undergraduate nursing students in the school and confirmed the importance of trust, justice, and caring as the key professional values in the

South African setting. *Clinical Relevance*. Nursing education should embed and monitor nursing professional values in the curriculum. Instilling nursing professional values in undergraduate nurses during formal training programmes improves quality patient care and service delivery for clinical practice.

FULL TEXT

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1. Introduction

Professional nursing values are the foundation of daily nursing care practice [1] and a corner stone in the selection and training of future nurses [2, 3]. To ensure quality ethical nursing care [4, 5], these values serve as a guideline for their professional behavior [6]. These values reflect the integrity and professional identity of the nurse and reinforce performance in practice [6]. As a new nursing student, it is important for students to start the process of professional values on entry as there is a relationship between the level of nurses' education and professional values [3, 7]. This was also supported by Arries [8], Bijani et al. [2], and Green [9], who suggest that the level of maturity of, i.e., junior and senior students, plays a role in the formation of professional values and was recommended for consideration for curriculum development [10, 11]. For new nursing students, professional values are rooted in personal values derived from their own culture and society [6] and are influenced by many other factors such as education, attitude, religion, ethnicity, and culture [6, 12].

The responsibility of professional nursing programmes therefore is to embed and integrate professional values throughout the nursing curriculum and monitor the process of acquisition and practice of core values that occurs throughout the nurse's lifetime [7, 13–15]. The paradigm of nursing and nursing education emphasises the need for professional values such as trust and caring [12] and the importance of nurse graduates to be able to demonstrate these values in practice [9].

Embedding professional values in the curriculum requires the need to monitor professional values as an educational objective in nursing education. Research scholars have developed valid and reliable quantitative scales to measure nurses' professional values with the most utilized instrument being the nurses professional values scale-revised (NPVS-R), developed by Weis &Schank [16] and based on the 2001 American Nurses Association's Code of Ethics for Nurses. The aim of this cross-sectional study was to describe the values held by undergraduate learner nurses in a school of nursing in South Africa, by using the nurses professional values scale which was developed by Weis and Schank [16].

2. Participants and Methods

2.1. Aim

The purpose of this study was to describe professional values held by undergraduate degree students at a nursing school in South Africa.

2.2. Design

A cross-sectional survey using a self-administered questionnaire was conducted with undergraduate student nurses at a university in the Western Cape in South Africa.

2.3. Study Population and Sampling

The study population had 1,233 nursing students registered for the undergraduate nursing program at a school of nursing at a university in the Western Cape in South Africa at the time of the survey. Using a 95% confidence level, a 5% margin of error, and a 50% response distribution, a sample of 294 was calculated, and using quota sampling per year level, all students were asked to participate.

2.4. Data Collection

This study utilizes data from a larger data collection project on values-based leadership. Data were collected, with permissions from the university and the school of nursing, through face-to-face self-administered questionnaires from 29th October 2019 to 5th November 2019. Appointment schedules were drawn up to meet with year-level coordinators of six-year levels to arrange for an information session and a suitable timeslot in which the nature and

purpose of the project were explained to the participants. They could then ask clarifying questions about the project. Written permission was obtained from participants who chose to voluntary participate in the project. Academic staff administered the questionnaire after class sessions.

The inclusion criteria were that all students had to be registered in the legacy four- or five-year degree program. Only 245 participants completed the questionnaires. Forty-nine students of the calculated sample of 294 voluntarily decided not to partake in the study.

2.5. Instrument

The questionnaire included the validated nursing professional values scale (NPVS-R-5) (Weis &Schank, 2009). The NPVS-R has previously been used in South Africa and comprises 26 items representing five professional value dimensions, namely, justice (five statements: 1, 2, 9, 14, and 15), trust (statements: 3, 12, and 13), professionalism (four statements: 5, 6, 7, and 8), caring (nine statements: 16, 17, 18, 20, 21, 22, 23, 24, and 25), and activism (five statements: 4, 10, 11, 19, and 26). The NPV-R scale used a 5-point Likert scale rating the importance of each individual statement with 1 rated as not important, 2 somewhat important, 3 important, 4 very important, and 5 most important. The overall professional value score is out of 130 with a range of 26–130. More importance an individual ascribes to a value statement was reflected in a higher total score, with scores below 43, between 43 and 86, and above 86 classified as overall low, medium or moderate, and high importance of professional values, respectively [7]. Studies conducted in Nigeria, Iran, Israel, Spain, and Turkey demonstrated scale reliability of the scale with a range of Cronbach Alphas from $\alpha = 0.81$ to $\alpha = 0.96$ [1, 3, 7, 9, 13]. This was also confirmed in this study ($\alpha = 0.941$). To further ensure reliability, a pretest study was conducted with 10 student nurses in their third year of study. No changes were made to the tool following the pretest, and the responses were included in the results.

2.6. Data Analysis

Data were analyzed using SPSS version 28. Demographics and scale dimensions were reported using descriptive statistics (frequency, percentage, mean, 95% confidence intervals, and standard deviation) and Mann–Whitney *U* and Kruskal–Wallis independent sample tests to compare scores across demographics. The level of significance was set at $p<0.05$.

3. Results

A total number of 245 respondents completed the questionnaire (a response rate of 83.3%). The respondents had an average age of 22.2 (±3.6) years, and most of the respondents were female (210, 85.7%). The respondents were evenly distributed across year levels with 62 (25.3%) in year 1, 62 (25.3%) in year 2, 62 (25.3%) in year 3, and 58 (23.7%) in year 4 (Table 1). Respondents reported having been in the school on average for 2.7 ±1.3 years, ranging from 1 to 7 years.

Table 1

Demographics and NPV-R scores ($n = 245$).

	n (%)	Mean (sd)	Test	p value
Gender ($n = 245$)				
Male	35 (14.3)	109.4 (14.6)	$U = 1.6$	0.102
Female	210 (85.7)	113.7 (12.8)		
–				
Year level ($n = 244$)				

Year 1	62 (25.3)	115.9 (10.1)	*K* = 11.1	0.025
Year 2	62 (25.3)	112.8 (14.3)		
Year 3	62 (25.3)	109.6 (11.8)	Year 4	58 (23.7)

Overall, the importance of professional values from the respondents' perspectives was high (113.1 ± 13.1), with no significant differences between genders (p=0.102, Table 1). Nearly, all respondents rated professional values as very important (197 (80.4%)) and only 11 (4.5%) as medium important. There were significant differences between year levels with year 1 and year 4 respondents (115.9 and 114.2, respectively) reporting significantly higher levels of importance of professional values than years 2 and 3 (112.8 and 109.6, respectively, *K* = 11.1, p=0.025) (Table 1). In terms of the professional values, trust (4.46 ± 0.61), justice (4.39 ± 0.57), and caring (4.38 ± 0.55) were rated significantly higher than professionalism (4.23 ± 0.64) and activism (4.22 ± 0.57) (Figure 1).

[figure(s) omitted; refer to PDF]

The most important values from the respondents' perspective were "Maintaining confidentiality of patients" (4.59 ± 0.71), "Safeguarding patients' right to privacy" (4.58 ± 0.68), and "Protect moral and legal rights of patients" (4.53 ± 0.69) from the caring dimension, "Promote equitable access to health care" (4.53 ± 0.71) from the trust dimension, and "Maintain competency in area of practice" (4.53 ± 0.74) from the justice dimension (Table 2). The least important rated values were "Participate in peer review" (3.96 ± 0.90) from the professional dimension, "Participate in public policy decisions affecting distribution of resources" (3.88 ± 0.92) from the activism dimension, and "Refuse to participate in care if in ethical opposition to own professional values" (3.82 ± 1.16) from the caring dimension.

Table 2

Value dimensions and statements.

Value dimensions and statements	Rank	Mean (sd)
Activism		
Participate in activities of professional nursing associations	13	4.4 (0.77)
Advance the profession through active involvement in health-related activities	16	4.36 (0.74)
Recognize role of professional nursing associations in shaping healthcare policy	20	4.3 (0.76)
Participate in nursing research/implement research findings appropriate to practice	22	4.18 (0.82)
Participate in public policy decisions affecting distribution of resources	25	3.88 (0.92)
–		
Caring		
Maintain confidentiality of patient	1	4.59 (0.71)
Safeguard patients' right to privacy	2	4.58 (0.68)

Protect moral and legal rights of patients	4	4.53 (0.69)
Provide care without prejudice to patients of varying lifestyle	6	4.48 (0.77)
Practice guided by principles of fidelity and respect for person	7	4.45 (0.73)
Act as a patient advocate	11	4.41 (0.76)
Protect rights of participants in research	14	4.4 (0.81)
Confront practitioners with questionable or inappropriate practice	23	4.17 (0.91)
Refuse to participate in care if in ethical opposition to own professional values	26	3.82 (1.16)
–		
Justice		
Maintain competency in area of practice	5	4.53 (0.74)
Accept responsibility and accountability for own practice	8	4.45 (0.77)
Seek additional education to update knowledge and skills	9	4.43 (0.76)
Request consultation/collaboration when unable to meet patients' needs	15	4.36 (0.8)
Engage in ongoing self-evaluation	21	4.21 (0.8)
–		
Professionalism		
Promote and maintain standards where planned learning activities for students take place	17	4.33 (0.74)
Establish standards as a guide for nursing practice	18	4.33 (0.77)
Initiate actions to improve environments of practice	19	4.32 (0.78)
Participate in peer review	24	3.96 (0.9)
–		
Trust		
Promote equitable access to health care	3	4.53 (0.71)

Assume responsibility for meeting health needs	10	4.42 (0.75)
Protect health and safety of public	12	4.41 (0.8)

4. Discussion

This current study has shown high ratings of the importance of professional values by the nursing student respondents (113.1 ± 13.1) in this setting, similar to other studies that reported high scores for nursing students, as well as nurses' (who were at different levels of education and generations) professional values, using the NPVS-R [7–9]. This suggests that according to this scale, undergraduate nursing students in this school have achieved success in embedding professional values in nursing during the nurse training programme. This study also confirms another older South African study (Weis &Schank, 2009) who found high overall levels of professional values.

The most important value was trust, with the statement "Promote equitable access to health care," ranked third amongst all the value statements, with a mean score of 4.53 (0.71). A reason for this high score could be attributed to the context of the study where there are still disparities between socioeconomic groups in South Africa [17], and many respondents come from low socioeconomic communities with poor access to health care. Access to quality services in South Africa has remained low despite many efforts and approaches by African countries to equalise health care [18].

Within the value dimension of caring, the highest ranked ratings in the scale were for the following: "Maintain confidentiality of patients," "Safeguard patients" right to privacy," and "Protect moral and legal rights of patients" which was rated 4th highest. These findings were congruent with the findings of a study conducted in Iran which compared the professional values of nursing students, nurses, and nursing educators and found overall mean scores for all within the range of relatively important or important. Similarly, from the student nurse's perspective in Iran, statements which relate to caring such as "Maintain confidentiality of patients" and "Protect moral and legal rights of patients" had the highest importance ratings for nursing students [2].

Similar to other studies by Chikeme [3] and Poorchangizi et al. [7], the following statements were rated as less important in the current study: "Recognizing role of professional nursing associations in shaping healthcare policy" (ranked 20th), "Engaging in ongoing self-evaluation" (ranked 21st), "Participating in nursing research/implementing research findings appropriate to practice" (ranked 22nd), and "Participating in peer review" (ranked 24th). Though similar, the respondents in the Poorchangizi et al. [12] study ranked "Recognizing role of professional nursing associations in shaping healthcare policy" 24th, "Engaging in ongoing self-evaluation" 17th, "Participating in nursing research/implementing research findings appropriate to practice" 23rd, and "Participating in peer review" 25th, which could be attributed to certain factors in their settings such as educational semester, low motivation, insufficient affirmation, and low encouragement by nursing educators. Although students in this study are being taught about the importance of participating in peer review during their course of training for quality assurance purposes, no actual opportunities exist in undergraduate progammes where students can actively engage and involve themselves in peer-review activities. However, nurse educators do ensure the presence of the "student voice" during accreditation processes by the regulatory body of South Africa and opportunities where there are formal disciplinary hearings and curriculum reform at the institution of higher learning. However, not all students get the opportunity to be selected when these opportunities arise, and therefore, the majority of students might regard this item "Participating in peer review" as least important amongst the values because of not knowing what it actually entails.

A major concern was the low ranking (26th) of importance of the statement "Refusing to participate in care if in ethical opposition to own professional values," in contrast with Poorchangizi et al. [12], whose respondents ranked this statement more important at 13th amongst the value statements. This statement is from the caring value dimension and is central to ethical decision-making in practice [7]. Our finding may relate to the diverse context in South Africa with most of the student population having varied value orientations, but this would have to be investigated further. Another reason for the low ranking of this value statement could also be due to students not being exposed enough to real-life encounters of an ethical nature in practice, but this also requires more research.

A further concern is the low ranking of the statement “Participating in public policy decisions affecting distribution of resources” which ranked 25th in this study and 26th in the study by Poorchangizi et al. [12]. Health and public policy are essential elements of professional obligations of nurses [19]. Also, the American Nurses Association’s [20] nursing Code of Ethics state that nurses have a responsibility to participate in political processes and advocate for their patients [21]. Though respondents rated “Acting as a patient advocate” as an important value under the caring dimension at 11th, “Participating in public policy decisions affecting distribution of resources” was ranked 25th which is considered as the least important, highlighting a difference of a belief and translating this value into practice amongst the respondents. These values are taught in the nursing school, but being a student may provide limited ability to engage in health and public policy activities [22]. In addition, the current programme may not adequately equip students with the analytic, communication, and leadership skills to translate this into practice, but this should be further investigated [12]. This could be the same reason why students in this study scored the statement low, as not enough emphasis is placed on active involvement and engagement in public policy at student level. Also, in the current study, opportunities at policy discussion level are almost nonexistent in the programme and should be further explored by nurse educators to give students more exposure to boost their leadership skills.

There was no significant difference found in this study between professional values and gender (p=0.102). Nearly, all respondents rated professional values as very important (197 (80.4%)) and only 11 (4.5%) as medium important. The results of the current study were similar to those of a study that was conducted in Pakistan in 2018, which showed that male and female respondents paid equal attention to professional values [5]. However, the study confirmed previous papers which suggested that the level of education influenced the integration of values [10, 11, 13], with differences due to demographics related to academic levels of study. In all four-year levels, the respondents had high overall scores for professional values, but first- and final or fourth-year level students recorded significantly higher ratings in professional values than students in their second and third years (112.8 and 109.6, respectively, $K = 11.1$, p=0.025), though they might not consider each value and its corresponding statements as equally important [23]. The findings were in line with a study in Turkey [24] which indicated that the academic year had an effect on the professional values of nursing students, and [9] a study in Israel with novice (first year), advanced (third year), and senior (fourth year) students also found statistically significant differences between these groups. The high ratings in the first year in the current study were consistent with findings by Bleda et al. [13], who found that nursing students rated professional values as highly important when they enter the nursing profession because of some students having inadequate clinical experience to accurately rank the statements. In our study, the high scores of first-year respondents could relate to high levels of preexisting values which then further translate into professional values towards the end of their training [13]. Another reason could also be that South African nursing students come from different cultural backgrounds and enter the university with a set of diverse values that could influence how each student assigned meaning to the importance of professional values and how they scored the statements. The final-year respondents are also more mature students, preparing for practice as new graduates, which may reflect the preparation for practice [13]. Furthermore, the final-year respondents in this current study also have a formal professional practice module in their final year of study which exposes them to further growth and development of these values as they take on more responsibilities as senior students. This professional maturity is linked to chronological maturity as these students have been exposed to the need to make independent judgments in their professional and personal lives [8, 9]. Bijani et al. [2] also found a similar pattern with higher academic levels being associated with higher scores for professional values.

4.1. Limitations

There are some limitations in this study. First, respondents were from one university in the Western Cape Province of South Africa only, and though it confirmed 2009 South Africa study’s findings, caution should be taken in generalizing these findings to undergraduate nursing students in South Africa. Furthermore, because of the diverse nature of the study population, religion, cultural background, language, and ethnic origin may influence the development of professional values but are not explored in terms of their association with nurses’ professional values in this study. The study did not explore the reasons for the ratings, and further studies are needed to explore

the factors that influenced the low ratings for professionalism and activism values.

5. Conclusion

Professional values in nursing students are central to their training as these values would determine quality patient care service delivery and guide new graduates in their ethical decision-making while in nursing practice. This study showed that the respondents rated professional values highly and that this may be due to the selection process of students entering the programme and the process of embedding professional values in the nursing curriculum.

Additional Points

Clinical Resources. (1) An instrument to measure professional nursing values: https://sigmapubs.onlinelibrary.wiley.com/doi/abs/10.1111/j.1547-5069.2000.00201.x. (2) Importance of professional values in nursing and healthcare: https://www.heraldopenaccess.us/openaccess/importance-of-professional-values-in-nursing-and-healthcare. (3) Professional nursing values: a concept analysis: https://onlinelibrary.wiley.com/doi/abs/10.1111/nuf.12211.

Ethical Approval

This study received ethics clearance (BM18/09/20).

Consent

Participants were informed of the nature, purpose, and intention of the study through an information sheet. The respondents completed a signed consent form before participation and were assured of confidentiality and anonymity by using codes on the questionnaires.

Acknowledgments

The authors would like to thank the participants who participated in the study and the academic staff who assisted in the distribution of the survey. This study was funded by the University of the Western Cape. Open-access funding was enabled and organized by SANLiC Gold.

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DETAILS

Subject:	Patients; Students; Nursing education; Health care policy; Curricula; Demographics; Values; Confidentiality; Nursing care; Questionnaires; Nursing schools; Data collection; Ethics; Right of privacy; Nurses; Public policy
Location:	South Africa
Editor:	Claire Newman
Publication title:	Nursing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023

Publisher:	Hindawi Limited
Place of publication:	New York
Country of publication:	United Kingdom, New York
Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437
Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article
Publication history :	
Milestone dates:	2023-05-15 (Received); 2023-07-17 (Revised); 2023-08-21 (Accepted); 2023-09-04 (Pub)
DOI:	https://doi.org/10.1155/2023/9635033
ProQuest document ID:	2865667115
Document URL:	https://www.proquest.com/scholarly-journals/professional-values-undergraduate-students-at/docview/2865667115/se-2?accountid=211160

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Last updated:	2023-09-18
Database:	Publicly Available Content Database

Nurses’ Perceptions on How Recovery-Oriented Mental Health Care Can Be Developed and Implemented

Kebope Mongie Kealeboga [1]
; Mofatiki, Eva Manyedi [2]
; Moloko-Phiri, Salaminah [2]
[1] University of Botswana, Faculty of Health Sciences, School of Nursing Science, Gaborone, Botswana; North-West University Faculty of Health Sciences, School of Nursing Science, Mafikeng, South Africa [2] North-West University Faculty of Health Sciences, School of Nursing Science, Mafikeng, South Africa

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ABSTRACT (ENGLISH)

Aim. This study explored how nurses working in inpatient mental health units perceived the development and implementation of a recovery-oriented mental healthcare programme (ROMHCP). *Background*. The recovery-oriented mental healthcare approach (ROMHCA) in mental health is regarded as the future of mental health services and has been implemented in different countries worldwide. However, regarding developing and implementing the recovery approach, Africa appears to have been left behind by the rest of the continents. *Design*. The study used a qualitative approach to describe how a recovery-oriented mental healthcare approach could be developed. *Methods*. Thirty nurses who worked in Botswana's four inpatient mental health facilities consented and voluntarily participated in the study. Data were collected from February to mid-March 2022 through online focus group discussions and analysed using thematic analysis. The COREQ checklist was used to report the findings. *Results*. Two main themes emerged as follows: (i) developing and implementing a recovery-oriented mental healthcare programme is possible and (ii) certain elements are required to develop and implement ROMHCP. *Conclusion*. The participants believed that people diagnosed with mental illness could recover from the illness and suggested how it could be achieved. They also contended that the programme's success would lie mainly with multisectoral support from policymakers, facilities, hospital personnel, patients, and the community. *Clinical Relevance*. ROMHCP has the potential to benefit people with mental illness in the country. In addition, it would allow nurses to improve their knowledge and skills in managing mental illnesses. *Patient or Public Contribution*. The patients and the general public did not contribute to the study's concept, design, and outcomes. However, the nurses working in mental health facilities volunteered to participate in the study.

FULL TEXT

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1. Introduction

Mental health services, notably the community based, from certain Western high-income countries have embraced ROMHCA as a new dimension for mental health departments when treating people diagnosed with mental illness [1] online [2, 3]. The recovery vision entails rethinking and reforming the current mental healthcare practice, whose approach is predominantly biomedical, to a person-centred approach in providing care to people with mental illness. The biomedical approach in mental health positions the cause of mental illness to brain disorders, thus relating the cause of mental illness to biological abnormalities in an individual, and therefore, one will need pharmacological interventions [4]. Doing so has led to shifting to ROMHCA. ROMHCA recognises the individuality of a person diagnosed with a mental illness. It is entrenched in the principles of self-determination, empowerment, citizenship, love, connectedness, respect, and the installation of hope for the future of people with mental illness [5, 6]. In this model, the patient drives their recovery process.

There is no common understanding of what mental health constitutes. Anthony [7] gave the most popular and widely accepted definition. He explained recovery as living a gratifying life notwithstanding being decapacitated by the

symptoms of mental illness. Ørjasæter and Almvik [8] also described recovery as a multifaceted process through which individuals with mental illness live satisfying and fulfilling lives like any other citizen. This definition validates the personal nature that people attribute to recovery. The literature has revealed that the person centeredness of recovery alone highlights the need for individualised care plans for people with mental illness [9, 10].

Intervention programmes have been developed to facilitate ROMHCA. For instance, in the United States of America, Copeland [11] developed a Wellness Recovery Action Plan (WRAP) programme to teach healthcare workers and people with mental illness how to live with and manage mental illness. WRAP is a framework where healthcare workers use to learn more about mental illness and how to manage it from a recovery-oriented approach, and it has been proven to improve the general well-being of people with mental illness [12]. In England, Bird and Slade [13] developed a REFOCUS intervention to improve the working relationships between the staff and patients. REFOCUS is an intervention focusing on activities promoting recovery and recovery-working practices and relationships among staff for them to connect better with patients [14]. In addition, it coaches staff to understand mental health users' values and treatment preferences to support them in a better recovery process [14].

Flaherty-Jones et al. [15] developed a Steps to Recovery (STR) programme in Australia to improve mental illness by providing information, including instilling hope for the future by providing people with mental illness skills on managing mental illnesses. In Ireland, a psychoeducation programme called EOLAS (Irish for knowledge) was developed in collaboration with peers, family members, and healthcare workers to help support people with psychosis and their caregivers. [16]. EOLAS is delivered in a manual format and teaches people about psychosis, focusing on the biopsychosocial model, relapse prevention, and how families can support patients [16, 17]. The programme improved the understanding of recovery and communication between healthcare workers and other stakeholders [16]. An e-version of EOLAS has been implemented following the COVID-19 pandemic, and it has shown that it was feasible to use and effective [17]. The findings support the usefulness of digital platforms to deliver health education interventions to support people with mental illness [18, 19].

The effectiveness of ROMHCPs is well documented in the literature [20–23]. However, evidence from the literature indicates that the implementation of these programmes is from mainly high-income countries, mainly from the West [3, 24–26]. Other regions, such as Asia and South America, have adopted ROMHCA despite challenges such as poor implementation [27, 28]. Africa is still behind in delivering mental healthcare services, let alone adopting recovery-oriented mental health care services. Studies from Africa have indicated that the delivery of mental healthcare services is hampered by a lack of mental health policy, overreliance on biomedical approaches, and a general lack of knowledge about recovery-oriented mental health care [29–31].

ROMHCA in Botswana has not yet been implemented and uses the biomedical approach, which does little for people with mental illness at the community level but admits them to mental health institutions [32]. The country operates only one psychiatric hospital, Sbrana Psychiatric Hospital (SPH), with a bed capacity of 300 patients. The provision of mental health care is through the mental health policy of 2003, which serves as a reference for integrating mental health into general health care [33]. SPH is backed by eight mental health units, all with a bed capacity of 10–15 patients. There are 11 psychiatrists in the country, and most are based in private practice. Only two are based at SPH. Psychiatric mental health nurses operate most mental health services with the help of general nurses [32, 34].

With the increasing evidence from international studies on the effectiveness of recovery-oriented mental health services [23, 26, 35], Botswana should also position itself to implement the latest evidence-based care approaches in mental health to support people with mental illness in the community. Following admission, patients are discharged to their families without proper preparation to reintegrate them into society. The mental health service continues to face a shortage of mental healthcare personnel. Nurses are the leading providers of mental health care and mostly see patients first on arrival at mental health facilities [36]. The researchers, who are mental health nurse specialists, have observed that "nurses talk about recovery" in their daily interactions with patients. The meaning attached to recovery is mainly symptom reduction and compliance with treatment. The recovery-oriented practice goes beyond symptom reduction and treatment adherence but calls for patient-centred care [9].

Nurses in Botswana must devise or participate in developing interventions to improve the care of people diagnosed with mental illness. Brooke-Sumner et al. [30] from South Africa have attributed the failure of health workers to implement recovery-oriented mental health services to a lack of understanding and involvement of mental healthcare personnel. In addition, a review of how recovery is understood among ethnic minorities by Sofouli [37] concluded that more work should be carried out on the policy so that cultural minorities can access culturally tailored interventions to address their needs. Therefore, this calls for developing interventions informed by findings from the localised data context to accommodate the uniqueness of different communities. To our knowledge, no study has been conducted in Botswana that solicited nurses' views on how ROMHCP can be developed and implemented. Since most mental healthcare professionals in Botswana are nurses, eliciting their views on developing ROMHCP is essential.

2. Methodology

2.1. Design

This qualitative study explored nurses' views on developing a recovery-oriented approach. The qualitative method investigates people in their locality and emphasises how the study participants experience and interpret phenomena [38]. Therefore, the design was appropriate since it described the contextual meaning of the participants of how a recovery-oriented mental healthcare programme could be developed and implemented. This study focused on the following questions and further probing statements from the participants to find more meaning in their responses. The study participants were nurses working in mental health facilities, with at least 3 years of experience. It was believed that the participants would be able to use their experience to provide information about the following objective:

(1) What are your views on developing a recovery-oriented programme for Botswana?

(2) How could a recovery-oriented mental healthcare programme be developed?

2.2. Context

The study was conducted in Botswana in four sites offering inpatient mental health care to people with mental illness. Among the four sites was the country's only mental health referral hospital in southeastern Botswana, Lobatse. The other three sites were psychiatric units attached to district hospitals. Of the three sites, one was in the far north west of Botswana Maun, one in central north east Botswana Francistown, and the last in the south west of Botswana, Molepolole. The three mental health units provide care to clients daily, with a bed capacity of 15–20 patients each. However, since they are small units, most of their patients are referred to the main psychiatric hospital, which has a bed capacity of 300.

2.3. Population and Sample

The study's population was all the nurses in the four sites actively treating patients with mental illness for at least three years. Thirty-two nurses were purposively selected out of 149 who consented to participate in the study. All the selected nurses consented to participate in the focus group discussions (FGDs). The number of FGDs was determined by data saturation.

2.4. Data Collection

Data were collected through online FGDs with nurses with at least three years of experience treating people diagnosed with mental health challenges. Microsoft Teams was used to conduct the FGDs since data were collected during the active phase of the COVID-19 pandemic. Two FGDs had seven participants, and the other two had 8. According to Nyumba et al. [39], six–eight people are ideal for FGDs. The FGDs were preferred for this study due to their ability to produce an interactive atmosphere that allows the participants to produce diverse information quickly from multiple participants [40]. One FGD was conducted per site, and in total, four FGDs were conducted across the four sites.

The steps to recruit nurses and study participants are described below. Through an identified mediator and independent person in each facility, meetings were set, and the purpose of the study was explained to potential participants following the study advertisement. Then, each potential participant was given information about the study and a consent form by an independent person. The nurses who eventually consented to participate voluntarily

provided their phone numbers to the researcher through the help of an independent person. All participants consented to be virtually and audio-recorded. K.M.K., a lecturer and a mental health nurse specialist, conducted the FGDs. K.M.K., a PhD student, had undergone training in qualitative data collection methods and had conducted qualitative interviews as a lead investigator in one study before conducting the interviews. K.M.K. was also supervised by two study supervisors experienced in qualitative research methods.

The FGDS were conducted in a private, secure place, and participants participated from their homes. The interviewer used an interview guide pilot tested with the participants from one mental health unit that was not part of the study. The pilot test offered insight into probing to get rich responses. FGDs were conducted in English and Setswana, the local language, allowing the participants to express themselves in the language they felt comfortable in. However, English remains Botswana's official language in workplaces. Besides, all the nurses have undergone intensive training in English. The FGDs lasted between 60 and 80 minutes. The interviewer took notes as the participants expressed their views, summarised each interview, and shared the summary with the participants to validate the content during the interview.

Data saturation was reached at FGD number three although the researcher went on to complete the last FDG to confirm the recurring themes. According to Hennink et al. [41], data saturation refers to a point at which issues become repetitive to the point of redundancy. Furthermore, Saunders et al. [42] conceptualised data saturation as "a matter of identifying redundancy in the data, with no necessary reference linked to these data; saturation appears to be distinct from formal data analysis." As such, in this study, at the end of the third FGD, it became clear that no new data were identified, confirming that data saturation had been reached. Therefore, the fourth FGD was conducted to confirm the themes.

2.5. Data Analysis

Data were analysed using Tesch's eight steps of data analysis [43] as it provides a detailed eight-step guideline for organising unstructured data. First, the interviewer transcribed visual recordings. The interviewer masked the participants' names to ensure confidentiality by using P0–P8. Following data transcription, the researcher (K.M.K.) read all the data carefully to make sense of the transcribed data and notes. Some notes were scribbled on the side of the script. At this point, the researcher generated and wrote topics on the margin of the script. A similar process of note writing was completed for all of the scripts. Then, similar ideas and topics were grouped into columns. Once the ideas were grouped, the researcher took the completed list and revisited the data. Abbreviations were used to code the topics and put them next to the text representing that particular code. That exercise helped to tell if any new codes and categories emerged. The researcher used descriptive words to name and group the topics into categories. At this stage, related topics were grouped to reduce the number of topics. The researchers labelled each category and arranged the codes alphabetically. Data were assembled according to a category it belonged to for preliminary analysis. The repeating data informed the grouping of categories, and irrelevant data were discarded. The researcher then sent raw data to the cocoder for an independent analysis. The cocoder was an experienced mental health specialist qualitative researcher identified and recommended by the study's supervisors. Subsequently, a meeting was set to discuss the themes and categories, and a consensus was reached. The results were further discussed with the study's participants to ensure that the emerging themes reflected the study context. A virtual meeting was held with the participants and nurses in each site through Microsoft Teams to validate the themes. The participants validated the themes orally and confirmed the descriptions of the sites by raising their hands to confirm that they represented what had been said during the interviews. In addition, the study's supervisors, professors E.M. and S.M., together with experienced qualitative nursing researchers, also checked, validated, and confirmed the themes.

2.6. Measures to Ensure Trustworthiness

To ensure the trustworthiness of this qualitative study, the researchers demonstrated thoroughness in credibility, transferability, dependability, authenticity, and confirmability [44]. Credibility was ensured through triangulation and visual recording of the FGDs. Researcher triangulation was achieved by reviewing the visual recordings and comparing them with the emerging themes and subthemes. In addition, credibility was further ensured through

prolonged engagement with the study's participants. To achieve that, the interviewer took time, for example, to meet and set an appointment with participants for the FGDs to form and strengthen relationships to build rapport. In addition, the researcher had one virtual meeting with the study's participants to validate the themes and subthemes (member checking). For transferability, the researchers gave a thick description of the context, the study participants, and quotes from the participants. Authenticity was ensured by giving a complete description of the study context and engaging the cocoder to verify the themes. Finally, the researchers documented a detailed description of the research process to ensure dependability and confirmability. Moreover, the research supervisors, EM and SM, monitored the research process throughout data collection and analysis to ensure confirmability. The study was reported based on the consolidated criteria for reporting qualitative research (COREQ) [45].

2.7. Ethical Considerations

Fleming and Zegwaard [46] posit that all human research must be approved before data collection to protect the participants and demonstrate good research conduct. Therefore, North-West University Health Research Ethics Committee cleared the study to be conducted. The participants were given information about the study and voluntarily consented to participate. The researcher used codes to protect the anonymity of all those who participated. All participants consented to the visual recording of the data collection procedure. All COVID-19 protocols were adhered to during the phase of study promotion and recruitment of the study participants. The researcher compensated each participant with P200.00 ($12) since they used their data to participate in the online FGDs.

3. Results

Thirty nurses participated in the FDGs. The age of the participants ranged from 26 to 53 years. Twenty-five nurses (83.3%) had a diploma in nursing, 14 (46.66%) had a diploma in psychiatric mental health nursing, 3 (10%) had a degree in nursing, and 2 (6.66%) had a master's degree in nursing qualification. Only two 2 (6.66%) nurses were nurse managers. The average experience of working in mental health facilities ranged from 4 to 13 years. All the nurses had more than three years of experience working directly with patients diagnosed with mental illness.

3.1. Themes and Subthemes

Participants indicated that Botswana's recovery-oriented mental healthcare programme could be developed and implemented. Table 1 includes the following themes: (a) "developing and implementing of a recovery-oriented mental healthcare programme," (b) "elements needed to develop a recovery-oriented mental healthcare programme," and (c) elements needed to implement recovery-oriented mental healthcare programmes.

Table 1

Showing how a recovery-oriented mental healthcare programme can be developed and implemented.

Themes	Subthemes	Categories
(1) Development of a recovery-oriented mental healthcare programme is possible	(1) Implementation of recovery-oriented mental health care is possible if it is supported	(1) Recovery is possible and achievable
(2) Prioritise mental health initiatives	(3) Provide funding for mental health	·
(2) Elements needed to develop and implement recovery-oriented mental healthcare programmes	(1) Having proper policies and up-to-date guidelines and SOPs within and between facilities	(1) Having policies in place

(2) Have a consistent standard of operations	(3) Develop guidelines to support the implementation of a recovery programme	(2) The inclusion of external stakeholders in the recovery plan of patients
(1) Provision of holistic care in mental health services	(2) Include pastors, traditional healers, herbalists, spiritual healers	(3) Have policies on the inclusion and regulation of spiritual care
(3) The importance of aftercare	(1) Have proper discharge and follow-up policies	(2) Have proper linkages in the community for continuity of care
(4) Education among the community and the patients themselves (psychoeducation) and stigma eradication	(1) Develop educational programmes for mental health awareness	(2) Provide education to patients, families, community/society, nurses, and other healthcare workers on mental health issues

3.2. Theme 1 Development and Implementation of a Recovery-Oriented Mental Healthcare Programme

3.2.1. Implementation of Recovery-Oriented Mental Health Care Is Possible if It Is Supported

Participants believed that Botswana's mental health facilities could implement the recovery-oriented mental healthcare programme.

F, P4: "I believe this is all possible if we can all come on board, from family, community and leadership levels and prioritise mental illnesses or mental health services as much as we prioritise other health services. So, it can be achieved if we can all come on board."

In addition, the participants indicated that mental health recovery-oriented care could be developed and implemented if prioritised and well-funded. However, there was a belief that that could only be possible if there was support from the government, hospital managers, and the community.

L, P0: "Yes, it is possible to have a mental health programme in our country, provided mental health is prioritised and supported by the top management."

S, P1: "I believe it can happen with support."

3.3. Theme 2 Elements Needed to Develop and Implement Recovery-Oriented Mental Healthcare Programmes

Participants in this study believed that a recovery-oriented mental healthcare programme could be developed and implemented and suggested how this could be carried out. They suggested the following subthemes on how a recovery programme could be implemented. Having appropriate policies and up-to-date guidelines and SOPs within and between facilities, including external stakeholders (e.g., pastors and traditional healers) in the recovery plan, the importance of aftercare, and psychoeducation for the community and patients and stigma eradication regarding mental illness in communities are very important.

3.3.1. Proper Policies, Up-to-Date Guidelines, and Standard Operating Procedures (SOPs) within and between Facilities

The participants felt that for a recovery-oriented mental healthcare programme to be successful, there must be appropriate policies, guidelines, and SOPs to guide its development and implementation. They stated as follows:

L, P5: I believe there should be a team in place that can measure whether care rendered to clients is as per the standards according to our SOPs. I believe commitment to quality care in all facilities should be a priority.

M, P6: There must be detailed guidelines on how the client will be assisted starting from admission until discharge.

3.3.2. Inclusion of External Stakeholders (e.g., Pastors and Traditional Healers) in the Recovery Plan

The participants also felt that external stakeholders such as herbalists, traditional doctors, and spiritual leaders should be involved in implementing the mental healthcare programme. Health involves restoring health from all the client's biopsychosocial sphere, including the spiritual needs often left unattended in mental health, as already discussed. They suggested that policies could be developed and implemented to assess the involvement of external stakeholders.

F, P1: "I will give an example if patients want to be seen by a herbalist, spiritualist or traditional doctor in the hospital, there should be assistance to provide holistic care. Someone from the spiritual perspective can pray for them. All stakeholders must come on board to make the patient's recovery possible."

M, P7: "Spirituality is very important in the recovery of patients. Hospitals should respect the spirituality of patients. Wards and facilities can have policies that regulate at what level patients engage in spirituality."

3.3.3. The Importance of Aftercare

Furthermore, the results also indicated that the participants felt that the programme should have aftercare and follow-up programmes to cater for the clients once they get discharged from mental health facilities. In addition, there should be a link between the hospital and the community to receive the patients and continuity of care.

S, P4: "It is possible to achieve full recovery of this client by ensuring there are linkages or continuity in the community. If they get discharged from a hospital, there should be continuity of care or after-care to support the patients."

L, P3: "Sometimes we find that the patients are just discharged into the society without notifying the local clinics of their whereabouts. We must have proper discharge procedures that link the patients to the clinics where they are discharged."

In addition, one participant emphasised the need for a follow-up plan following the discharge of patients from mental health facilities. For example, the current setup in Botswana needs a better-defined follow-up plan following the discharge of patients from the hospital.

S, P2: "When we discharge patients, there is no follow-up until we see the patient upon readmission. We need personnel that can do follow-ups of patients."

3.3.4. Psychoeducation for the Community and Patients and Stigma Eradication regarding Mental Illness

Furthermore, there was a great emphasis on implementing a recovery-oriented mental healthcare programme with a strong psychoeducation programme targeting individuals, families, and the community at large on issues of mental health and stigma eradication. They further indicated the need to target the cultural misconceptions about mental illness and its causes by involving cultural leaders in psychoeducation interventions as they greatly influence the community members.

M, P1: "The health care workers should do thorough psychoeducation to the individual, the family and the community. Psychoeducation can include many things regarding the diagnosis that can help the individual and what to expect."

L, P3: "First, teach the clients and the family about the condition so that the patient can accept themselves and the family accepts the client. That can happen if there is education about the patient's condition and treatment."

The participants also felt that psychoeducation should be extended to community leaders because of their critical societal roles. There was a belief that because of their influence, they could help dispel the myths and stereotypes that are normally associated with mental illness due to their influence.

S, P4: "Our cultural leaders must be on the same page with modern health. Clients relapse because of the myths surrounding mental health."

S, P2: "There is a way that culture perceives mental illness. We can reach cultural leaders and the community and teach them how culture and mental illness intersect."

The issue of stigma towards mental illness also came very strongly. The participants felt that for our setting to be recovery oriented, issues of stigma must be dealt with.

L, P3: “The patient should know about the stigma in society. Sometimes we need to understand that stigma is one of the factors that contribute to patients rejecting treatment. The patient can sometimes commit suicide because of stigma.”

The participants also believed that cultural perspectives and myths surrounding the cause of mental illness influence how patients with a diagnosis of mental illness deal with and facilitate their recovery process.

F, P4: “We still have setbacks regarding mental health issues because of our belief systems. People still hold that mental illness comes as a result of witchcraft. Some believe that you have done something bad to another person and they’re trying to fix you. A lot of people have got people with mental illness in their communities and in their families but still fail to accept that mental illness can happen to anyone.”

4. Discussion

The study explored how nurses working in four inpatient mental health units in Botswana perceived the development and implementation of a recovery-oriented mental care programme for Botswana. The study used an explorative, descriptive, and qualitative method and FGDs to collect data on nurses’ views on the phenomenon.

Participants in this study believed that developing and implementing a recovery-oriented mental healthcare programme could be possible for Botswana nurses to guide the care of people diagnosed with mental illness. The participants further believed that the programme’s success could be realised if all stakeholders came on board in support of the programme. Similar findings were reported in a study from Indonesia by Nurhayati et al. [47], where stakeholders indicated that a mental health community recovery programme could be applied in community settings. On the other hand, they averred that the care of people diagnosed with mental illness is still addressed through hospital admissions, where medication is the preferred choice of treatment.

On the important elements in facilitating the development of a recovery-oriented mental healthcare programme, the participants in this study highlighted the importance of having proper policies and guidelines on the proposed programme. In addition, they underscored the need for mental health interventions to be prioritised in terms of funding. The same findings were established in a study by Nurhayati et al. [47]. The participants indicated that there must be supporting policies on the recovery programmes and the availability of funds to ensure their success. A lack of funds for mental health initiatives was reported in a study from Taiwan in [27]. In the study, the staff proposed more resources in implementing recovery-oriented mental health services.

It is crucial for countries implementing a recovery-oriented mental health approach to have proper guidelines and policies to guide its implementation [2, 3, 48, 49]. Policies are effective in enforcing what is on paper. For example, staff and peer workers expressed concern about implementing recovery-oriented care in an organisation that does not support it in terms of having policies and procedures in place [50]. They contended that such a care project was unlikely to succeed. However, nurses in this study believed that the programme could be developed. Nonetheless, the implementation would require policies, procedures, and standards in place.

Other views on essential elements in developing the recovery-oriented mental healthcare programme were the involvement of other stakeholders such as traditional doctors, herbalists, and spiritualists. According to studies conducted in South Africa and Botswana, people diagnosed with mental illness usually seek help from traditional doctors, herbalists, and spiritual healers before they can resort to modern health [31, 51]. In concurrence, nurses in this study suggested that mental health facilities should provide for the spiritual needs of clients in a mental health facility. The participants suggested that patients’ spiritual needs could be provided for by having spiritualists, herbalists, and traditional doctors in the facilities to avoid situations where clients might end up overusing the prescriptions they might get from such services, which may be fatal. One participant suggested that the facilities could develop guidelines on how spiritual care could be incorporated and regulated into the mental health services in Botswana.

The importance of aftercare, proper follow-up, and planned home of patients was mentioned by participants as essential in implementing the programme. Participants expressed the need for proper discharge and follow-up channels following discharge from the mental healthcare facility. To corroborate this study’s findings, patients in a study conducted in Norway highlighted the importance of follow-up plans for continuity of care [52]. In addition, the

participants in the same study suggested that follow-up plans should be communicated on time, be flexible, and include the service users and their families. Findings from Indonesia from a study by Nurhayati et al. [47] also back the study as stakeholders in their study emphasised that home visits were essential to support the recovery of people diagnosed with mental illness. In Botswana, mental health service has a discharge and follow-up plan; however, when patients are discharged, they are not followed and reintegrated into the community. There is a need for this gap to be closed and that could be achieved through developing a functional recovery-oriented mental health programme.

Some recovery-oriented mental healthcare programmes are aftercare programmes that help facilitate patients' recovery and reintegration into the community following discharge from a mental healthcare facility [5, 53]. Being cared for in a community setup has been demonstrated to be effective in helping patients recover from mental illness. Fletcher et al. [53] evaluated the effectiveness of residential recovery-oriented facilities that helped people with severe mental illness from recidivism in Australia. The services effectively provided community-contextualised care that aligned with the recovery principles of empowerment and inclusion in line with the Australian mental health policies of a recovery-oriented approach. In addition, the services were well appreciated by clients as they felt they were supported and valued by staff. The findings were further supported by Heyeres et al. [54], as their study also indicated that residential facilities were recovery focused and complied with the recovery policies set by their government. The findings on the importance of community mental health services in caring for people diagnosed with mental illness could be why nurses in this study felt there should be aftercare and follow-up in place.

Lastly, the participants raised the importance of a functional and practical programme. In their view, the programme should have a psychoeducation programme targeting the staff, the patients, families, and the community. The participants felt a general lack of awareness about mental illness and mental health issues. In addition, stigma towards mental illness and cultural misconceptions about the causes and management of mental illness could hinder the successful implementation of the programme. Similar views were echoed in a study from Tanzania, which reported a general lack of awareness of mental illness and its causes in the community [55].

Furthermore, caregivers in the same study indicated that the community needed to be educated on handling people with mental health problems. The findings are further supported by findings of a study from Taiwan where health workers expressed the need for families and public health education on mental health issues with the hope that once the public is informed, they could be a major contributor to stigma reduction and hence better understanding, leading to the better outcomes for patients [27]. Moreso, the Taiwanese study, emphasised the need for health professionals to be educated on the recovery-oriented mental health approach to enhance their competencies and confidence in caring for clients with mental illness.

A study from Botswana on beliefs on the cause of HIV and mental illness by Becker et al. [32] associated the cause of mental illness with witchcraft. The study further indicated that people diagnosed with mental illness were viewed negatively as dangerous, untrustworthy, and discriminated against in the workplace. The study recommended training and public sensitisation on mental health issues to align rehabilitation services to a recovery-oriented care approach. In addition, a metasynthesis on the beliefs and perceptions about mental health issues by Choudhry et al. [56] associated mental illness with punishment from God. The authors recommended that mental health services develop clinical interventions to address cultural beliefs by encouraging dialogue with traditional leaders and developing strategies for involving them.

In the same vein, the participants in this study suggested that a recovery-oriented mental healthcare programme should include a psychoeducation training component for people with mental illness, families, and mental healthcare personnel on stigma in mental illness. Moreover, a systematic review by Waqas et al. [57] on interventions to reduce stigma in higher education indicated that psychoeducation programmes successfully reduced the self and public stigma of students with mental health problems.

These findings, therefore, emphasise the need to educate the community on mental health issues to dispel stigma and misconceptions about mental illness. Thus, a recovery-oriented mental healthcare programme developed for Botswana should be inclusive and consider elements such as funding, a training plan, the interplay of different

stakeholders, and a strong psychoeducation programme to improve its effectiveness.

5. Conclusion

This study is a preliminary exploration of factors that could enhance the development and implementation of mental health recovery in Botswana. The study is the first to be conducted in Botswana. It provides insight into how nurses in four inpatient units perceive the implantation of a recovery-oriented approach in mental health services. The study suggested essential factors for consideration for the success of the approach, including the development of mental health policies that support the recovery-oriented approach; revising hospital admission, discharge, and follow-up plans for people diagnosed with mental illness; revitalising the community mental health services; and involvement of other stakeholders such as traditional leaders, herbalists, traditional healers, and spiritualists. In addition, nurses recommended developing health education programmes to reduce the stigmatisation of mentally ill patients in the community. Besides, other influential people such as community cultural leaders such as chiefs and ward men would be targeted for inclusion in the programme. They would help change people's perceptions towards the causes and management of mental illnesses.

5.1. Recommendations

Mental health problems remain a burden and a significant public health concern. Unfortunately, mental health programmes remain the least funded among health programmes, especially in low- and middle-income countries [58]. For example, in Botswana, mental health still operates under 1% of the national health budget. The participants in the study recommended that the programme could be developed and implemented if it received funding, involved multiple stakeholders, and had a psychoeducation programme targeting all the major stakeholders, community leaders, mental health personnel, and the patient's families. In a meeting hosted by the WHO in conjunction with the World Bank Group in 2016, Global Mental Health included mental health as one of the sustainable development goals, which underscores the need to prioritise mental health and well-being at all ages [58]. To meet the goal, mental health initiatives should be prioritised in terms of funding.

5.2. Relevance to Clinical Practice

The recovery-oriented mental healthcare programme has the potential to benefit people with mental illness in the country. In addition, it would allow nurses to improve their knowledge and skills in managing mental illnesses. Findings might also inspire policy change in Botswana and other countries with limited resources as they move to adopt the recovery-oriented approach and guide its implementation.

Additional Points

What Does This Paper Contribute to the Clinical Community?. The paper has the potential to (i) contribute to the transformation of mental health care in Botswana to recovery oriented and (ii) reduce the scarcity of the literature on developing and implementing recovery-oriented mental healthcare programmes in Botswana.

Acknowledgments

The authors acknowledge different hospitals for giving the study permission to collect data. In addition, the authors thank all the participants who consented to participate in the study. Open-access funding was enabled and organized by SANLiC Gold.

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DETAILS

Subject:	Patients; Health care policy; Minority &ethnic groups; Mental health care; Intervention; Pandemics; Medical personnel; Mental disorders; Psychosis; Health facilities; Industrialized nations; Nurses; Health services; COVID-19; Recovery (Medical)
Business indexing term:	Subject: Industrialized nations
Location:	Botswana; Africa
Editor:	Claire Newman
Publication title:	Nursing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023
Publisher:	Hindawi Limited
Place of publication:	New York
Country of publication:	United Kingdom, New York
Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437
Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article
Publication history :	
Milestone dates:	2023-02-16 (Received); 2023-08-05 (Revised); 2023-08-19 (Accepted); 2023-08-23 (Pub)
DOI:	https://doi.org/10.1155/2023/4504420

ProQuest document ID:	2860172131
Document URL:	https://www.proquest.com/scholarly-journals/nurses-perceptions-on-how-recovery-oriented/docview/2860172131/se-2?accountid=211160
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Last updated:	2023-09-11
Database:	Publicly Available Content Database

Document 4 of 12

The Relationship between Bullying and Emotional State among Undergraduate Nursing Students: A Cross-Sectional Correlation Study

AbuAlula, Nada A [1]
; Almarwani, Abdulaziz Mofdy [1]
; Daniel Mon Mamanao [1]
; Naif Salem Altarawneh [1]
; Alharbi, Mohammed R [1]
; Ebeid, Inas A [2]

[1] Department of Psychiatric Nursing, College of Nursing, Taibah University, Medina, Saudi Arabia [2] Department of Psychiatric Nursing, College of Nursing, Taibah University, Medina, Saudi Arabia; Psychiatric Nursing and Mental Health Department, Port Said University, Port Fuad, Egypt

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ABSTRACT (ENGLISH)

Introduction. Bullying behavior by nursing students is a serious problem that has contributed to the drop in numbers in the nursing profession. *Aim*. The study investigated the relationship between bullying and the emotional state of undergraduate nursing students. *Methods*. The study used a cross-sectional correlation design with a sample of 286 undergraduate nursing students from multiple nursing colleges located in the western region of Saudi Arabia. The 21-item depression, anxiety, and stress scale (DASS-21) was used to measure the study outcomes. A revised version of the Bullying Assessment Questionnaire was used to assess bullying experiences. Statistical analyses, including a *t*-test, Pearson correlation coefficient, and a one-way between-subjects ANOVA, determined the significance of the relationship between study variables. *Results*. There was a high prevalence of depression, anxiety, and stress symptoms among Saudi nursing students. Most of the respondents reported mild to extremely severe symptoms of depression (58.7%), anxiety (58%), and stress (44.8%). Around 90.1% of the nursing students

reported exposure to a form of bullying over the previous 12 months. The most common items reported as part of this behavior included continually being assigned tasks beyond their capacity. Family members were the most frequently reported source of bullying (29.8%), followed by nursing faculties (20.9%). Bullying behavior was positively correlated with students' scores for depression, $r(284) = 0.49$, $n = 286$, $p < 0.01$; anxiety, $r(284) = 0.54$, $p < 0.01$; and stress, $r(284) = 0.56$, $p < 0.01$. *Conclusion*. The study's findings raise concerns and highlight the importance of decreasing the risk of depression, anxiety, and stress among undergraduate nursing students. Nurse educators must ensure that students receive psychological support to decrease these psychological outcomes. Regularly monitoring bullying behavior is essential to maintain students' psychological stability, which could eventually reduce professional dropout rates.

FULL TEXT

DETAILS

Subject:	Students; Anxiety; Nursing education; Cyberbullying; Stress; Power; Social networks; Questionnaires; Researchers; Data collection; Mental depression; Psychiatric-mental health nursing; Nurses
Business indexing term:	Subject: Social networks
Location:	Saudi Arabia
Editor:	Ahtisham Younas
Publication title:	Nur sing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023
Publisher:	Hindawi Limited
Place of publication:	New York
Country of publication:	United Kingdom, New York
Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437
Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article

Publication history :

Milestone dates:	2022-09-03 (Received); 2023-05-01 (Revised); 2023-07-19 (Accepted); 2023-08-05 (Pub)
DOI:	https://doi.org/10.1155/2023/2397229
ProQuest document ID:	2849687063
Document URL:	https://www.proquest.com/scholarly-journals/relationship-between-bullying-emotional-state/docview/2849687063/se-2?accountid=211160
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Last updated:	2023-08-14
Database:	Publicly Available Content Database

Midwives’ and Diabetes Nurses’ Experience of Screening and Care of Women with Gestational Diabetes Mellitus: A Qualitative Interview Study

Köpsén, Sofia [1] ; Lilja, Mikael [2] ; Hellgren, Margareta [3] ; Sandlund, Jonas [4] ; Sjöström, Rita [1] [1] Department of Community Medicine and Rehabilitation, Unit of Research, Education and Development-Östersund, Umeå University, Umeå, Sweden [2] Department of Public Health and Clinical Medicine, Unit of Research, Education and Development-Östersund, Umeå University, Umeå, Sweden [3] The Skaraborg Institute, Sweden. Department of Public Health and Community Medicine/Primary Health Care, The Sahlgrenska Academy at the University of Gothenburg, Gothenburg, Sweden [4] Department of Community Medicine and Rehabilitation, Physiotherapy, Umeå University, Umeå, Sweden

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ABSTRACT (ENGLISH)

Background. Gestational diabetes mellitus (GDM) is increasing and is associated with adverse outcomes for both mother and child. The metabolic demands of pregnancy can reveal a predisposition for type 2 diabetes mellitus (T2DM), and women with a history of GDM are more likely to develop T2DM than women with normoglycemic pregnancies. *Aim*. The aim of this study was to explore midwives’ and diabetes nurses’ experience of their role in screening, care, and follow-up of women with gestational diabetes mellitus and, further, to explore their opinions and

thoughts about existing routines and guidelines. *Method*. Individual interviews were performed with ten diabetes nurses and eight midwives working in primary and special care. Qualitative content analysis was done according to Graneheim and Lundman. *Results*. The analysis of the interviews resulted in the overall theme “An act of balance between normalcy and illness, working for motivation with dilemmas throughout the chain of health care.” Difficulties in carrying out the important task of handling GDM while at the same time keeping the pregnancy in focus were central. Women were described as highly motivated to maintain a healthy lifestyle during pregnancy with the baby in mind, but it seemed difficult to maintain this after delivery, and compliance with long-term follow-up with the aim of reducing the risk of T2DM was low. The women came to the first follow-up but did not continue with later contact. This was at a time when the women felt healthy and were focusing on the baby and not themselves. A lack of cooperation and easy access to a dietician and physiotherapist were pointed out as well as a wish for resources such as group activities and multiprofessional teams.

FULL TEXT

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1. Introduction

Gestational diabetes mellitus (GDM) is increasing globally and is associated with adverse outcomes for both mother and child, such as greater risk for type 2 diabetes mellitus (T2DM), macrosomia, and pre-eclampsia [1, 2]. Globally, 14% of all pregnant women develop GDM according to a pooled prevalence number [3], and in Sweden, the prevalence was 5.2% in 2020 [4]. The metabolic demands of pregnancy can reveal a predisposition for T2DM, and women with a history of GDM are more likely to develop T2DM than women with normoglycemic pregnancies [5, 6]. A review from 2020 [5] showed a 10-fold higher risk for developing T2DM, and another review about the incidence of T2DM showed an estimated risk of 19.7% after 10 years and nearly 30% after 20 years [6].

As for other types of diabetes, an increased plasma glucose level is used to diagnose GDM [2]. WHO has changed its recommendations and lowered the cutoff for diagnosing GDM [2]. In 2020, seven of Sweden’s 21 regions used the lower cutoff [4]. The CDC4G study [7] is in progress in Sweden to further evaluate whether to implement the lower cutoff recommended by WHO. Screening to detect GDM is performed at the maternity health clinic, based on risk factors such as heredity and overweight, but a few regions offer screening to all pregnant women [4]. Recommendations for screening differ between regions in Sweden [4]. When diagnosed, the woman is referred to a diabetes nurse in special care during pregnancy and for follow-up with the diabetes nurse in primary care postpartum. A lower cutoff for GDM diagnosis would result in an increased number of women with GDM, and this will entail demands on health-care organisations and resources. Therefore, it is important to study how health-care professionals today experience their work with this group of women.

Earlier research is limited concerning health-care professionals’ experience of treating women with GDM. In interviews with midwives about their experience providing care and counselling to pregnant women with GDM, Persson et al. [8] identified fear of failure as a central factor affecting the midwives’ choice of strategies. On top of their ordinary work tasks, the midwives felt that they needed to give specific counselling regarding GDM and to initiate lifestyle changes. Persson et al. reported a need for a more supportive organisation.

Interviews with Swedish midwives about strategies for handling challenging dietary counselling situations presented ambiguous strategies. The information focused on GDM prevention, but extra challenges were raised when counselling women who were obese, on special diets, had eating disorders, or came from different cultures. Those challenging situations demanded other strategies. The researchers concluded that further education towards a more person-centred approach was needed as well as possible cooperation with dieticians [9].

In a Norwegian study, midwives at a special care unit for women with diabetes mellitus were interviewed. They described a conflict owing to lack of time, where medical issues were prioritised, and person-centred care with a midwifery focus was given less space and time [10].

A qualitative study from Denmark interviewed health-care professionals who met women with GDM during and after pregnancy. They found that collaboration and information between the different clinics and different health-care

professionals need to be improved. It was unclear who was to be mainly responsible for long-term follow-up work to prevent T2DM. Due to a lack of guidelines and poor knowledge about existing guidelines, the women received very different care [11].

Examples of the few existing studies [8–11] indicate organisational issues and a clinical struggle to handle and balance different situations and work tasks in a tight time schedule. Thus, a need for further research within the area to map and increase understanding/knowledge about work with patients with GDM is necessary, during pregnancy as well as after delivery. In this study, we want to investigate further how consultations take place in different parts of the chain of health care, and during pregnancy as well as after delivery, both from the midwives' perspective and diabetes nurses' perspective. The results of this study can increase knowledge about daily work in the clinic and thus give important information for possible improvements and changes.

2. Aim

The aim of this study was to explore midwives' and diabetes nurses' experience of their role in screening, care, and follow-up of women with gestational diabetes mellitus and, further, to explore their opinions and thoughts about existing routines and guidelines.

3. Method

3.1. Study Design

A qualitative method with an inductive approach was chosen since we wanted to gain deeper insight into participants' personal experiences [12]. Semistructured individual interviews were performed to explore midwives' and diabetes nurses' experience of their role in screening, treating, and following up on women with GDM. Opinions and thoughts about existing guidelines were also explored.

3.2. Participants

All midwives and diabetes nurses in primary care and in special care units working with women with GDM in a region in the northern part of Sweden were invited to participate. This study used a purposive sample [12]. Potential participants were contacted through coordinating personnel and/or the responsible chief of the respective professions, and information was distributed among their contacts. Permission to participate in the interviews during working hours was given by the regional management. Ten diabetes nurses (age 27–61 with median age 46.5, work experience 2–15 years with a median of 5.6) and eight midwives (age 34–63 with median age 47.5, work experience 3–33 years with a median of 15.5) chose to participate in individual interviews. The participants were equally spread between rural and central areas in both groups. Two declined participation due to lack of time, one due to a feeling of lack of experience, and four did not reply to our contact.

Information about the study was given orally and in writing, and participants were able to ask questions. Informed consent was signed before entry into the study.

3.3. Data Collection

Data were collected through individual interviews conducted by phone or online, depending on the participants' choice. Face-to-face sessions were not possible due to the ongoing pandemic. All interviews were conducted by the first author, S.K., between May and July 2021. A semistructured interview guide with open-ended questions was used. A pilot interview was performed, and only minor adjustments to the interview guide were made; thus, pilot data were included in the study. The interviews were recorded digitally (Olympus VN-541 PC) and lasted between 12 and 28 minutes with a mean of 20 minutes. There was no time restriction, and the participants were asked at the end whether they had anything to add. Participants agreed to be contacted again later should any questions come up during the analysis, but no such need occurred. Transcripts were not returned to the participants for comments.

3.4. Data Analysis

The interviews were recorded digitally, transcribed verbatim by S.K., and deidentified and analysed using qualitative content analysis according to Graneheim and Lundman [13–15]. Qualitative content analysis emphasises variation, through similarities and differences in the material [13–15].

The analysis started with repeated readings of the material to get a sense of its entirety and content. Meaning units were identified and condensed to shorten their content, while preserving their core content, and then, they were

labelled with codes to capture their essence. The codes were then grouped and abstracted into categories and subcategories by their commonalities on a manifest level. Further interpretation and abstraction resulted in a theme that exposes the latent content in the material. To ensure dependability, S.K. and R.S. read the material, identified meaning units and coded the material separately, and then compared and discussed the differences until a consensus was reached. Cocreation in the analysis is often described as consensus [14]. Codes were then grouped into categories and subcategories separately, compared and discussed, and adjusted separately and then discussed again until reaching consensus. To further ensure dependability, this material was discussed in the whole group who had read parts of the material. An overall theme was created after discussions. Quotations were chosen to exemplify and clarify. All steps of the analysis process were managed manually. An example of the analysis is shown in Table 1.

Table 1

Example of the analysis.

Meaning unit	Condensed meaning unit	Code	Category	Subcategory
It's not only, I meet other patients with diabetes with foreign background, and there are difficulties with the language… Then it's good that you can take information from the Internet in their own language	Meet other with diabetes with foreign background. Language difficulties. Good to have information on the Internet in their language	Language difficultiesInformation in native language	Complexity of counselling situation	Languageand cultural differences

3.5. Ethics

Ethical approval for the study was obtained from the Swedish Ethical Review Authority, Dnr 2021-00179. All participants gave signed informed consent before the start of the study. Data materials were kept in computer files behind two-factor authentication, and transcripts were kept in a locked cabinet.

4. Results

The analysis resulted in four categories, nine subcategories, and one theme (Table 2).

Table 2

The results of the analysis.

Category	Subcategory	Theme
Structure within and between caregivers	Caregivers' role and cooperation throughout the chain of health care	
Thoughts about routines and guidelines		-
Content of the daily tasks	Screening and testing/sampling	An act of balance between normalcy and illness, working for motivation with dilemmas throughout the chain of health care

Promote healthy lifestyle and encourage the normal	Inform and increase knowledge of risks and consequences	Compliance and course of action at follow-up
–		
Complexity of counselling situations	Challenges in the daily work	
Obstructive physical impact of pregnancy		Language and cultural differences
	-	
Professional competence and need for further education		

From the categories to subcategories, the theme *"An act of balance between normalcy and illness, working for motivation with dilemmas throughout the chain of health care"* was abstracted and interpreted. The theme originates from the participants' stories about difficulties providing necessary information about the patients' illness while maintaining focus on positive aspects of this special time during pregnancy. They also spoke about difficulties later, at follow-up in addressing the risk of future illness and health risks at a time when the woman is "healthy." This was a challenge at all parts of the chain of health care, and being supportive and encouraging was regarded as a central issue. The participants expressed different motivational challenges depending on occupation and place in the chain of care.

4.1. Structure within and between Caregivers

Different ways of cooperation between caregivers and parts of the chain of health care were described, but so were a lack of cooperation and uncertainty about details in routines and guidelines. Participants described flexibility in the care and contact and possibility to adapt to the patient as important.

4.1.1. Caregivers' Role and Cooperation throughout the Chain of Health Care around the Women

The participants described their role in the care of the women, what their work assignments were, how they referred patients to other caregivers, and/or how patients were referred to them by others. They further reported on different forms of contact, for example, in person, by phone or online, according to the needs and preferences of the individual women. Midwives in primary care felt that their role was central during pregnancy but that their part in considering GDM was small; they set the diagnosis and then referred to "professionals" at the diabetes clinic.

Well, if we detect GDM we refer, we get professional help. We contact the diabetes clinic and then they start doing controls. The women continue with us according to the base programme. You are a key contact from the start to catch and find, and then refer… #13

All women diagnosed with GDM were referred to diabetes nurses in special care for regular contact during pregnancy. However, diabetes nurses in primary care are responsible for the follow-up after delivery (up to a year after delivery), a time when many women consider themselves healthy; the GDM is in the past.

Good experiences of quick nurturing after set diagnosis were common and well spread in the interviews, as were accounts of easy contact between primary care and special care nurses and then prompt contact with the woman after diagnosis. Due to long distances in parts of the area where the interviews were conducted, special care and primary care cooperate in special cases, for example, by having personal meetings with primary care close to home instead of travelling long distances for each visit or having contact by phone.

In primary care, the diabetes nurses felt alone with these patients and had no active cooperation with other caregivers at the clinic.

Some of the midwives communicated to the diabetes nurse at their clinic when a woman was diagnosed with GDM,

but this was an individual initiative and not routine. A recurring opinion was that there was no access to a dietician and that this category of competence would be important and beneficial in the work with those women.
Also, cooperation with a physiotherapist was lacking, as were group activities, which many participants thought would be beneficial for this patient group. The opportunity to meet others in the same situation and support each other was thought to be very rewarding.

4.1.2. Thoughts about Routines and Guidelines

Even within the same profession, there were different opinions about existing routines and guidelines. Some thought they were clear and easy to follow, while others saw a need for clarification and improvement. It was apparent that there were some details that needed clarification, based on diverse stories about how, for example, referrals should be made.

Our routines are a bit fuzzy when it comes to screening for GDM. A bit vague. I have pointed that out before; maybe it will change… #17

Some differences were seen in the layout of the work, and several participants expressed a wish for clearer guidelines to ensure equal care. Some had developed local guidelines on how to perform follow-ups at their clinic to provide clarity when the regional guidelines were considered unclear and/or not updated.
Different tools and resources were used to accomplish the work tasks. Some used the diabetes handbook available online [16] along with other patient information also available online. The women were, therefore, getting more diverse information than they might have if there had been more detailed regional guidelines.
A recurrent notion that came up in the interviews was that some women might be missed and that the routine of referring women with previous GDM to a special care diabetes nurse directly at the enrolment meeting with the midwife needed clarification. The participants also indicated uncertainty about glucose tolerance tests and said there was a need to clarify the routine and follow-up requirements. Another lack in the routines that came up was that the diabetes nurses in special care do not have access to the medical journals of midwives in primary care, which may impede the communication between caregivers.
There were questions and uncertainty about potential new cutoff limits for the diagnosis of GDM in the future. This raised thoughts about a possible need for a change in organisational responsibilities due to a growing number of patients.

4.2. Content of the Daily Tasks

Different work tasks were described in the interviews. All caregivers focused on a healthy lifestyle as well as screening and follow-up.

4.2.1. Screening and Sampling

Collecting and handling blood samples was described as an important part of the work tasks, first to diagnose GDM and then to follow blood glucose levels over time during pregnancy as well as during long-term follow-up after delivery. Screening and sampling were seen as essential in order to detect GDM and prevent further illness.
Screening is done based on risk factors and is important for detecting GDM, but several midwives said that many cases are found by the random testing of blood glucose that is performed during pregnancy.

It can be during our consultations that blood glucose shows that you need to progress to do an OGTT or you do it due to previous risk factors. And a GDM turns up. #4

After diagnosis, the women with GDM are taught to self-monitor blood glucose levels regularly and report to their diabetes nurse at the special care unit. After delivery, the routine is to offer recurrent follow-ups with the diabetes nurse in primary care, and blood samples are also an important part of this.

4.2.2. Promote a Healthy Lifestyle and Encourage the Normal

All participants saw the provision of lifestyle information as a central task in their daily work and talked about how to promote a healthy lifestyle, saying that this should be presented as the normal way of living and taking care of yourself. Healthy eating and physical activity were viewed as the main objectives.

In general we inform everybody about lifestyle factors. When you are pregnant, you are prone to making lifestyle changes, this we know. Many start exercising, start to be aware of weight and not gaining too much, thinking about

what they are eating. Many think about what they are eating…. It's quite general, regardless of whether you are a diabetic or not… #8

For the midwives in primary care, despite the GDM, the emphasis was on keeping the pregnancy and baby in focus and giving the mother-baby connection priority.

Providing support and reassurance while giving women the opportunity to ask questions was important in getting the information out effectively. The desire to do everything possible to ensure the baby's well-being during pregnancy was perceived as a key motivator for the women to adopt lifestyle improvements before childbirth. Later, after childbirth, this could be more difficult since the focus shifts to the baby and family and is not so much on the mothers themselves. Many spoke of the importance of having healthy habits for the future and indicated that further support is needed to help mothers maintain a healthy lifestyle.

4.2.3. Inform and Increase Knowledge of Risks and Consequences

Another important work task the participants described was providing information and increasing knowledge about diabetes and its risks and consequences. The importance of continuing this work after delivery, when most women consider themselves healthy, was seen as a key issue.

I think it is very important to follow up. Since they have such a big risk of developing T2DM… Yes, it is important to follow up and to inform them. #5

The midwives perceived that increasing body mass index prepregnancy is getting more prevalent, and mental health issues are more common. This makes the work, and helping mothers become role models for their children even more important.

4.2.4. Compliance and Course of Action at Follow-Up

The participants expressed that compliance was generally good during pregnancy, but it became more difficult with the follow-ups after delivery. Many participants described a long time delay between delivery and the first follow-up. They found that the women would come to the first visit for follow-up but would not continue with regular appointments in the long run, since they were feeling healthy at this point and were focused on the baby and the family. Attempts had been made to customise follow-up routines according to individuals' needs and preferences, but the compliance was still low.

I think it is easy as a patient to think that I have good blood sugar and that there is nothing to worry about now. But you still have to make them understand that the risk of developing T2DM is quite big. #6

The informants described uncertainties and differences concerning strategies and the interval when it came to follow-ups in primary care after delivery. The diabetes nurses expressed that, in the end, it came down to the woman's own responsibility. The low compliance for long-term follow-up was considered problematic.

4.3. Complexity of Counselling Situations

Obstacles, challenges, and difficulties of course occur in the contacts with these patients. Motivational work, normal impacts of pregnancy, and cultural differences, including language barriers, were the main subjects spoken about.

4.3.1. Challenges in the Daily Work

Different challenges were reported in the interviews. A recurrent topic was difficulties concerning motivation. Participants indicated that health education and motivation were time-consuming and that time was lacking. The work of changing habits and lifestyles is also time-consuming, so the same problem with lack of time is connected to this. Anxiety was quite common among the mothers-to-be, with different levels of worry among the women, both for the coming babies and for themselves. Anxiety could be a difficulty and an impediment, but it could also motivate women to change and to maintain new habits. Many participants reported that motivation was higher during pregnancy than after delivery.

To keep them motivated, it is different while they are pregnant; then they have someone else to think about./… ./It is the same as that you transmit good lifestyle to the children, that is what I think about, teaching the children to be physically active along with eating healthy. #9

It was a big challenge to try to keep a recurrent contact over time after delivery. Maintaining healthy eating and physical activity was considered a challenge. Another challenge was complex counselling situations on delicate

matters such as weight and being monitored with a scale, which was very sensitive for many of the women. The participants felt that they could do better if they had more time and resources.

4.3.2. Obstructive Physical Impact of Pregnancy

A recurrent topic in the interviews concerned the physical strains and events that normally occur during pregnancy that could be a complicating factor for lifestyle changes. For example, nausea and cravings make it even harder to keep a healthy diet, and pregnancy-related lumbopelvic pain can make physical activity harder. Even during a healthy pregnancy, there are many emotions and bodily events to manage.

To encourage them to exercise. Sometimes they get stuck in that they cannot walk because of pain from joint loosening in the pelvis and all that. So there is that… To get them more physically active early. #10

4.3.3. Language and Cultural Differences

Many of the women the participants meet are immigrants, and this often raises difficulties related to language and communication as well as cultural differences such as different food cultures and customs when it came to physical activity.

Dietary habits and general… this with cultural differences… You can notice big differences in what people eat and that there are different cultures. #4

Communication via interpreter was described as an aggravating factor in the consultation situations that made it more difficult to connect with the mother and to ensure that all the vital details in the conversation were clearly relayed.

Moreover, some women are illiterate and therefore cannot assimilate written information indicating, for example, the carbohydrate content in various products or other written information which would complement and repeat oral information. In addition, the numbers displayed on the blood sugar tester might not be understood by women in this group.

When you don’t speak the same language and perhaps need an interpreter. And the interpretation does not always work well. Now during COVID-19 there have only been telephone interpreters, and you do not always reach all the way. Then there are many who can’t read or count; if the woman is illiterate, that is very difficult. #12

4.4. Professional Competence and Need for Further Education

The participants had a varying number of years in the profession and the desire for further training varied, not always connected to longer or shorter experience. Many wanted further education to be given the opportunity and time to learn about new findings and new knowledge within the area.

I would be grateful for more education since this… I meet so few patients that I feel I don’t… I don’t work with it so much that I feel so very secure in what I do. The more you meet a group of patients the more secure you get within that area. And there are not that many patients, so it would have been nice to get some updates and more education. #16

A recurrent wish was to have the opportunity to learn more about areas that were not their speciality, for example, more knowledge about pregnancy for the diabetes nurses and so on. This would enable them to answer questions from the women, but they also wanted the information to increase their own understanding. A need for further education about cultural differences and, for example, food cultures was expressed as well as further training in conversation methodology.

5. Discussion

5.1. Result Discussion

This study aimed to explore midwives’ and diabetes nurses’ experiences of screening and care of women with GDM during and after pregnancy. The participants were active in different phases, according to their profession and placement in the chain of health care. Descriptions of the act of balancing between normalcy and illness came up several times in the interviews, and this has also been reported in previous research concerning health-care professionals’ experience working with women with GDM [8, 10]. This balancing act was described in different ways; for example, that a lack of time puts the illness in priority instead of the pregnancy and also that it was important to emphasise that lifestyle advice should be considered for everybody, thus as something normal and not specifically

because of their GDM. The informants thought this was an important group of patients that need time and care, and also that it was important to consider that the health of the mother would affect the health of the baby and family for a long time to come.

It was noticeable in the material that there were different opinions about routines and guidelines among the informants and that there were some misunderstandings about who does what and thinking that certain tasks were someone else's responsibility. There was a lack of knowledge and understanding of how work tasks and information were organised and distributed between professions and between parts of the chain of health care. Similar difficulties were pointed out in a Danish study [11], where suggestions about an overview of organisation, collaboration, and information transfer were made. A study from 2009 [17] showed low compliance with guidelines about risk factor-based screening. Only 30.7% of women with one or more risk factors were exposed to OGTT. Different primary health-care centres had developed their own, more specific, routines, which caused diversity between units. This was time-consuming work that, in a situation with well-functioning routines, should not have been necessary, and it led to a risk of unequal care. A related issue that should be possible to solve more effectively was that most participants found written information online to hand out to their patients since no such things were in the local guidelines. Of course, this provided opportunities to adapt the information to individual women, taking into consideration language and depth of information, but it could also be time-consuming and lead to unequal care. Besides the local guidelines, there are also national guidelines published by the National Board of Health and Welfare (Socialstyrelsen) concerning the prevention and treatment of unhealthy lifestyle habits. These guidelines can be of some help in ensuring the provision of equal treatment and care. The national guidelines stipulate person-centred care adapted to the individual, with a focus on patient education and support [18]. This was a focus that the informants spoke about frequently.

Cooperation concerning referrals from primary care midwives who had diagnosed women with GDM to diabetes nurses in special care seemed to be fast and effective, although there were some uncertainties about the correct way to make a referral. Beyond this, there was very little cooperation between special care and primary care and between occupational groups within primary care. Several participants remarked on the lack of a dietician and expressed a wish for further cooperation with a physiotherapist. It would be beneficial to have access to a multiprofessional team [19].

In both special and primary care, participants expressed a wish to be able to offer different group activities/treatments in order to take advantage of the strength in a group, where patients can share experiences and support each other. Previous research has shown the benefits of groups, which can improve maintenance and adherence [20]. Identification has been pointed out as an important factor when attending a group treatment, and a facilitator is needed for successful treatment [21, 22]. A review shows the effect of social identification-building on health, offering the possibility to identify with and belong to a group [21].

A clear organisational detail that would simplify and secure the work for diabetes nurses in special care would be to enable them to read midwives' reports from the women's primary care appointments. This was not possible at the time of the interviews.

A key challenge was communication since many women are immigrants and have no or only a limited ability to communicate in the Swedish language. Communication through professional interpreters or with the help of a relative is a complicating factor in the personal meeting and makes it more difficult to create a relationship and to empower the woman [23]. Furthermore, immigrants may bring different cultural customs when it comes to food and physical activity and different opinions about how women should take care of themselves during pregnancy [23, 24]. Transcultural understanding and competence are important, and health-care professionals need to get proper education in this to be able to meet those patients [24, 25]. Previous research also points out the importance of education and competence on how to collaborate with an interpreter, which is vital for a successful communication [24, 26]. The diabetes nurses also talked about challenges concerning women who are illiterate and who therefore have difficulties understanding what the numbers on the blood glucose tester mean. This leads to difficulties in getting the daily feedback that those measures are supposed to provide. The inability to interpret those results leads

to the need for resource-intensive recurrent personal meetings that would otherwise often be managed by phone or digital messages. It has been previously pointed out that illiteracy is a complicating factor that adds to the workload, and that cultural differences create a need for information that is adapted to be made more broadly accessible [27]. The diabetes nurses in primary care felt alone with those patients, women previously diagnosed with GDM, and came in contact with the women quite late after delivery, without having had former contact or any relationship with them. A known facilitator for compliance with recommendations given at consultations is connection and continuity with the caregiver, and this could be a factor here [28, 29]. The compliance following such consultations was experienced to be low, which has also been highlighted in previous studies [29–31]. Often the woman came to the first consultation after delivery but then as time passed, the attendance rate decreased. These consultations are introduced when the woman feels healthy, the baby and the family are in focus, and the risk of T2DM feels distant and no longer relevant. Kim et al. describe how women, despite knowing that GDM gives an increased risk of developing T2DM, did not see themselves as having an increased risk [32]. The consultations are voluntary, and a lot comes down to the woman's own responsibility and interest. Interviews with women treated for GDM report a lack of coordination, unclear responsibility for follow-up among health-care professionals, and absence of individual focus as factors contributing to low compliance with long-term follow-up [29].

If the lower cutoff for diagnosing GDM is implemented, the number of women diagnosed with GDM will increase, leading to new demands on health-care resources and organisations. An organisation where diabetes nurses in primary care have contact with the woman during pregnancy could improve continuity and might improve compliance with long-term follow-up. Continuity in contact and a person-centred approach are facilitating factors [28, 29].

Opinions about more education were varied. Different thoughts about the need and wish for knowledge about the part that was not the focus of one's own profession affected opinions about whether or not more education is needed, for example, for midwives to learn more about diabetes, or for diabetes nurses to know more details about pregnancy and its effects.

5.2. Methodological Discussion

The study's aim to explore participants' experiences led to the choice of qualitative method, more specifically, interviews analysed according to Graneheim and Lundman [13–15]. With interviews, there is a chance to go deeper into the subject with supplementary questions, which is not a possibility when using a survey. In this study, semistructured individual interviews were conducted by phone or online. Face-to-face sessions were not possible due to the ongoing COVID-19 pandemic. Bryman [12] discusses the pros and cons and possible differences in results between face-to-face interviews and interviews by phone or other means. There have been concerns that phone interviews might be less rich in content compared to face-to-face sessions, but according to Bryman [12], this has not been shown. By phone, there is a lack of body language, but you can still hear, for example, changes in tone and speed of talk. In an online interview, you can observe body language to some extent. Not conducting interviews face-to-face can be time- and cost-effective and might enable participation despite long distances. The participants in this study could choose which format they considered most convenient, and even over long distances, this made it equally easy for everybody in the area to participate, which is seen as an advantage.

The original plan was to hold focus group interviews, but this was changed to individual interviews due to the pandemic, which prevented in-person meetings. Holding focus group meetings online or by phone was not considered adequate since it would be very difficult to get a good group dynamic and discussion by those means. Focus groups would have been interesting, giving the possibility to observe how individuals act as members of a group discussing a special topic and how they react to others' opinions and experiences [12, 33].

There is no consensus on how many informants are needed in qualitative research and no way to calculate this compared to how participants are calculated in qualitative research. Kvale recommends 5–25 informants, to be able to overview the text material [33]. Too many informants and a big set of data could make it difficult to analyse all data as deeply as needed, while too few or thin materials do not give the necessary richness to the material [12, 33, 34]. The 18 interviews in this study were considered to provide a good amount of data, offering material with

richness and to be able to have an overview of the material, analysing similarities and variation.
A purposive sample was used as the researchers turned directly to the group of professionals actively working with this patient category and who thus have knowledge of and experience with the topic [12]. The participants were equally spread between midwives and diabetes nurses, working in rural and central areas, and they were spread among ages and years of work experience. This contributed to the width of the content of the interviews, which is important for the credibility as well as transferability of the study [13, 35].
The use of a semistructured interview guide ensured similar questions and topics in all interviews while still maintaining a flexible interview process. The questions do not have to be asked in the same order to all informants, which gives space and possibility for the informants' opinions and wishes to share [12]. The questions were not distributed beforehand so there was no chance to prepare specifically, but knowing the purpose of the interview made it possible to prepare more generally and consider what they wanted to share. This gives spontaneous answers, which are considered preferable. A pilot interview was conducted to test the interview guide and to make sure that it gave rich answers correlating with the aim of the study. This strengthens the study's credibility [35].
The analysis was done manually, without software. As described in the Method section, the analysis was performed in specific steps and with discussions, cooperation, and consensus between the authors. No member check was performed, since there were no specific questions and because this type of control is criticised [12]. The inclusion of more than one researcher in the analysis strengthens dependability [13, 35]. Furthermore, the process—from recruiting participants, through the analysis and production of finished result—is thoroughly described, which enables the reader to follow along and thereby to judge the study's transferability and credibility. Different steps and examples of the analysis are presented, and the results are clarified in the text and confirmed with quotations, which further strengthens dependability as well as transferability [13, 35]. Quotations help to show that the text in the results comes from the collected data, strengthening conformability as well as credibility [35].
As described in the Method section, the research group was involved in the analysis.
An interview is considered to be a cocreation between the interviewer and the interviewee and later between researcher and text through interaction in the situation [14, 33]. This makes it important for the researchers to be aware of preunderstanding that might affect the process. The authors have strived to be objective. The interviewer had no previous experience working with GDM and does not have the same occupation as the informants.

6. Conclusion

Our results demonstrate how women with GDM postpartum, with normalised glucose parameters and a new life situation, often have problems holding on to a healthy lifestyle and that they are often lost to follow-up from the health care. The participants describe that their care organisations have a lack of structure, coordination, and sometimes the knowledge to meet the specific needs linked to follow-up after GDM aiming at long time follow-up, health promotion, and diabetes prevention. If the lower cutoff recommendations from WHO for GDM would be implemented in Sweden, with an increasing number of GDM diagnoses, the urge for organisational changes will be even more relevant.

Acknowledgments

The authors would like to thank all the study participants for their contribution and also Region Jämtland Härjedalen for grants. This study was supported by grants from Region Jämtland Härjedalen, Östersund, Sweden.

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DETAILS

Subject:	Language; Womens health; Gestational diabetes; Content analysis; Primary care; Pregnancy; Cultural differences; Codes; Midwifery; Professional ethics; Interviews; Nurses; Counseling
Business indexing term:	Subject: Professional ethics

Location:	Sweden
Editor:	Sílvia Caldeira
Publication title:	Nursing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023
Publisher:	Hindawi Limited
Place of publication:	New York
Country of publication:	United Kingdom, New York
Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437
Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article
Publication history :	
Milestone dates:	2023-02-26 (Received); 2023-07-05 (Revised); 2023-07-17 (Accepted); 2023-07-29 (Pub)
DOI:	https://doi.org/10.1155/2023/6386581
ProQuest document ID:	2846826758
Document URL:	https://www.proquest.com/scholarly-journals/midwives-diabetes-nurses-experience-screening/docview/2846826758/se-2?accountid=211160
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Last updated:	2023-08-07

Database: Publicly Available Content Database

Psychosocial Problems among Psychiatric Nurses for Caring Patients with Mental Disorders during the COVID-19 Pandemic

Ibrahim, Rahmat [1] ; Pawestri, Fajar [2] ; Ragil Aji Saputro [2] ; Widianingrum, Setiyati [2] ; Triana Hanifah [2] [1] Department of Mental Health and Community, School of Nursing, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia [2] School of Nursing, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

ProQuest document link

ABSTRACT (ENGLISH)

COVID-19 has a negative effect on the psychological well-being of psychiatric nurses. Thus, examining the psychosocial response of nurses is important for preventing more serious mental health problems and disruption of the quality of nursing care. This study aimed to evaluate the psychosocial problems of nurses who provided nursing care to patients with mental health disorders during the COVID-19 pandemic. A quantitative study with a cross-sectional design was conducted. The 101 nurses at Central Mental Health Hospital who provide nursing care to patients with mental health disorders were recruited through consecutive sampling. The instruments used were the demographic questionnaire, the Expanded Nursing Stress Scale, Zung Self-Rating Anxiety Scale, and The Connor–Davidson Resilience Scale 25. Univariate and bivariate analyses were used to process the data. The mean score of 45.1 (±24.3) was obtained for the ENSS; around 97% of nurses have a work stress score below the average, 4.95% have mild-moderate anxiety, and 28.7% have a low level of resilience. Work stress and contact frequency, work stress and gender, anxiety and contact frequency, as well as resilience and contact frequency all correlated significantly (p value <0.05). The Pearson test showed a significant positive correlation between work stress and anxiety (p: 0.002, *r*: 0.299). However, there was no significant correlation between anxiety and resilience (p: 0.643, *r*: 0.47), nor between work stress and resilience (p: 0.643; *r*: 0.47). Psychosocial disorders that psychiatric nurses face include occupational stress, mild-moderate anxiety, and low resilience. The government can create specific infection control guidelines for the mental health setting, and hospital management or ward leaders can also provide support to psychiatric nurses to increase resilience in reducing psychosocial problems.

FULL TEXT

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1. Introduction

The COVID-19 pandemic developed into a global health crisis with a considerable increase in cases and a high death rate worldwide. It is a challenge for health workers, especially nurses. Along with these issues, nurses are prone to internal problems relating to severe workloads, insomnia, conflicts among health workers, moral concern, and professional dilemmas [1, 2]. COVID-19 does not only influence physical health problems but also on psychosocial health. The impact of the COVID-19 pandemic on psychosocial aspects includes symptoms of stress,

anxiety, depression, and posttraumatic stress disorder [3]. Psychiatric nurses frequently lack knowledge about infectious disease management and must process a large amount of information about COVID-19 in a short period of time, while also having fears of transmitting the disease to patients, limited personal protective equipment, and conflicts among health workers, which causes psychosocial disorders to nurses [4, 5].

Several research articles have proven that nurses experience high levels of stress and anxiety during COVID-19. Anxiety was assessed in 89.7% of Iranian nurses, as was stress in 54.9% of them [6]. Huang et al. [7] found that out of 1,257 health workers caring for COVID-19 patients in 34 hospitals in China, 50% experienced depressive symptoms and 45% ran into anxiety. Nurses must be resilient to deal with challenging conditions that are riddled with problems and challenges. Since resilience is one of the factors that protect nurses from rising when faced with challenges, emotional tiredness, and job dissatisfaction, it allows nurses to retain healthy and stable psychological functions and adapt to the work environment [8]. Research conducted on 824 nurses in Korea reported that nurses with depression experienced lower resilience and were prone to experiencing higher work stress [9].

Preliminary research was undertaken on psychiatric nurses at Central Mental Health Hospital. Researchers conducted interviews with three psychiatric nurses about psychosocial problems during COVID-19. Based on interviews, they encounter a variety of psychosocial disorders, such as difficulty conditioning patients—for instance, those who perform risky behavior like careless spitting—difficulties communicating with patients as a result of the use of personal protective equipment (PPE), and anxiety when other patients or other nurses are confirmed to be positive for COVID-19. Research on psychological aspects has not been widely conducted concerning work stress, anxiety, and the resilience of psychiatric nurses. Therefore, this study aims to provide information about the psychosocial problems of psychiatric nurses who provided nursing care to patients with mental problems during the COVID-19 pandemic.

2. Methods

2.1. Research Design

This research is a descriptive one that uses a cross-sectional design and a quantitative approach. This research was conducted in June 2022.

2.2. Subjects

The population in this study was psychiatric nurses at the Central Mental Health Hospital in Yogyakarta, Indonesia. Psychiatric nurses are defined as nurses who specialize in psychiatric nursing, caring for patients with mental and behavioral disorders holistically, not only providing physical care but also socializing and communicating with patients to improve their physical and psychosocial well-being. They also provide comprehensive care to individuals, families, groups, and communities. Meanwhile, Bowers et al. [10] define psychiatric nurses as a group of nurses who interact face-to-face with patients in inpatients settings who experience stress and/or frustration at applicable restrictions, which include actions or procedures to maintain security, seclusion, restraint, and enforced medication. Consecutive sampling was used as the sampling method. The inclusion criteria were that the nurses had to have at least a Diploma in Nursing and be willing to participate in the survey. They also had to have provided nursing treatment to patients with mental problems at Mental Health Hospital during the COVID-19 pandemic. Nurses on leave from their employment were excluded from the sample. The total population of nurses who provide nursing care to patients with mental disorders is 122. The researcher determined the sample size using the Slovin formula with a 50% margin of error (*e*: 0.05), so that the minimum sample size was 94 nurses. A total of 101 nurses were accepted as participants in this study.

2.3. Instruments

The Expanded Nursing Stress Scale (ENSS) is an instrument used to measure the work stress of nurses. There are 27 questions on it, and the results are divided into scores above and below average. The ENSS instrument has a Cronbach's alpha of 0.956 with a reliability coefficient 0.3181. The Zung Self-Rating Anxiety Scale (Z-SAS) measures anxiety levels which are divided into normal/not anxious, mild to moderate, severe, and panic [11]. At Yogyakarta General Hospital, 75 nurses participated in a construct validity test using the Z-SAS instrument. The results were *r count* >0.3 and Cronbach's alpha 0.658.

The Connor–Davidson Resilience Scale 25 (CD-RISC 25), which contains 25 statements to measure participant resilience. The data were categorized into low, medium, and high resilience levels [12]. The researcher conducted a construct validity test at Yogyakarta General Hospital and Surakarta Regional Mental Hospital and obtained a reliability coefficient of 0.281–0.766 and Cronbach's alpha 0.917.

2.4. Data Collection

This research was conducted at the Central Mental Health Hospital in Yogyakarta for psychiatric nurses. Questionnaires were given in printed form and digital form via links which contained data on participant characteristics and research instruments.

2.5. Data Analysis

Participants' answers were analyzed using univariate and bivariate analyses. The independent *T*-Test, Mann–Whitney, and Kruskal–Wallis tests were used to compare the work stress levels of the participants' using the ENSS instrument. The Mann–Whitney test was utilized to examine data from the Z-SAS, while the chi-Square and Fisher tests were used to examine the CD-RISC25 instrument. The correlation between work stress and anxiety as well as the correlation between work stress and resilience were examined using the Pearson product-moment correlation test. Furthermore, the correlation between anxiety and resilience was examined using Spearman's rank correlation test.

2.6. Ethical Considerations

This research was approved by the Ethics Commission of FK-KMK UGM with number KE-FK-0044-EC-2022.

3. Results

3.1. Sample Characteristics

A total of 101 nurses participated in this study. A total of 4 questionnaires were given to all participants. The instruments we provided included demographic data, ENSS, Z-SAS, and CD-RISC 25. The researchers gave questionnaires and explained how to fill them out to all participants and they agreed to consent and completed all questionnaires. Table 1 shows that characteristics are dominated by those between the ages of 41–65 (56.4%). Most of the nurses were female (67.3%) and married (96%). The proportion of nurses who worked more than 15 years is 71.3%, and most participants contacted patients >5 times (57.4%) each shift. Additional demographic characteristics at baseline of the study sample are shown in Table 1.

Table 1

Demographic characteristics (*n* = 101).

Demographics	Sample	Percentage (%)
Age		
19–40 years	44	43.6
41–65 years	57	56.4
Gender		
Male	33	32.7
Female	68	67.3
Marital status		

Married	97	96
Single/divorced	4	4
Education background		
Diploma	80	79.2
Bachelor	21	20.8
Working experience		
≤15 years	29	28.7
>15 years	72	71.3
Contact frequency		
≤5 times	43	42.6
>5 times	58	57.4

3.2. Level of Work Stress, Anxiety, and Resilience

Based on the data, the work stress score was 45.1 (SD = 24.3). The prevalence of psychiatric nurses who experienced work stress with a lower than average score is 97% and only 3% have a score higher than average. Most nurses do not experience anxiety or have normal anxiety (95.05%), and only 4.95% of nurses experience mild anxiety. Meanwhile, 51.5% of nurses have moderate resilience, 28.7% still have poor resilience, and just 19.8% have high resilience (see Table 2).

Table 2

Distribution levels of work stress, anxiety, and resilience of nurses (n = 101).

Variable	Mean ± SD	Median	Min–max	Sample	(%)
Work stress					
Score	45.1 ± 24.3				
Score lower than average				98	97
Score higher than average				3	3
Anxiety					
Score		26	20–39		

Normal/Not anxious				96	95.1
Mild-moderate				5	4.9
Severe				0	0
Panic				0	0
Resilience					
Score		81	69–100		
Low				29	28.7
Moderate				52	51.5
High				20	19.8

3.3. Differences between Work Stress, Anxiety, and Resilience with Demographics

Table 3 shows there were significant results for gender characteristics (p=0.013) and contact frequency (p=0.002) on the work stress variable. However, there was no significant difference in the correlation between work stress and age, marital status, level of education, and the length of work experience. Nurses with higher stress scores were aged 19–40 (45.77 ± 22.84), married (45.54 ± 23.22), worked ≤15 years (47.9 ± 23, 82), female, and had contact with the patient more than five times.

Table 3

Different tests of work stress, anxiety, and resilience based on the demographic characteristics of nurses (*n* = 101).

Demographics	Work stress			Anxiety		Resilience			
Median (min–max)	Mean ± SD	pvalue	Median (min–max)	pvalue	Low (%)	Moderate (%)	High (%)	pvalue	Age
									19–40 years
	45.77 ± 22.84	0.808[a]	26 (20–39)	0.205[b]	27	52.7	20.3	0.606[d]	41–65 years
	44.58 ± 25.55		24 (20–39)		33.3	48.2	18.5	Gender	
								Male	29 (11–127)

	0.013*(b)	24 (20–39)	0.335(b)	15.2	66.6	18.2	0.229(d)	Female	47 (5–87)
		26 (20–39)		35.3	44.1	20.6	Marital status		
							Married		45.54 ± 23.22
0.376(a)	26 (20–39)	0.847(b)	29.9	50.5	19.6	0.322(e)	Single/ divorced		34.5 ± 27.33
	25.5 (20–39)		0	75	25	Education background			
						Diploma		43.96 ± 23.17	0.361(a)
26 (20–39)	0.146(b)	30	48.7	21.3	0.964(d)	Bachelor		49.43 ± 28.39	
23 (20–39)		23.8	61.9	14.3	Work experience				
					≤15 years		47.9 ± 23.82	0.465(a)	26 (20–39)
0.608(b)	31	55.2	13.8	0.444(d)	>15 years		43.97 ± 24.56		26 (20–39)
	27.8	50	22.2	Contact frequency					
				≤5 times	53 (5–105)		0.002*c	28 (20–39)	0.000*b

34.9	58.1	7	0.019*d	>5 times	61 (11–117)			24 (20–39)	

Notes: (a) independent *T*-test, (b) Mann–Whitney, (c) Kruskal–Wallis, (d) chi-square, and (e) Fischer test. * Significant ($p<0.05$).

3.4. The Domains of ENSS, Z-SAS, and CD-RISC 25

The ENSS is reported to be made up of nine domains (see Table 4). The highest average scores were uncertainty concerning treatment (25.91 ± 15.33), followed by problems with patients (24.07 ± 10.77). In the Z-SAS instrument, the domain of affective symptoms has the highest median value. The hardiness aspect has the highest median resilience score of all other factors.

Table 4

Score on work stress, anxiety, and resilience of nurses based on domain on the ENSS, Z-SAS, and CD-RISC 25.

Domain	Mean ± SD	Median	Min–max
Work stress (ENSS)			
Death and dying	22.81 ± 12.19		0–60.71
Conflict with doctors	17.67 ± 12.64		0–60.00
Inadequate optional preparation	19.97 ± 14.44		0–58.33
Problems with peer support	13.2 ± 12.31		0–50.00
Problems with supervisors	16.55 ± 13.36		0–57.14
Uncertainty concerning treatment	25.91 ± 15.33		0–72.22
Problem with patients	24.07 ± 10.77		6.25–62.50
Workload	20.65 ± 11.96		0–63.89
Discrimination	4.29 ± 9.17		0–41.67
Anxiety (Z-SAS)			
Affective symptoms		6	5–10
Somatic symptoms		4	3–9
Cardiovascular system		2	2–5
Respiratory system		4	4–8

Gastrointerstinal system		1	1–3
Genitourinary system		1	1–3
Skin		3	2–6
Central nervous system		2	2–5
Resilience (CD-RISC 25)			
Hardiness		23	17–28
Coping		16	9–20
Adaptibility/flexibility		10	6–12
Meaningfulness/purpose		13	9–16
Optimism		6	3–6
Redulation of emotion and coping		6	4–8
Self-efficacy		6	6–8

3.5. Correlation between Work Stress, Anxiety, and Resilience

Pearson product-moment test results showed a significant association between work stress and anxiety (p value <0.05). The *r* value of 0.299 indicates a positive relationship between work stress and anxiety (see Table 5). Spearman's rank test stated that there was no significant correlation between anxiety and resilience (p value <0.643, *r* 0.47). Work stress and resilience had no significant correlation (p value: 0.643, *r*: 0.76).

Table 5

The correlation test between work stress, anxiety, and resilience in nurses.

Variables	Median (min–max)	Mean ± SD	*R*	p value
Work stress score		45.1 ± 24.3	0.299	0.002*a
Anxiety score	26 (30–39)		.	
Anxiety score	26 (30–39)		0.47	0.643[(b)]
Resilience score	81 (69–100)		.	
Works stress score		45.1 ± 24.3	0.76	0.643[(a)]

Notes: *Significant (p<0.05); (a) Pearson's test, (b) Spearman's rank test; *r*, coefficient correlation.

4. Discussion

4.1. Levels of Work Stress, Anxiety, and Resilience in Nurses

In this current study, most psychiatric nurses during the COVID-19 pandemic had work stress lower than the average score (<45.1). Research by Mo et al. [13] showed that 22.2% of nurses had scores >50, with the average work stress experienced by nurses of 39.91 points. Meanwhile, Baye et al. [14] stated that 90% of nurses in psychiatric wards are less likely to experience work stress than nurses working in outpatient care. The low level of work stress for health workers during the pandemic proves that they show professional devotion and altruism [15]. In line with the study by Ko et al. [16] in Taiwan, many nursing staff were dedicated to their work under the professional responsibility of caring for patients, even volunteering to be involved on the front lines during the SARS pandemic. However, these findings contradict the findings of Alnazly et al. [17], who discovered that 35% of nurses who handled patients with COVID-19 suffered severe stress.

In some mental health hospitals, inpatient psychiatric patients are placed in wards with many other patients. This condition makes social distancing hard to implement in inpatient wards because the rooms occupied by several patients are cramped and crowded. This suggests maintaining a social distance of 2 meters is less applicable and impractical for proper infection control in inpatient wards [18]. Furthermore, nurses tolerate aggressive behavior exhibited by patients, such as breaking protective glasses, tearing masks, and even spitting. The lack of preparedness in dealing with the COVID-19 pandemic has become a major source of stress for nurses. Foye et al. [18] stated that the use of PPE is a real challenge in emergencies; for example, the act of restraining a patient, where nurses may not have time to wear PPE or even PPE that pose a risk to nurses. So, devotion to the use of PPE guidelines as infection control is not maximally done. There is a need for further attention, guidance, and support for nursing staff in trying to manage the challenges of using PPE on the wards of patients at risk of suicide and keeping patients and staff safe. Many of them also have conflicts with professional ideals, such as feeling sad for not being able to treat patients as well as nurses in the ICU and dread spreading the virus to family members [4]. The stressors above significantly increase work stress for nurses.

Normal anxiety was assessed in 95.05% of participants, and none of them experienced severe anxiety or panic. Similar to the study of Neupane et al. [19] which found that 88.4% of nurses experienced normal anxiety and another 10.5% reported mild to moderate levels of anxiety. A survey in China revealed that less than half of healthcare personnel, notably female nurses caring for patients, exhibit signs of anxiety [2]. The findings of this study contrast with those of a meta-analysis performed by Al Maqbali et al. [20]; which revealed that 37% of nurses reported having anxiety across all 93 journals examined.

After all, the COVID-19 pandemic has been going on for more than two years. The Indonesian Ministry of Health set guidelines for the prevention and control of COVID-19 infection in 2020, whereby all health services are no exception to implementing these regulations including the use of PPE, infectious zones, flow of services, and so on. However, these guidelines often confuse nurses because they are hard to apply in psychiatric hospitals where the patients there have different criteria from other general patients. Meanwhile, the first COVID-19 vaccine for health workers began in early 2021. Until these data were collected, psychiatric nurses had received three doses of the vaccine. PCR swabs are carried out if the nurse shows symptoms or has contact with a COVID-19 patient. The Central Mental Health Hospital already follows the guidelines, which helps them reduce the level of anxiety among the nurses there. This supports the results of other studies by Hennein et al. [21] and Yeung et al. [22] that the absence of COVID-19 control guidelines in hospitals correlates with higher symptoms of anxiety.

The resilience level of nurses is mostly in the moderate category. Moderate resilience means that nurses have demonstrated a positive adaptation function in dealing with adversity during a pandemic. Nurses with higher resilience may be able to adapt to the difficulties of working during a pandemic and are less at risk of experiencing symptoms of trauma and disruption at work [23]. However, some nurses in this study lacked resilience (28.7%). Low resilience may be a sign that one needs to develop coping and adaptive skills to deal with adversity [12].

4.2. Differences in Work Stress, Anxiety, and Resilience in Nurses Based on Demographic Characteristics

Significant results were found regarding the difference between work stress and gender. Women have higher work stress scores than men. This is in line with the findings of Tsegaw et al. [24] in their research which revealed that

one of the factors is the higher role of women in the family and society. Therefore, there is a significant difference in contact frequency and work stress. Nurses who interact with patients more than five times each shift typically experience significant levels of stress. In this study, it was found that it is common for nurses to interact with patients more than ten times in a shift. According to Kisely et al. [25], the more frequently nurses contact patients, the more vulnerable they are to experience stress disorders, especially during a pandemic because nurses contact confirmed patients more often.

Participants aged less than 40 years showed a higher average stress score. Senior nurses can adopt healthy stress-coping strategies because they are more aware of the possibility of a pandemic and are more responsive to patients [26]. Kuo et al. [27] in their research found no relationship between work stress and education level. They continued by explaining that this occurred because the pandemic produced new issues that had never been encountered before, causing nurses with high and low educational levels to experience the same psychological effects.

Anxiety has a significant relationship with contact frequency. Tang et al. [28] reported that the correlation between contact frequency and traumatic stress experiences can make nurses more anxious. In this study, the more often nurses contacted patients, the lower the anxiety score. Higher anxiety scores occur in the age group under 40 years. This study is in contrast to the findings of Wang et al. [29], which stated that at age above 40, anxiety is 0.4 times higher than at age below. This indicates that as experience increases, the ability to regulate psychology will increase.

In this study, work experience did not significantly affect resilience either, but groups with >15 years of work experience showed higher levels of resilience. The results of this study are different from studies by Foster et al. [30] on mental health nurses in Australia which show a significant relationship between resilience and length of service. According to research by Wu et al. [31], nurses with more than 15 years of experience were more resilient. About 31% of the nurses in this study with fewer than 15 years of experience reported having low resilience. Nurses struggle to handle pressure, the risk of infection, the increased workload, and the risk of mental health disorders since they are less skilled at their professions [32].

Nurses who come with a diploma degree have lower resilience levels than those with a bachelor's degree. The difference between a diploma degree and a nursing bachelor's degree in Indonesia is that a diploma degree, also called vocational education, is more focused on practice and takes three years. Meanwhile, a bachelor's in nursing takes four years, focusing more on understanding theory and critical thinking. Also, nursing bachelors who will work in hospitals must go through clinical stages as an implementation of theory and practice in the field. The findings of Afshari et al. [33] on 387 nurses diverge from this result in that resilience and education level differed significantly. According to Ang et al. [34] and Jamebozorgi et al. [35], nurses have greater resilience with more education. The higher nurses' education level, the more efficiently they use social resources, such as learning to access resources and increasing their use, resulting in greater resilience. As stated by Afshari et al. [33], training is required for nurses to strengthen their skills and knowledge in dealing with the COVID-19 pandemic.

The previous study stated that males generally have a higher level of resilience than females [36, 37]. The same finding is found in this study that females have lower resilience. Male and female nurses differ in their resilience due to variances in coping methods in a cultural setting where women are responsible for the home and job while men are more focused as nurses [36].

4.3. The Domain of Work Stress, Anxiety, and Nurse Resilience Instruments

In this study, the first rank of work stress in the ENSS domain is uncertainty concerning therapy. The doctor's absence during a medical emergency, exposure to workplace safety and health, insufficient information from the doctor regarding the patient's medical state, and insufficient time to perform nursing assignments are all factors that could have an impact. The second is the problem with the patient domain. Nurses' work stress is increased by the patient's unreasonable requests and inappropriate behavior, which is typically verbal [5]. There are many psychiatric wards where patients are free to move around and interact with other patients. Nurses had difficulty isolating patients with behavioral deregulation from symptoms of mania and active psychosis during the COVID-19 pandemic. They also have difficulty explaining the risk of COVID-19 infection to patients and convincing them to follow

quarantine guidelines such as wearing masks and protective clothing, and performing COVID-19 tests [38, 39]. Affective symptoms of anxiety, such as fear, nervousness, and restlessness are associated with an increased risk of migraines, headaches, and muscle tension. In the current study, nurses have the highest median value on the hardiness aspect of the CD-RISC 25. According to Maramis and Cong [40], hardiness is a personality trait that has a defense function, so that when someone faces problems and workloads, they can do things that are considered appropriate to solve them. The results of this study indicate that nurses have low self-confidence, emotional regulation, and self-efficacy. A nurse needs to increase confidence in their abilities and control when facing a crisis or difficulty [41]. Characteristics such as self-control, expectations, and self-efficacy are significant contributors to nurse resilience [36, 41].

4.4. The Correlation between Work Stress and Anxiety, Resilience with Anxiety, and Work Stress with Resilience

These results support research in China and Turkey which shows that there is a significant relationship between work stress and anxiety; a positive value means that the higher the work stress, the higher the anxiety felt [13, 42]. Nurses who feel higher stress and anxiety will feel dissatisfied with their lives; besides that they experience physical and psychological exhaustion. Anxiety is an unpleasant emotional response to stress resulting from threats characterized by feelings of worry [43].

Pearson's correlation test showed no significant relationship between work stress and resilience. These results are different from those of the research by Hong et al. [9] in Korea. This happened because the nurses' work stress score in this study was below the average, while the research in Korea was conducted at the beginning of the pandemic, so it showed different results. Resilience is an adaptive coping strategy that can help reduce work stress and mental burden on health workers in response to treating patients infected with COVID-19 and preventing them from being infected with the virus during a pandemic [9].

Resilience is proven to have an important role in overcoming work pressure. In this study, there was no significant relationship between anxiety and resilience. According to studies conducted in Israel by Mosheva et al. [32], anxiety and resilience have a negative correlation. This implies that a nurse's resilience will be reduced the more anxious they are. This discrepancy in results came about because, in this study, most nurses did not experience anxiety.

5. Conclusions and Recommendations

This study provides information on the impact of COVID-19 on the psychosocial problems of psychiatric nurses. Nurses who provided nursing care to patients with mental disorders at the Central Mental Health Hospital during the COVID-19 pandemic had lower work stress scores than the average, experienced normal anxiety, and had moderate resilience scores. Work stress differs significantly depending on gender and contact frequency. Anxiety and contact frequency are significantly different, as are resilience and contact frequency. Work stress and anxiety have a considerable positive correlation. However, it should be noted that the sample was less diverse, and the number of participants was small. This study also presents the perspective of a psychiatric nurse.

We emphasize the findings in this study that psychiatric nurses need infection control guidance on infectious diseases such as COVID-19 inward service settings in mental health hospitals because patients and nurses have the right to safety and comfort from disease transmission. Also, when a pandemic occurs, the nurses do not need a long time to adapt to the illness, so the well-being of patients with mental disorders is not disturbed. Even though the results show moderate work stress and normal anxiety, they also need local support from ward leaders or hospital management in increasing their mental resilience and overcoming their psychosocial problems during a pandemic. Future research should consider demographic variations, larger sample sizes, and government policies regarding infectious outbreak guidelines. Apart from that, the psychosocial problems of psychiatric nurses can also be further investigated when there is no pandemic.

Acknowledgments

This research was supported and sponsored by the Nursing Study Program at the Faculty of Medicine, Public Health, and Nursing, Gadjah Mada University (No. 1690/UN1/FKK-MK/PP/PT/2021). The authors also thank the psychiatric nurses in the Mental Hospital Health, Yogyakarta, who participated in this study.

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DETAILS

Subject:	Psychiatric-mental health nursing; Demographics; Nursing care; Mental disorders; COVID-19
Editor:	Sílvia Caldeira
Publication title:	Nursing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023

Publisher:	Hindawi Limited
Place of publication:	New York
Country of publication:	United Kingdom, New York
Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437
Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article
Publication history :	
Milestone dates:	2023-02-13 (Received); 2023-06-17 (Revised); 2023-06-21 (Accepted); 2023-06-26 (Pub)
DOI:	https://doi.org/10.1155/2023/3689759
ProQuest document ID:	2834809115
Document URL:	https://www.proquest.com/scholarly-journals/psychosocial-problems-among-psychiatric-nurses/docview/2834809115/se-2?accountid=211160

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Last updated:	2023-07-10
Database:	Publicly Available Content Database

The Relationship between Metacognitive Beliefs with Clinical Belongingness and Resilience among Novice Nurses in Neonatal Intensive Care Units

Mitra Soltanian [1]
; Payegozar, Rasool [2]
; Paran, Maryam [1]
; Sharifi, Nasrin [3]
[1] Department of Nursing, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran [2] Student Research Committee, Shiraz University of Medical Sciences, Shiraz, Iran [3] Department of Epidemiology, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran

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ABSTRACT (ENGLISH)

Background. The neonatal intensive care unit (NICU) is a sensitive ward for nurses. However, the low nurse-to-patient ratio has led to the hiring of novice nurses into the critical areas such as NICUs. These nurses are in need of help in the clinical environment as they have no much experience caring the neonates in the real clinical setting. Therefore, it is necessary to address the individual and psychological capacities with the help of which a person can overcome the difficult situations. This study aimed to investigate the relationship between metacognitions, clinical belongingness, and resilience of novice nursing staff in NICU wards. *Method*. This study is a descriptive-analytical study, and the research samples were composed of 78 novice nursing staff of Neonatal Intensive Care Units from teaching hospitals. Samples were selected via a purposive sampling method. Research tools included demographic, Wells and Hatton metacognitive beliefs, Jones Levitt belonging, and Connor–Davidson resilience questionnaires. SPSS 22 software was used for data analysis. *Results*. The mean score of metacognitive beliefs in novice nursing staff was 92.67 ± 13.69, and it was 116.69 ± 19.11 for belongingness and 78.78 ± 14.73 for resilience. There is positive and significant relationship between metacognitive beliefs and belongingness ($p<0.019$, $r=0.265$). In addition, the relationship between metacognitive beliefs and resilience in novice nursing staff was positive and significant ($p<0.001$, $r=0.359$). *Conclusion*. There is a positive relationship between metacognitive beliefs with belongingness and resilience of novice nurses; nursing managers can consider educational metacognition workshops to enhance the sense of belongingness and resilience of novice nursing staff leading to improve their clinical performance in neonatal care.

FULL TEXT

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1. Introduction

Nurses are the first to recognize the risks and critical situations of infants and take action to address them in the Neonatal Intensive Care Units [1]. Nurses are one of the largest health care providers [2], but nursing shortage has led to the use of novice nurses in the health care system, who often enter real situations early, and caused job and environmental stress and reduced their satisfaction [1, 3]. In one study, the average ratio of nurses to infants in the Neonatal Intensive Care Unit in Tehran, the capital of Iran, one nurse for more than 4 babies, was reported [1]. Novice nurses have many problems in context, including having difficulty in concentrating, lacking focused attention, and failing to maintain moment-to-moment awareness. Novice nurses in clinical settings need help and do not know what is expected of them in real settings [4, 5]. In this way, they are not able to understand their situation and solve problems effectively [6]. However, novice nurses, in order to creatively solve problems, need skills that can help them in the proper and correct use of their information [7]. The novice nurses' past experiences acquired through their academic studies include factors to enhance them, and one factor is metacognition or having the talent or skill of metacognitive ability, which helps novice nurses use these experiences in new situations [8]. Metacognition is a

multifaceted concept that includes beliefs (knowledge), processes, and strategies that evaluate, monitor, or control cognition [9]. This knowledge is beliefs and theories held by people about their thinking, such as beliefs about the meaning of certain types of thoughts, the efficiency of memory, and cognitive control, and they are responsible for controlling healthy and unhealthy thoughts [10]. The results of some studies have shown that metacognitions are effective factors in the state of mental health. We can improve the situation by changing the metacognitions that increase the maladaptive ways of negative thoughts or increase the general negative beliefs [11, 12]. Thus, we can help people to structure their thinking and prepare themselves to accept their future roles [13]. Moreover, maintaining meaningful relationships with others is a permanent desire in humans, and people tend to communicate with each other for optimal performance [14].

The sense of belonging is one of the basic human needs that creates a sense of security and comfort. In general, people are trying to be accepted by others because the lack of communication with others has many cognitive, emotional, and behavioral consequences [15]. One nursing concept analysis defines the sense of belonging as the experience of a person's involvement in a system or environment so that a person feels that she is an integral part of that system or environment [16]. The absence of a sense of belonging can lead to problems such as low self-esteem and satisfaction, anxiety, depression, high level of stress, and increased tension in clinical practice [17, 18]. Belongingness is an important effect factor in workplace satisfaction, and this type of satisfaction is one of the main factors that determine nurses' resilience in difficult situation [19].

Resilience is one of the main abilities of humans enabling them to resist difficult conditions and mental pressures through effective adaptation to changes and stressful factors [20]. Warelo and Edward stated that 21st-century nurses need to skillfully develop their resilience to face professional challenges and ensure their mental health because resilience and resilient behaviors potentially help individuals to overcome negative experiences and turn these experiences into positive experiences [21].

Considering the annual employment of a large number of novice nursing staff in the medical care system and their predefined problems, it is necessary to provide solutions to improve their skills. The role of metacognition in solving problems, attitude towards problems, resilience against them, and clinical relevance in the path of gaining experiences and lack of research on the role of metacognition necessitates determining the role of each of these variables and in case of the presence of effective role to design programs to improve them. The lack of research studies that has investigated the relationship between metacognitive beliefs, belongingness, and resilience, especially in novice nurses, caused that this study was conducted to investigate the relationship between metacognition, belongingness, and resilience in novice nursing staff in Neonatal Intensive Care Units (NICUs).

2. Methods

The present study was a descriptive correlational study. The samples included 78 novice nursing staff working in Neonatal Intensive Care Units of three hospitals affiliated to Shiraz University of Medical Sciences. After obtaining permission from the Ethics Committee and Vice Chancellor for Research of Shiraz University of Medical Sciences, the researcher referred to the mentioned hospitals and selected the novice nursing staff who were eligible to enter the study by the purposive sampling method. It was decided that nurses with less than one year of work experience in NICU wards through the purposive sampling method entered the study. Other inclusion criteria for this study were as follows: having at least a bachelor's or master's degree in nursing or midwifery, working in the Neonatal Intensive Care Units of mentioned hospitals, and signing the informed consent form.

After obtaining informed consent from the samples, researcher provided the relevant questionnaires to novice nurses to complete. The ethics code of this research (IR.SUMS.REC.1400.217) was obtained from the Ethics Committee of Shiraz University of Medical Sciences.

In order to achieve the objectives of this study, demographic characteristic questionnaires, Wells and Hatton metacognitive beliefs, Jones Levitt belonging, and Connor–Davidson resilience questionnaires were used:

(1) *Demographic Information Questionnaire.* This questionnaire contains questions such as age, sex, marital status, field of study, and type of ward; the face validity of which has been approved by several professors and experts in neonatal nursing field.

(2) *Wells and Cartwright-Hatton Metacognitive Beliefs Questionnaire.* This questionnaire was designed in 2004 and has 30 questions in which each person answers four-choice questions (disagree, slightly agree, relatively agree, and strongly agree). These options are scored 1, 2, 3, and 4, respectively. This questionnaire has 5 subscales: cognitive conflict measures positive beliefs, cognitive self-awareness, uncontrollability, and the danger of thoughts and the need to control thoughts. A high score on this scale indicates a strong level of metacognition in the individual. A score between 30 and 60 indicates a weak level of metacognition, a score between 60 and 90 indicates an average level of metacognition, and a score between 90 and 120 indicates a strong level of metacognition in a person. Hatton and Wells have reported the Cronbach's alpha coefficient of this questionnaire and its components in the range of 0.72 to 0.93 and its retest reliability coefficient (with an interval of one month) of 0.73 [22]. Osoli et al. reported an internal consistency coefficient of 0.86 for this questionnaire [23]. Gharayeli and Saberi calculated the reliability of the tool using Cronbach's alpha test, which was 0.79, 0.77, 0.81, 0.80, and 0.83 for positive beliefs about worry, cognitive confidence, cognitive self-awareness, negative beliefs about the uncontrollability of thoughts, and beliefs about the need to control thoughts, respectively [24].

(3) *Levett–Jones Belongingness Questionnaire.* This questionnaire was developed by Levett–Jones and Lathlean in Australia in 2008. The questionnaire has 34 items and three subscales of self-esteem, continuity, and efficiency in the Likert scale with 5 options (1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always) [25]. A higher score indicates a greater degree of belongingness of the respondent to the clinical environment. The self-esteem subscale items include items 1, 3, 4, 7, 9, 10, 14, 17, 21, 23, 24, 27, and 33, and the subscale attachment includes items 8, 13, 15, 16, 25, 26, 28, 29, 30, and 34, and the subscale efficiency includes items 2, 5, 11, 18, 19, 20, 31, and 32. Items 6 and 12 do not include any subscales. The minimum and maximum scores are 32 and 160. This questionnaire has been translated and validated by Ashktorab et al. in Iran for the optimal use of other researchers. The stability of the tool was checked with the help of a test-retest, after two weeks and by completing the questionnaire by 25 nursing students and the internal consistency method using Cronbach's alpha method. The reliability of the tool was obtained by the test-retest repeatability method, $r = 0.70$. Cronbach's alpha for the whole tool was 0.90 and it was 0.88, 0.75, and 0.84 for the subscales of self-esteem, coherence, and efficiency, respectively. In the Persian version, the terms 26 and 10 were removed from the dimension of attachment and self-esteem according to the results of the factor analysis and are not included in the analysis of the results [26]. This questionnaire has been translated and validated by Mohammad et al. in Malaysia for the optimal use by other researchers. Twenty items from the original tool to measure the participants' belongingness experiences with colleagues, twelve similar items to measure the participants' belongingness experiences with other members of the health care team at work, and eight items were created through a literature review of previous studies on nursing and organization. Then, the content validity of the final questionnaire was tested and evaluated by a group of nursing personnel from two different hospitals. The revised scale has a Cronbach's alpha value of 0.93, and in further analysis, it was (0.89), (0.83), and (80/0) for 20 items on colleagues, 12 items on other members of the health care team, and 8 items on the organization [27].

(4) *Connor–Davidson Resilience Scale.* This scale was developed by Connor–Davidson in 2003. This scale includes 25 items based on factor analysis; five subscales including individual competence and adequacy (8 items), tolerance of negative effects and strength against stress (7 items), positive acceptance of change (5 items), self-control (3 phrases), and spiritual effects (2 phrases) are assigned. Scoring is also based on the Likert scale between completely incorrect = 0 and always true = 5. The maximum score is 100 and the minimum score is 0. For Connor–Davidson Resilience 25 questions, Normah in Iran showed that Cronbach's alpha coefficient of all questions is 0.88. The questions have good consistency with 8 questions which were 0.81 and 0.76, respectively, and Cronbach's alpha reliability coefficients for the subscales of stubbornness, belief, and optimism were reported to be 0.60, 0.55, and 0.36, respectively [28]. Javadian and Fathi reported the reliability of the resilience scale using Cronbach's alpha method as 0.86 [29]. Regarding its validity, using the factor analysis method, the calculation of each score with the total score showed that, except for the three questions that were higher, the coefficients of the other questions were between 0.51 and 0.61 [30].

2.1. Ethical Considerations

Ethical approval was obtained from the Local Research Ethics Committee of Shiraz University of Medical Sciences, Iran (Approval No. IR.SUMS.REC.1400.217). In the beginning, a verbal description of the study objectives was provided for novice staff and after the assurance of the confidentiality of their information, the written informed consent was obtained from participants.

3. Results

From 78 novice nursing staff working in Neonatal Intensive Care Units (NICUs), 43.6% of the staff are working in internal wards of NICUs with 93.5% of the novice nursing staff aged less than 31 years. All novice nursing staff in NICUs were female (no male nurses have worked in the Neonatal Intensive Care Units during this study) and 55.1% of them are single. The majority of these staff (97.4%) had a bachelor's degree (Table 1).

Table 1

Demographic characteristics among novice nursing staff of neonatal intensive care units.

Variables	Category	Frequency	Percentage
Age (years)	20–25	26	33.3
26–60	47	60.2	31–35
5	6.4	-	
Gender	Female	78	100
Male	0	0	·
Marital status	Single	43	55.1
Married	35	44.9	·
Education	Bachelor	76	97.4
Master or PhD	2	2.6	·
Total	78	78	100

The lowest score recorded for metacognition in novice nursing staff was 63 and the highest score was 125 with an average of 92.67, which indicated the high score of metacognitions. The lowest recorded score for the belongingness in novice nursing staff was 46 and the highest score was 141 with an average of 116.69, which indicated high belongingness in novice nursing staff. The lowest score of resilience in novice nursing staff was 14 and the highest score was 95 with an average of 72.87, which indicated high resilience in novice nursing staff (Table 2).

Table 2

The means and standard deviations of metacognition, belongingness, and resilience among novice nursing staff in NICUs.

Variables	*N*	Min. Score	Max. Score	Mean	SD
Metacognition	78	63	125	92.67	13.69
Belongingness	78	46	141	116.69	19.11
Resilience	78	14	95	72.87	14.73

Given the quantitative nature of the two indicators, Pearson's correlation test was used to determine the relationship between metacognition and belongingness. Pearson correlation coefficient of 0.265 shows a positive relationship between metacognition and belongingness. The significance level of Table 3 ($p<0.05$) shows the significance of this correlation coefficient at the 5% error level. In general, the results show that there is a relationship between metacognition and the belongingness of novice nursing staff in NICUs. Also, given the quantitative nature of the two indicators, Pearson's correlation test was used to determine the relationship between metacognition and resilience. Pearson correlation coefficient of 0.359 shows a positive relationship between metacognition and resilience. The significance level of the above table ($p<0.001$) shows the significance of this correlation coefficient at the 5% error level. In general, the results show that there is a relationship between metacognition and the resilience of novice nursing staff in NICUs (Table 3).

Table 3

The relationship between metacognition with belongingness and resilience among novice nursing staff in NICUs.

Variables	Description	Belongingness	Resilience
Metacognition	Correlation coefficient	0.265*	0.359
Significance level	0.019	0.001	No.

*Pearson correlation coefficient test.

According to the correlation coefficient ($r=0.265$), the relationship between metacognition and belongingness is positive and significant (Figure 1).

[figure(s) omitted; refer to PDF]

According to the correlation coefficient ($r=0.359$), the relationship between metacognition and resilience is positive and significant (Figure 2).

[figure(s) omitted; refer to PDF]

4. Discussion

This study examined the relationship between metacognition with belongingness and resilience in novice nursing staff in Neonatal Intensive Care Units in three hospitals. The results showed that there was a significant relationship between metacognition and belongingness. The results of this research are consistent with the study of Mousavi and Alvani [31] and Chamanabad et al. [32]. In fact, nurses involved in difficult issues and problems need to simultaneously use metacognition to understand concepts, find creative solutions, and make the decision, as well as belongingness to increase clinical skills. Both of the abovementioned variables will help nurses in difficult situations; thus, the two skills will help to solve problems more favorably. Some studies have shown that cognitive skills and knowledge enable people to understand concepts, solve problems, and make decisions [33, 34]. In other words, through metacognition, novice nursing staff can solve their problems when problems arise and cause confusion. This power in solving problems and overcoming problems increases the sense of belonging as an important factor in clinical learning.

The results showed that there was a significant relationship between metacognition with resilience. In a study by

Han in Korea, a significant relationship was established among metacognition, shared leadership, and resilience [35]. This study was consistent with the results of Hasani's study [36] and the study of Yoosefi and Karimipoor [37]. In explaining these findings, it can be said that belief and awareness of individual abilities and inabilities, which are considered to be part of the characteristics of the metacognition system, strengthen motivation, and initiate a series of actions to win the task. Before a person chooses a job and starts his or her efforts, she/he first collects and evaluates information about his or her capacities and abilities in that particular case. Doing this step allows him/her to consciously review themselves, whether she/he can adapt to perform a certain behavior in the face of problems or not. Also, it is also specified that how much she/he will try despite the existing problems and how long she/he will continue efforts in the specific field. In these conditions, people will achieve sufficient self-efficacy (characteristic of resilience) and will be able to cope with unpleasant or complex events more effectively, and finally, optimism and positive thinking will become active in the resilience process. By achieving resilience, people are more steadfast in their efforts, they have more confidence in their abilities, they do not drown in the waves of their doubts, they persevere in doing their tasks, and often the result of their performance is at a high level. Also, the activation of positive metacognition makes people less tense. It should be noted that the experience of tension in people causes them to engage in incompatible coping strategies (avoidance and suppression of thoughts) and the use of these strategies intensifies stress and negative emotions. This process makes people overestimate environmental threats and not have the ability to deal with problems, and this leads to a decrease in their resilience; therefore, it can be concluded that having metacognition knowledge can increase resilience.

The main limitation of this research is that the results cannot be generalized due to the small number of samples and hospitals.

5. Conclusion

This study showed that there is a significant relationship between metacognitive beliefs with clinical belongingness and resilience of novice nursing staff in NICU wards. In other words, the more metacognition a novice nurse has in the clinical environment, the better her/his belongingness and resilience. This also increases the belongingness to the clinical environment and increases the motivation of novice nursing staff to learn at the clinic. Therefore, it is suggested that health professionals improve the clinical belongingness and resilience of novice nursing staff in NICUs by developing training programs for novice nurses to increase the quality of care for neonates through the increasing of belongingness and resilience in nurses.

Disclosure

This article was extracted from M.S. thesis of the second author.

Acknowledgments

This article was financially supported by the Vice Chancellor for Research Affairs of Shiraz University of Medical Sciences, Shiraz, Iran. The authors would like to thank all novice nursing staff who participated in the study. The present study was funded by Shiraz University of Medical Sciences, Shiraz, Iran (Grant no. 23046).

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DETAILS

Subject:	Health care; Medical research; Self awareness; Mental health; Metacognition; Ethics; Intensive care; Self esteem; Nurses; Efficiency; Newborn babies; Nursing skills; Neonatal nursing
Location:	Iran
Editor:	Judie Arulappan
Publication title:	Nursing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023
Publisher:	Hindawi Limited
Place of publication:	New York

Country of publication:	United Kingdom, New York
Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437
Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article
Publication history :	
Milestone dates:	2022-09-28 (Received); 2023-05-26 (Revised); 2023-06-07 (Accepted); 2023-06-20 (Pub)
DOI:	https://doi.org/10.1155/2023/2949772
ProQuest document ID:	2832127075
Document URL:	https://www.proquest.com/scholarly-journals/relationship-between-metacognitive-beliefs-with/docview/2832127075/se-2?accountid=211160

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Last updated:	2023-07-13
Database:	Publicly Available Content Database

Psychometric Evaluation of the Postoperative Recovery Profile

Jakobsson, Jenny [1]

[1] Faculty of Health and Society, Department of Care Science, Malmö University, Malmö, Sweden

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ABSTRACT (ENGLISH)

Aim. To further evaluate the postoperative recovery profile regarding its psychometric properties. *Background*. The postoperative recovery profile is an instrument for the self-assessment of general postoperative recovery that has received increased attention within nursing research. However, psychometric evaluation during development was sparse. *Design*. Psychometric evaluation was done using classical test theory. *Method*. Data quality, targeting, reliability, and scaling assumptions were measured. In addition, confirmatory factor analysis was used to evaluate construct validity. Data collection was made during 2011–2013. *Result*. Data derived from this study showed acceptable quality; however, item distribution was skewed, with ceiling effects in the majority of items. Cronbach's alpha showed high internal consistency. Item-total correlations indicated unidimensionality, whereas six items demonstrated high correlations pointing at redundancy. The confirmatory factor analysis confirmed problems related to dimensionality as the five proposed dimensions were highly correlated with each other. Furthermore, items were largely uncorrelated with the designated dimensions. *Conclusion*. This study shows that the postoperative recovery profile needs to be further developed to serve as a robust instrument within nursing as well as medical research. Arguably, values from the instrument should not be calculated at a dimensional level for the time being because of discriminant validity issues.

FULL TEXT

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1. Introduction

Recovery after a surgical intervention has different meanings depending on whom it concerns. For the anesthesiologist, recovery means the return of vital reflexes when awakening from anesthesia [1, 2]. For a surgeon, short-term recovery equals home-readiness, while long-term recovery is conditioned by normal functioning and the resumption of normal, daily activities [3]. Consequently, there are several instruments measuring postoperative recovery from different points of view. However, patient-reported outcomes (PRO.s) are of utmost importance when measuring postoperative recovery; consequently, several instruments have been developed with that purpose during the past decades.

Patient-reported outcomes are measures that concern patients' health, quality of life, or functional status associated with healthcare or treatment and are reported by patients themselves [4]; (p.62). Acknowledging PROs can contribute to the delivery of high-qualitative, patient-centred care, and for this purpose, the need for patient-reported outcome measures (PROM) have increased. Using PROMs will provide a better understanding about the impact surgery has on patients' lives [5]. This, together with medical improvements, can advance the field of surgical care. Within the sphere of surgical research, there are numerous PROMs frequently used, for example, the Medical Outcome Study 36-Item Short-Form Health Survey (SF-36) [6]; the EuroQoL 5-Dimensions (EQ-5D) [7]; and the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC-QLQ) [8]. However, these are generic measures of health and should not be used if postoperative recovery is the specific outcome of interest. Instead, instruments that are developed with that specific purpose needs to be used and, most importantly, such instruments should be valid and reliable. Despite this, the majority of instruments are claimed to fail in robustness, leading to uncertainties when using the information provided [9]. In a systematic review aiming at evaluating psychometric properties of PROMs used in research for measuring recovery after abdominal surgery, Fiore et al. [10] found 22 different PROMs. In the review, 74% of the PROMs received only poor or fair quality ratings. Most frequently appraised were the three versions of quality of recovery (QOR-9, QOR-15, and QOR-40) and the abdominal surgery impact scale (ASIS); however, both instruments showed significant limitations regarding psychometric properties, except for the ASIS, which showed a high content validity. The use of PROMs for the evaluation of postoperative recovery is highly relevant. However, using instruments that are developed for a different reason or are poorly functioning might be counterproductive and result in low-quality care and reduced opportunities for enhancing patients' recovery. Most importantly, it will not benefit the patients.

One PROM that has increased in use within nursing research during recent years is the postoperative recovery profile (PRP) by Allvin et al. [11]. The instrument has been used for patients recovering from general and orthopedic surgery [12–15], heart and lung transplantation [16, 17], upper abdominal cancer surgery [18], gastric bypass [19], colorectal cancer surgery [20–22], trauma [23], and coronary artery bypass grafting [24]. The PRP was developed in Sweden, but the instrument has also been translated and used in the United States [25]. In the systematic review by Fiore et al. [10], the PRP received high ratings regarding content validity, but it could not be judged regarding another psychometric aspect since information in published studies from the development was missing.

The PRP was developed based on a concept analysis that provided a definition of postoperative recovery [26] as well as from focus group interviews with patients, nurses, and surgeons describing their understanding of postoperative recovery [27]. From the formulated definition and subsequent interviews, the developers selected 19 items and divided them into five dimensions. The PRP was assigned features to serve as a multi-item, multidimensional instrument for the self-assessment of general recovery after surgery. The PRP has been evaluated regarding content and face validity, reliability, and construct validity. The initial evaluation resulted in a minor revision of the layout, and the instrument showed high test-retest reliability [11]. Construct validity was tested on the final version pointing at a good construct validity [28]. However, later studies using the PRP have expressed concerns, especially about the scoring procedure when analyzing and interpreting results from the PRP, suggesting that the scoring might be insensitive, both at the item and dimensional levels [20, 21]. Further potentially problematic issues arise from reviewing the developmental process in more detail. First, despite some reported validity and reliability issues for two of the 19 initial items (*appetite changes* and *interest in surroundings*), all items were included in the final version of the instrument [11]. Second, it is unclear how the items were divided into five dimensions as that process is not described. Furthermore, the objective behind the scoring procedure at a dimensional level is not explained or justified.

The increasing use of the PRP within nursing research demonstrates a continuing need for an instrument that adequately measures PRO after surgery. However, to ensure the trustworthiness of studies building their results on the PRP, the instrument needs additional evaluation.

2. Methods

2.1. Aim

This study aims to further evaluate the postoperative recovery profile regarding its psychometric properties.

2.2. Design

A psychometric evaluation of a 19-item questionnaire intended to measure postoperative recovery.

2.3. Participants

This study utilizes data from a larger data collection prospectively following the recovery process in patients after colorectal cancer surgery. A consecutive recruitment was made at a university hospital in Sweden. Eligible patients had a cancer in the colon or rectum and were planned to undergo surgery to remove the tumor. Hence, participants were recruited at their preoperative informational visit before surgery. The inclusion criterion was the ability to understand and respond to the instrument in Swedish.

2.4. Data Collection Procedure

Patients who agreed to participate received the PRP instrument one month after surgery. The PRP was distributed by regular mail together with a prepaid envelope for return. Two reminders were sent to those who did not return the instrument.

2.5. Instrument

The PRP consists of 19 items that represent symptoms that can arise during the postoperative recovery process, for example, *pain*, *nausea*, or *problem with emptying the urinary bladder*. The items are formulated as statements, and patients are asked to indicate how much they experience each symptom, for example, “right now I feel a pain that is….” The response alternatives are “none,” “mild,” “moderate,” and “severe.” The recommended scoring at the item level is made by counting all the items responded to by “none.” The number of “none” responses constitutes an indicator sum and equals the level of recovery (Table 1). In order to assess recovery at a dimensional level, the

developers have described that level of recovery in each dimension should be based on the most severe problem reported by the patient [29]. For example, the dimension *physical function* includes five items. According to the proposed scoring procedure, level of recovery should be assessed as “severe” if the patient reports “none,” “none,” “severe,” “mild,” and “mild” since the most severe problem direct the scoring.

Table 1

Correspondence between number of items responded by “none” and level of recovery constituting the original scoring procedure as recommended by Allvin et al. [28].

Number of items	Level of recovery
19	Fully recovered
15–18	Almost fully recovered
8–14	Partly recovered
7	Slightly recovered
0–6	Not at all recovered

The instrument has a second version with 17 items instead of 19. It excludes the items concerning *sexual activity* and *reestablishing everyday life* and is intended to measure recovery while patients are hospitalized. For this current study, the version with 19 items was used since included patients responded to the instrument after discharge from hospital.

2.6. Data Analysis

According to the original recommended scoring procedure of the PRP at an item level, as described above, recovery should be evaluated by calculating an indicator sum based on items responded by “none.” However, there have been concerns about this scoring procedure because it excludes all possible answers except the “none” answers. To better reflect the full range of recovery, the scoring procedure at the item level was revised in this current study to include all response alternatives. Hence, a total score was calculated according to the following: “severe” = 1, “moderate” = 2, “mild” = 3, and “none” = 4. Thus, the total score could range between 19 and 76. A higher total score means better recovery. Current study did not propose a revised scoring procedure at the dimensional level.

The data were initially analyzed using classical test theory (CTT) to explore data quality, targeting, reliability, and scaling assumptions. In addition, a confirmatory factor analysis (CFA) was performed to evaluate construct validity. Classical psychometric tests were made using the IBM SPSS Statistics (version 28) and the CFA using IBM SPSS Amos (version 28).

2.7. Data Quality

A high proportion of missing data leads to uncertain results. Therefore, data quality was examined regarding missing data for items and computable scale scores. The proportion of missing data for items should be less than 10%, and in case of missing items, the scale score was considered as computable if more than 50% of the items were completed [30].

2.8. Targeting

In order to evaluate whether the PRP instrument targeted the full variance within the sample, floor and ceiling effects as well as skewness were calculated. Floor and ceiling effects were considered as present if the proportion of answered response alternatives exceeded 20%. Furthermore, the skewness range should be between −1 and 1 [30, 31].

2.9. Reliability

Because this study is based on previously collected data, no test-retest reliability was measured. Therefore, reliability was measured only regarding internal consistency using Cronbach's alpha. Alpha coefficients >0.8 were considered as acceptable [30, 32].

2.10. Scaling Assumptions

In a unidimensional scale, all items contribute equally to the total score. Furthermore, Likert-based items can be legitimately summed if they have approximately the same mean values and standard deviations (SD) [30]. To evaluate this, item response distributions were reviewed. In addition, item-total correlations were calculated. The correlation values were considered as satisfactory when ranging between 0.40 and 0.70 [31].

2.11. Construct Validity

To examine construct validity of the PRP dimensions and how well items represented the dimensions, a CFA was performed. Cases with missing items were excluded from the CFA; thus including 122 cases.

To indicate how well the five dimensions, proposed by Allvin et al. [28], fitted the sample data, the model fit was assessed using relative/normed chi-square statistics (CMIN/DF), goodness-of-fit statistics (GFI), adjusted goodness-of-fit statistics (AGFI), the standardized root mean square residual (SRMR), and the root mean square error of approximation (RMSEA). Furthermore, a comparative fit index (CFI) was used to test the hypothesis that all dimensions in the model were uncorrelated, thus pointing at good discriminant validity [33, 34]. Table 2 present the thresholds for model fit. In addition, correlations between dimensions as well as item loading scores were examined. As the PRP is supposed to be multidimensional, assessing different aspects of postoperative recovery, its dimensions were expected to be uncorrelated with each other. In contrary, the items within each dimension were expected to show high correlations with their respective dimension. Correlations between dimensions should therefore not exceed 0.80, and item loadings should be above 0.70.

Table 2

Model fit measures with recommended thresholds.

Measure	Results	Thresholds[†]
CMIN/DF	1.898***	<3 good
CFI	0.895	>0.95 great, >0.9 acceptable, and >0.8 sometimes acceptable
GFI	0.810	>0.95
AGFI	0.746	>0.8
SRMR	0.0672	<0.09
RMSEA	0.086***	<0.05 good, 0.05-0.1 moderate, and >0.1 bad

[†]Thresholds as recommended by Hu and Bentler [34]. ***p value <0.001.

2.12. Ethical Considerations

The study was approved by the Swedish Ethical Review Authority before the study started (No. 2011/451; 2021-06818-02). It was also conducted in line with the ethical principles expressed in the Declaration of Helsinki [35]. All eligible patients were approached with verbal and written information containing the aim of the study, a description of the study procedure, an assurance of confidentiality, and the right to withdraw at any time. Patients who did not return the instrument despite two reminders were considered as having withdrawn and did not receive further reminders.

3. Results

In all, 154 patients participated in the study. Those were equally distributed based on gender with a mean age of 69.4 years (SD 10.9). The majority of patients had undergone a low anterior resection of the rectum. Further participant characteristics are displayed in Table 3. Results from the psychometric evaluation are presented below.

Table 3

Patients' characteristics.

Characteristics	
Gender (*n*, %)	
Male	79 (51.3)
Female	75 (48.7)
–	
Age (years)	
Mean (SD)	69.4 (10.9)
–	
Length of stay (days)	
Mean (SD)	10.1 (4.9)
–	
Duration of surgery (minutes)	
Mean (SD)	276.9 (119.7)
–	
Type of surgery (*n*, %)	
Low anterior resection of rectum	59 (38.3)
Abdominoperineal rectal resection	31 (20.1)
Colectomy	2 (1.3)
Left-sided hemicolectomy	5 (3.2)
Right-sided hemicolectomy	34 (22.1)
Sigmoid resection	23 (14.9)

–	
PRP total score[†]	
Mean (SD)	61 (10.5)
Md	64
Min-max	27–76

PRP: the postoperative recovery profile, [†]total score was used as a scoring procedure in the current study.

3.1. Data Quality

The percentage of missing data for items was acceptable varying from 0 to 1.9%, except for the item *sexual activity*, which had 15.6% missing data (Table 4). The proportion computable scale score was 79.2%.

Table 4

Descriptive statistics for the items within the PRP instrument.

Item	Frequency distribution of response categories[†], %				Missing, *n*(%)	Valid, *n*(%)	Item mean	Item SD	Md	Skewness	Item-total correlation
1	2	3	4	[#]1. pain	2.0	13.8	45.4	38.8	2 (1.3)	152 (98.7)	3.21
0.751	3	−0.653	0.515	[#]2. Nausea	0.6	5.2	15.6	77.9	1 (0.6)	153 (99.4)	3.72
0.590	4	−2.174	0.509	[#]3. Gastrointestinal function	4.5	13.6	33.1	46.8	3 (1.9)	151 (98.1)	3.25

0.864	3	−0.938	0.355	#4. Fatigue	3.2	32.5	45.5	17.5	2 (1.3)	152 (98.7)	2.78
0.771	3	−0.043	0.655	#5. Muscle weakness	3.9	22.1	48.1	26.0	0 (0)	154 (100)	2.96
0.799	3	−0.396	0.655	#6. Appetite change	5.8	13.0	34.4	46.8	0 (0)	154 (100)	3.22
0.887	3	−0.961	0.631	#7. Sleeping difficulties	7.1	22.1	35.1	35.7	0 (0)	154 (100)	2.99
0.932	3	−0.526	0.598	#8. Anxiety and worry	7.1	16.9	30.5	44.8	1 (0.6)	153 (99.4)	3.14
0.946	3	−0.798	0.727	#9. Feeling down	7.8	13.0	31.2	46.8	2 (1.3)	152 (98.7)	3.18
0.945	3	−0.950	0.769	#10. Reestablishing everyday life	11.0	22.7	37.7	27.9	1 (0.6)	153 (99.4)	2.83

0.965	3	−0.408	0.709	#11. Sexual activity	22.1	9.7	14.9	37.7	24 (15.6)	130 (84.4)	2.81
1.258	3	−0.436	0.530	#12. Social activities	5.2	14.9	31.2	46.8	3 (1.9)	151 (98.1)	3.22
0.894	3	−0.900	0.725	#13. Personal hygiene	5.2	20.8	73.4	99.4	1 (0.6)	153 (99.4)	3.69
0.567	4	−1.650	0.646	#14. Interest in surroundings	1.3	3.9	9.7	83.8	2 (1.3)	152 (98.7)	3.78
0.574	4	−2.937	0.536	#15. Bladder function	3.9	9.1	20.8	64.9	2 (1.3)	152 (98.7)	3.49
0.822	4	−1.554	0.442	#16. Mobilization	2.6	13.0	35.7	48.1	1 (0.6)	153 (99.4)	3.30
0.795	3	−0.913	0.729	#17. Feeling lonely/abandoned	2.6	8.4	18.8	70.1	0 (0)	154 (100)	3.56

0.758	4	−1.730	0.713	#18. Dependence on others	1.3	11.7	23.5	54.5	0 (0)	154 (100)	3.40
0.746	4	−1.003	0.674	#19. Difficulties in concentration	0.6	8.4	32.5	57.8	1 (0.6)	153 (99.4)	3.48

n = number; SD = standard deviation; md = median; †response categories were 1 = severe, 2 = moderate, 3 = mild, and 4 = none.

3.2. Targeting

Regarding the total score, there were no floor and ceiling effects present (0.6% and 3.9%, respectively). However, the item distribution was skewed (−1.167) with a total mean score (62.27) close to the maximum value. Reviewing each item revealed considerably high proportion of ceiling effects in all items except one (ranging from 17.8% to 84.9%), pointing to the instrument being unspecific (Table 4).

3.3. Reliability

Cronbach's alpha was 0.927, indicating high internal consistency in the sample. If the item *gastrointestinal function* was deleted, the alpha would only be slightly improved (0.929).

3.4. Scaling Assumptions

In general, mean scores were high (ranging from 2.78 to 3.78), but item response distributions showed relatively equivalent mean scores and SDs, justifying the items to be summed. One item, *sexual activity*, presented an SD of 1,258, which was considerably higher than those for other items. Item-total correlations exceeded 0.40 for all items except one with a slightly lower, but still acceptable, correlation (0.355). This indicates that the instrument might be unidimensional. Moreover, there were six items with a correlation >0.70, indicating a potential redundancy (Table 4).

3.5. Construct Validity

In the CFA, model fit showed a generally acceptable fit to sample data (Table 2). The GFI and AGFI were lower than the desirable amount. The CFI was close to acceptable.

As displayed in Figure 1, high correlations between dimensions were shown, except between the dimension physical function and dimension psychological function (0.71) and between the dimension psychological function and dimension social function (0.79). Furthermore, most items showed low correlations with their respective dimensions. The highest correlations were seen for item 8 (*anxiety and worry*) and item 9 (*feeling down)* and the dimension *psychological function* (0.88; 0.93), proving them useful for measuring the psychological aspects of recovery. Moreover, item 12 (*social activities)* showed acceptable correlation with the designated dimension *social function* (0.80).

[figure(s) omitted; refer to PDF]

4. Discussion

The study by Fiore et al. [10] indicates that there is an apparent risk that weak instruments are being applied in research and for clinical decision making. When the PRP was developed, it initially demonstrated promising results regarding its psychometric properties, but it was never fully evaluated. The results from this study clearly show that the PRP has potential but needs to be further developed.

A good instrument should have the ability to target the full variance within the sample. If not, valuable information is lost. Therefore, the previously suggested scoring procedure, namely counting the “none” responses to produce an indicator sum, is problematic as it only considers one response option. Hence, targeting becomes limited. In addition, by using such a scoring procedure, it could be argued that one does not measure postoperative recovery. Instead, it measures patients that are more or less fully recovered, and doing so is of minor scientific and clinical value. Scientifically, there is a need to discover the normal pattern of recovery, and clinically, there is a need to identify patients who do not follow the expected, normal pattern. In this study, the total score was calculated, and the results showed that the data had a positive skewed item distribution. Although there were no ceiling effects regarding the total score, the total mean was close to the maximum score. At an item level, there was a considerable high proportion of ceiling effects for almost all items. This is another argument for not using the previously proposed scoring procedure, only accounting for the “none” options, but beyond that, the results suggest that the scaling does not satisfy criteria for acceptability [30]. Despite changing the scoring procedure, there are still problems with covering the entire range of the scale. It might be that the response options are too few, although it has been discussed whether an increase in the number of response options will enhance validity if the response options are unable to distinguish differences [36]. If going forward with the development of the PRP, it would be beneficial to test an expansion of the response alternatives to include at least five options as well as check that the wording of the items functions as intended. Skewness and ceiling effects could, of course, also depend on the respondents feeling quite well one month after surgery and therefore selecting the “none” response alternative more frequently, although, this is not the most likely explanation, as colorectal cancer surgery is a major procedure. Despite ceiling effects at the item level, all response alternatives were used for all items. In addition, there was an acceptable rate of missing items, pointing to good data quality. One exception was the item measuring *sexual activity*. This item demonstrated a high proportion of missing answers. Questions concerning sexuality are known to be sensitive and sometimes experienced as intrusive. Consequently, respondents might refrain from answering [37]. Earlier research has acknowledged sexuality as a problem area after colorectal surgery that is often disregarded by healthcare [38, 39]. Therefore, questions about sexuality and sexual function should be asked in a proper way to encourage respondents to answer. This underpins the importance of checking the wording of items during an instrument’s development, for example, by conducting cognitive interviews.

The PRP was developed as a multidimensional instrument that includes five dimensions. However, it is not described anywhere how the division was made, and in this study, item-total correlations showed signs of unidimensionality. The following CFA confirmed problems with discriminating dimensions as the proposed dimensions were strongly correlated with each other. This indicates that the dimensions cannot be calculated separately because they likely do not reflect different aspects of recovery. In addition, most items had low correlations with their designated dimensions, which means that they are weak indicators. The PRP is intended to measure aspects of postoperative recovery. However, theoretical conclusions that can be drawn from such models are dependent on the direction of the causality between items and dimensions, and misspecification can lead to Type I or Type II errors [40]. Because the multidimensionality of the PRP is associated with great uncertainty, recovery should not be calculated at a dimensional level when using the current version of the PRP.

4.1. Methodological Limitations

A potential methodological limitation is the relatively low sample size ($n = 154$). According to the COSMIN study design checklist, a sample of at least 100 persons would be sufficient to produce methodologically sound estimates [41]. Regarding the CFA, it has been argued that model fit measures are sensitive to sample size. For example, chi-square statistics performed in large samples tend to reject the models, whereas small samples result in lack of statistical power. However, the measures for model fit that were reported in this study function well with small samples [33].

5. Conclusions

The PRP is an instrument that has shown promising properties during development and initial testing. However, the results of this study indicate that the instrument needs to be further developed and undergo a thorough psychometric

evaluation before it can be used as a reliable and valid tool. As a suggestion, future studies should test measurement functioning in more depth, preferably using modern test theory. Furthermore, future studies should also focus on a revision of the scoring procedure at a dimensional level. However, discriminant validity issues need to be solved first, and meanwhile, recovery should not be calculated or reported at a dimensional level.

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DETAILS

Subject:	Patients; Quality of life; Validity; Cancer surgery; Bone surgery; Quantitative psychology; Questionnaires; Missing data; Data collection; Abdominal surgery; Abdomen; Colorectal cancer; Systematic review; Validation studies; Clinical outcomes; Recovery (Medical)
Location:	Sweden
Editor:	Claire Newman
Publication title:	Nursing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023
Publisher:	Hindawi Limited
Place of publication:	New York
Country of publication:	United Kingdom, New York

Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437
Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article
Publication history :	
Milestone dates:	2023-02-13 (Received); 2023-05-08 (Revised); 2023-05-10 (Accepted); 2023-05-29 (Pub)
DOI:	https://doi.org/10.1155/2023/3745570
ProQuest document ID:	2824557964
Document URL:	https://www.proquest. com/scholarly-journals/psychometric-evaluation-postoperative-recovery/docview/2824557964/se-2?accountid=211160
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Last updated:	2023-06-19
Database:	Publicly Available Content Database

Discharge against Medical Advice at a Teaching Hospital in Ghana

Bayor, Surazu [1]
; Korsah, Albert Kojo [2] [1] Nursing and Midwifery Training College, Zuarungu, Ghana [2] Tamale Teaching Hospital, Tamale, Ghana

ProQuest document link

ABSTRACT (ENGLISH)

Introduction. Discharge against medical advice is a global phenomenon where patients voluntarily terminate their consent to medical care before the medical team declares them fit for discharge. The phenomenon adversely affects the delivery of quality health care. *Methods*. A retrospective study was conducted at a Ghanaian teaching hospital involving patients who were admitted to the emergency settings within a 2 years period. Data were retrieved from the hospital records and patients discharged against medical advice were identified and studied. Data were cleaned and coded with Excel application and analyzed with SPSS version 23. *Results*. A total of 8,565 admissions were made into the ward within the period under review with 210 patients been discharged against medical advice. The prevalence rate was 2.5% with high prevalence seen in male and younger populations. Fractures and head injuries were the commonest conditions for which patients requested to be discharged against medical advice, whilst financial constrains and preference for herbal treatment were the major factors for which patients requested to be discharged against medical advice. *Conclusion*. Discharge against medical advice exists and negatively affects the delivery of quality health care in the Ghanaian health sector. Education especially towards at-risk groups such as the younger populations and patients with fractures as well as effective communication between medical team and patients and their families are some proposed measures to reducing the prevalence and negative impacts associated with discharges against medical advice.

FULL TEXT

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1. Introduction

Often times, physicians are challenged with patients and family who demands to be discharged home when it is obvious the conditions are not medically fit for discharge [1]. Discharge against medical advice (DAMA) is a global phenomenon with a prevalence rate of more than 2% of all hospital admitted cases according western literature. The prevalence rates may range from 0.3% to 25.9% depending on factors such as geographical history, medical condition, and social status of patients [2]. In comparison, DAMA cases are reportedly higher in developing countries than developed nations. A study conducted in Nigeria reported that, 53.1% of participants requested DAMA within the first 24 hrs of admission [3].

DAMA is defined as the situation where by a patient and family abruptly terminate their consent to treatment and hospitalization before the medical team declares them fit for discharge. The situation usually present as an ethical dilemma to the medical team, considering the patients autonomy to treatment and the medical team's intention to do good [4].

Terminating treatment before being medically fit has unavoidable consequences. Individuals discharged against medical advice forms an at-risk group of both mortality and morbidity [5]. Asthmatic patients who were discharged against medical advice had a four times higher risk of returning to the emergency unit within a month. Most often than not, patients who leave against medical advice return to the health facility with almost always the same illness for which they were initially admitted [6]. In a retrospective study of patients with myocardial infarction (MI), patients who were discharged against medical advice had a 40% higher risk of death or readmission for MI or angina within two years of after discharge.

Several factors compel patients to seek discharge against medical advice. Understanding these factors enables health providers to identify patients at higher risk of seeking DAMA and into intervene appropriately [4]. Cost of treatment, hospital protocol, lack of health insurances, preference of other treatments to modern medicine, fear of amputation, and treatment near home were cited as the major reasons patients seek DAMA [7].

Some prevention strategies to help reduce the prevalence of DAMA have been reported in various literatures. Health providers are advised to formulate management plans that includes the patient in his or her care. Including patients in clinical decisions can help address their extraclinical concerns leading to an agreement with management plan [6]. A 30% decrease in DAMA was reported when a nurse plays the advocacy role for psychiatric patients. The

responsibilities of the nurse advocate was to address patients' concerns and fears about their admission [4]. Positive attitudes to clients, reducing waiting time at health facilities and involving social workers have been identified as some factors to reduce the incidence of DAMA [6].

The phenomenon of DAMA has not been adequately explored in Ghana [8], this study therefore seeks to lay the foundation for future studies on discharge against medical advice. The study seeks to explore the prevalence of DAMA in a Ghanaian tertiary health care facility, the at-risk groups for DAMA and the factors that compels patients and families to request for DAMA.

2. Methods

2.1. Study Design

A descriptive retrospective study was conducted involving a review of admissions into the accident and emergency unit from January 2020 to December 2021. Patients who were discharged against medical advice, children, adults and the aged, were identified and included in the study. However, patients who requested for DAMA and later rescinded on their decision upon counselling from the medical team were excluded from the study.

2.2. Study Settings

The study was conducted at the Accident and Emergency unit of the Tamale Teaching Hospital, a Tertiary Health Care referral facility located in Tamale, the administrative capital of the northern region of Ghana. The hospital was established in 1974 to serve as a regional hospital for the northern region. In 2005, the Ministry of Health, Ghana Health Service (GHS) in partnership with the northern regional coordinating council upgraded the facility to a Teaching Hospital, the third in Ghana. The facility serves as the main referral center for the five regions of the north and sections of volta and Ahafo regions [9].

As the third largest tertiary health facility in the country, the hospital has specialized medical, surgical, and gynecological departments. As a teaching hospital, the facility engages in the training of all caliber of health personnel as well as a center for medical research.

The accident and emergency ward is an international standard emergency ward with approximately 50 bed capacity. The accident and emergency ward follows the international triaging system, where patients are categorized and attended to according to the severity of their conditions. The ward is divided into four units, often referred to as zones which includes triage, red, orange, and yellow zone. The triage zone is the unit where patients reporting to the facility are received, attended to, and sorted according to the severity of their conditions. The red zone refers to the resuscitation room for emergency management. Patients admitted into the red zone should obtain a triage score of 7–9. Orange zone refers to the patient waiting area for urgent management. To be admitted into this zone, patients should obtain a triage score of 5-6. The yellow zone refers to the patient waiting area for management. Patients must obtain a triage score of 3-4 to be admitted into this zone [10]. Patients are into the various zones according to the severity of their conditions which is decided by their triage scores. The ward receives cases referred from the various regions of the north and sections of volta and Ahafo regions. The ward manages both adult and paediatric medical and surgical conditions.

The Ghanaian health systems uses the national health insurance system, where subscribers are expected to be provided with some basic services at a cost covered by the insurance providers. However, challenges confronting the insurance system results in subscribers paying out of pocket for services such as medications, laboratory investigation, and treatment [11].

2.3. Sample Size Determination

All patients who requested for DAMA at the accident and emergency ward and were discharged against medical advice during the period under review were included in the study. This was obtained by reviewing electronic records that were obtained at the time of granting the DAMA request.

2.4. Data Analysis

Data retrieved from the records department of the facility was analyzed. Data was first entered into Excel application, cleaned, coded, and transferred into Statistical Package for Social Sciences (SPSS) version 23 for analysis.

2.5. Ethical Consideration

Before the data was retrieved and analyzed, permission was requested from the management of the facility to use the data. Permission was subsequently granted before the analysis proceeded. However, been a retrospective study, the authors lacked the opportunity to seek consent from individual patients as they had already been discharged during the study.

3. Results

3.1. Participant's Demographics

A total of 8,565 admissions were made into accident and emergency ward within the 2 year period under review. A total of 210 patients requested and were discharged against medical advice, a total of 165 of the patients who were discharged against medical advice were males. This constitutes 78.6% of the total DAMA patients. The female population was 42 patients, representing 20.3% of patients. Most of the patients who were discharged against medical advice were the middle age population. Patient below the ages of 50 yrs were 159, which constitutes a vast 84.5%. The elderly population, those above the age of 50 yrs constitutes the remaining 15.5%.

For educational level, patients whose consent forms were signed were regarded as been educated whilst those whose consent forms were thumb printed were regarded as not educated. In this regard, 33.3% of patients discharged against medical advice were educated whilst 26.2% had no formal education. The results are presented in Table 1.

Table 1

Patient demographics.

Demographics	Frequency	Percentage (%)
Gender		
Males	165	78.6
Female	42	20.3
Missing	3	1.2
Total	207	98.8
–		
Age		
0–10	17	8.1
11–20	28	13.3
21–30	51	24.3
31–40	43	20.5
41–50	29	13.8

51–60	10	4.8
61–70	8	3.8
71–80	10	4.8
81–90	3	1.4
Missing	11	5.1
Total	199	100
–		
Education		
Educated	70	33.3
Not educated	55	26.2
Missing	85	40.5
Total	210	100

According to the accident and emergency system, patients are admitted into various wards described by color codes according to the severity of their conditions. The red zones receive patients who require immediate and urgent care as their conditions are severer. The orange zone receives patients with less severe conditions than the red zone, whist the yellow zone receive patients with the least severe conditions among the three. The color codes used are red, orange, and yellow. 25.2% of the patients were admitted to the yellow zone, 63.8% were admitted to the orange zone, whilst 5.2% were admitted to the red zone as illustrated in Table 2.

Table 2

Various zones at the emergency and their rates of DAMA.

Zone	Frequency	Percentage (%)
Yellow zone	53	25.2
Orange zone	134	63.8
Red zone	11	5.2
Missing	12	5.7
Total	210	100

Majority of the patients 39.0%, prior to been discharged against medical advice have been managed for various degrees and types of fractures. 11.4% have been managed for head injuries, 8.6% for CVA, 4.3% for respiratory conditions such as pneumonia, asthma, and COPD, 8.6% for various degrees of lacerations, and 21.4% for various other conditions such as burns, snake bites, and esophageal cancer. 6.7% of the patients did not have their medical diagnosis documented. The results are shown in Table 3.

Table 3

Common conditions for which DAMA was requested.

Condition	Frequency	Percentage (%)
Fracture	82	39.0
Head injury	24	11.4
CVA	18	8.6
Lacerations	18	8.6
Respiratory conditions	9	4.3
Others	45	21.4
Missing	14	6.7
Total	210	100

Several factors compelled patients to request for discharge against medical advice. Notable among them was financial constraints. This was so widespread that it was categorized according to what patients were constrained to afford, such as medications, investigations, and surgery. Other compelling factors were the preference for herbal treatment, domestic issues, fear of interventions etc. The results are displayed in Table 4.

Table 4

Factors influencing DAMA.

Factors	Frequency	Percentage (%)
Prefer herbal treatment	59	28.1
Cannot afford investigations	49	23.3
Cannot afford medications	12	5.7
Cannot afford surgery	5	2.4
General financial constrains	20	9.5

Fear of interventions	6	2.9
Domestic issues	5	2.4
Others	9	4.3
Missing	45	21.4
Total	210	100

4. Discussions

A total of 8565 patients were admitted within the period under review. The prevalence rate of DAMA was observed to be 2.5%. This prevalent rate is similar to that reported from Nigeria, where 4.7% were reported to have been discharged against medical advice [12]. This may be attributed to the similarities in socioeconomic state of the study settings. In neighboring Ivory coast, however, DAMA prevalence was reported to be as a high as 8.6% [7] This prevalence rate is, however, higher than a similar retrospective study conducted in Saudi Arabia, which reported a DAMA prevalence of 1% [13].

The male gender constituted a larger percentage of those who requested for DAMA. This can be attributed to the fact that, most of the patients were been managed for fractures and head injuries resulting from road traffic accidents (RTAs) involving motorbikes, of which males are mostly victims. Men are challenged with socioeconomic responsibilities of family upkeep. Females are also reported to be more compliant with medical staff than their male counterparts. Similar findings were also reported from a study conducted at an emergency department in Lebanon [14].

Children below the ages of 20 yrs and the aged above 50 yrs constitute 30% of DAMA patients. This may be due to the fact that, children are mostly under parental care, and hence lacks the consent to request for DAMA. The elderly on the other hand are more compliant with medical treatment. Age has been reported to be significantly associated with DAMA [15]. Majority of the patients who requested and were granted DAMA were observed to be educated. Similar findings were also reported from Nigeria [15] and Iran [16].

The mean period of stay within which DAMA was requested was five days on admission. Patients and their families are expected to have exhausted the finances within this period, hence their decision to opt for DAMA.

Prior to their request to discharge against medical advices, majority of the patients were managed for fractures and head injuries. This is attributed to the fact that, the commonest mode of transportation within the Tamale metropolis is motorcycles which mostly results in RTAs. Other notable conditions for which patients were discharged against medical advice were CVA, hypertension, and respiratory conditions such as pneumonia and chronic obstructive pulmonary disease (COPD). Burns, snake bites, electrocution, esophageal cancer, and hemorrhoids were also among the conditions for which patients sought DAMA. These findings agreed with a similar study in Nigeria where 88.5% of patients who were discharged against medical advice were cases of fractures [5]. Studies from Lebanon, however, reported that only 9.8% of patients discharged against medical advice were as a result of trauma, thus fractures [14].

Various reasons were observed to have pushed patients and their families to seek for DAMA. Notable among these compelling factors was financial challenges. Financial constraints have been cited as a major factor for DAMA, especially in African countries [3]. Financial constraints were of varying degrees. Some patients and their families were financially constrained in their abilities to purchase prescribed medications, others were constrained to undergo surgical procedures, whilst others could not afford to undergo various laboratory investigations, yet some other patients were generally constraint and could not afford neither medications nor investigations. Financial constraints was however not a major contributor to DAMA as it only accounted for 7.9% of DAMA cases in Lebanon [14].

Another major factor that compelled patients to request for DAMA was their preference for herbal treatment.

Preference for herbal treatment has been reported in DAMA studies involving orthopedic patients [17]. This can be attributed to the general belief that; traditional bone setters are more effective in managing fractures than the modern system of medicine. Despite the level of counselling from the medical team, nothing seems to dissuade patients with fractures from heading to herbal healers. In neighboring Nigeria, 77.1% of patients who took DAMA indicated that, their next destination of care will be herbal medicine practitioners and traditional bone setters [5]. Studies on DAMA from an orthopedic hospital in Nigeria reported that, 62.1% of patients who requested for DAMA indicated traditional bone setters as their next destinations [17].

Other compelling DAMA issues worthy of note includes domestic issues such as the need to take care of families, the need for treatment near home, patients not feeling comfortable in the wards, perceived recovery, perceived poor prognosis, and fear of interventions such as chest tube thoracotomy.

5. Conclusion and Recommendations

Discharge against medical advice has a high prevalence in Ghana and its consequences in the delivery of quality health care cannot be overemphasized. The trend which is more prevalent in developing and emerging economies including Ghana adversely affects health care delivery, causing complications and mortalities as well as increasing cost of care. Hospital administrators, clinicians, and other health care workers should make efforts to increase awareness on the consequences of DAMA such as preventable deaths, increased cost, and patient readmissions. Stakeholders in health can develop comprehensive legislations to clinicians and health institutions to regulate the prevalence and consequences of DAMA. Public education on the need to comply with medical care, streamlining the activities of traditional medicine dealers, efficient and effective communication between staffs and patients, and most importantly, providing financial assistance to needy patients are some proposed measures to reduce the impacts of DAMA.

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DETAILS

Subject:	Regions; Patients; Health facilities; Older people; Demographics; Teaching hospitals; Consent
Location:	Ghana
Editor:	Judie Arulappan
Publication title:	Nursing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023
Publisher:	Hindawi Limited
Place of publication:	New York
Country of publication:	United Kingdom, New York
Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437

Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article
Publication history :	
Milestone dates:	2022-05-19 (Received); 2023-03-23 (Revised); 2023-04-03 (Accepted); 2023-04-14 (Pub)
DOI:	https://doi.org/10.1155/2023/4789176
ProQuest document ID:	2804960897
Document URL:	https://www.proquest.com/scholarly-journals/discharge-against-medical-advice-at-teaching/docview/2804960897/se-2?accountid=211160

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Last updated:	2023-04-24
Database:	Publicly Available Content Database

Investigation of Caring Behavior and Caring Burden and Their Associated Factors among Nurses Who Cared for Patients with COVID-19 in East Guilan, the North of Iran

Darvishpour, Azar [1]
; Shiva Mahdavi Fashtami [2] [1] Department of Nursing, Zeynab (P.B.U.H) School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran; Social Determinants of Health Research Center, Guilan University of Medical Sciences, Rasht, Iran [2] Pirouz Hospital, Guilan University of Medical Sciences, Rasht, Iran

ProQuest document link

ABSTRACT (ENGLISH)

Background. Nurses experience caring burdens, which can affect their caring behaviors. Caring for highly infectious patients, in particular COVID-19, is a new phenomenon and little is known about it. Considering that caring behaviors can be influenced by various factors and cultural differences of the society, it is necessary to conduct studies about caring behaviors and caring burdens. Thus, this study aimed to determine caring behavior and caring burden and their relationship with some associated factors among nurses who cared for patients with COVID-19. *Materials and Methods*. This cross-sectional, descriptive design study was conducted by census sampling on 134 nurses working in public health centers in East Guilan, the north of Iran, in 2021. The research instruments included the Caring Behavior Inventory (CBI-24) and the Caregiver Burden Inventory (CBI). Descriptive and inferential statistics were used to analyze the data using SPSS software version 20 with a significant level of 0.05. *Results*. The mean score of caring behavior and caring burden in nurses was 126.50 (SD = 13.63) and 43.65 (SD = 25.16), respectively. There was a significant relationship between caring behavior and some demographic characteristics (education, place of living, and history of COVID-19) and between caring burden and some demographic characteristics (housing status, job satisfaction, intention to change job, and history of COVID-19) ($p < 0.05$). *Conclusions*. Findings showed that despite the new emergence of COVID-19, the caring burden on nurses was moderate and they had good caring behavior. Despite these results, it is necessary for the relevant managers to pay special attention to protecting health workers during a national crisis such as COVID-19 so that they experience less caring burden and improve caring behavior.

FULL TEXT

DETAILS

Subject:	Patients; Behavior; Nursing care; Questionnaires; Medical research; Hospitals; Cultural differences; Likert scale; Caregivers; Workloads; Nurses; COVID-19
Business indexing term:	Subject: Workloads
Location:	Iran
Editor:	Wanich Suksatan
Publication title:	Nursing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023
Publisher:	Hindawi Limited
Place of publication:	New York
Country of publication:	United Kingdom, New York
Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437

Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article
Publication history :	
Milestone dates:	2022-09-15 (Received); 2023-01-13 (Revised); 2023-02-18 (Accepted); 2023-02-27 (Pub)
DOI:	https://doi.org/10.1155/2023/8567870
ProQuest document ID:	2785965655
Document URL:	https://www.proquest.com/scholarly-journals/investigation-caring-behavior-burden-their/docview/2785965655/se-2?accountid=211160

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Last updated:	2023-05-16
Database:	Publicly Available Content Database

Violence against Emergency Nurses in Kermanshah-Iran: Prevalence and Associated Factors

Janatolmakan, Maryam [1]
; Abdi, Alireza [2]
; Rezaeian, Shahab [3]
; Nasab, Negin Framarzi [2] ; Khatony, Alireza [4]

[1] Social Development and Health Promotion Research Center, Health Institute, Kermanshah University of Medical Sciences, Kermanshah, Iran [2] School of Nursing and Midwifery, Kermanshah University of Medical Sciences, Kermanshah, Iran [3] Infectious Diseases Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran [4] Social Development and Health Promotion Research Center, Health Institute, Kermanshah University of Medical Sciences, Kermanshah, Iran; Infectious Diseases Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran

ProQuest document link

ABSTRACT (ENGLISH)

Background. Violence against emergency nurses is a global concern with undesirable physical and psychological consequences. This study was conducted to investigate the characteristics of physical and verbal violence against emergency nurses in Iran. *Methods*. In this cross-sectional study, 150 nurses working in seven hospitals affiliated to Kermanshah University of Medical Sciences were included in the study using the stratified random sampling method. The data collection tools included a personal information form and a researcher-made questionnaire. Violence-related characteristics were assessed using descriptive statistics. Logistic regression was used to identify factors related to physical and verbal violence. *Results*. The frequency rates of physical and verbal violence during the past 12 months were equal to 62% ($n=93$) and 94.7% ($n=142$), respectively. In both types of physical violence (49.5%, $n=46$) and verbal violence (40.4%, $n=57$), the nursing station was the most common place of violence. In both physical ($n=40$, 43.0%) and verbal violence ($n=101$, 71.1%), the most common perpetrator was the patient's family. Most physical violence (57.0%, $n=53$) and verbal violence (35.2%, $n=50$) occurred in the night shifts. No statistically significant relationship was found between physical and verbal violence and gender, age, marital status, type of employment, and work experience. *Discussion*. The results indicate the seriousness of workplace violence against nurses. It is necessary to adopt a global approach along with providing sufficient manpower and psychological empowerment of nurses. Further studies with a forward-looking approach are suggested.

FULL TEXT

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1. Introduction

Workplace violence (WPV) against emergency nurses is a global problem [1]. According to the International Labor Organization, WPV includes ill-treatment and threatening or abusive behavior, including physical or psychological violence [2–6]. WPV varies from verbal aggression and sexual harassment to physical assault, of which the verbal type is the most common form of healthcare-related aggression, and about two-thirds of nurses worldwide have experienced this type of violence [7].

By definition, physical violence is the intentional use of physical force against an individual or a group that results in physical or psychological harm. Verbal violence is a behavior that leads to humiliation or disrespect for a person's dignity [8]. Evidence suggests that healthcare workers, especially nurses, are the most vulnerable to violence due to their daily exposure to patients and their families [9]. In this regard, the results of a study in Pakistan (2021) showed 29 cases of violence against doctors and nurses committed by the patients' relatives from April to August 2020. The reasons for the violence were the deaths of patients, the nonadmission of patients, and the lack of trust in medical personnel [10].

In a study in Kenya (2021), the prevalence of violence against emergency nurses in one year was 73.2%, and the perpetrators of most of the violence were patients and their relatives. The most common type of violence was verbal abuse [11]. In a study conducted in Saudi Arabia (2022), the prevalence of violence against emergency nurses during the previous two years was 73.7%, and the most common type of violence was verbal abuse. The perpetrators in 88.3% of cases were patients' family members or relatives [12].

Moreover, a study in China (2021) indicated that 29.1% of violence occurred against emergency department clinicians, and a negative correlation was reported between WPV and quality of care [13]. In another study in Turkey (2022), the prevalence of violence against emergency nurses was 90%, and verbal abuse was the most common type of violence. The perpetrators of most of the violence were the patients' relatives, and the cause of violence in most cases was the long waiting time to receive care [14]. The results of a study in Taiwan (2021) showed that the prevalence of violence against emergency nurses was 54%, and the most common type of violence was mental violence [1].

WPV may increase the risk of physical, psychological, and behavioral problems in nurses, including sleep disorders,

fatigue, pain, fear, anxiety, depression, post-traumatic stress disorder, substance abuse, communication problems, and job burnout [7, 15], also aggravating the nurse shortage problem [1].

Since WPV is a growing phenomenon and a major threat to nurses [16], it is necessary to take practical measures to reduce violence in this walk of life, and the first step in this direction is to know the prevalence of violence [9, 17]. In this regard, several studies that have investigated the prevalence of WPV and its related factors in emergency nurses in Iran [2, 5, 6] and around the world [1, 3, 14, 18] have reported different results. This difference may be related to cultural differences and psychological characteristics of patients and their relatives, as well as the nurses' behavioral and emotional balance [1]. Accordingly, the present study was conducted to investigate the prevalence of WPV and its related factors in emergency nurses.

This study sought to answer the following questions: (1) What is the prevalence of physical and verbal violence against emergency nurses during the past 12 months? (2) What are the factors related to violence against emergency nurses? (3) What is the response of emergency nurses to violence? (4) What are the strategies for preventing and managing WPV? and (5) What are the characteristics of WPV?

2. Methods

2.1. Study Design

This research is a cross-sectionaldescriptive-analytical study. In this type of study, the outcome and exposure variables are collected simultaneously; therefore, it is not possible to determine the cause-and-effect relationships between these variables [19]. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement was used to report the results [20].

2.2. Sample and Sampling Method

The study population included nurses ($n=300$) working in the emergency departments of seven hospitals affiliated to Kermanshah University of Medical Sciences (KUMS). Considering the prevalence of violence against nurses in the study of Honarvar et al., with a rate of about 90% [3], 5% accuracy, and a 95% confidence level, the sample size was estimated to be 143 nurses, and with 5% nonresponse, the sample size was increased to 150. The inclusion criteria were a bachelor's degree or higher in nursing and at least one year of experience in the emergency department. For sampling, first, the sampling frame of each hospital was received from the nursing office. The participants were recruited by stratified random sampling method. In this method, the research population is divided into several subgroups or strata based on common characteristics. Then, within each group, the necessary sample size is randomly selected. In the current study, seven emergency departments of KUMS-affiliated hospitals formed the strata. Within each stratum, simple random sampling was performed using a table of random numbers. Incomplete completion of the questionnaire was regarded as the exclusion criterion. It should be pointed out that no one was excluded from the study.

2.3. Measurement Instrument

The study tool was a researcher-made questionnaire that was designed using previous studies [2–5]. The questionnaire consisted of two parts. The first part was about the participants' demographic information, including age, gender, marital status, work experience, and type of employment. The second part consisted of 15 questions on the frequency of physical and verbal violence during the past 12 months, the availability of instructions on reporting the violence, the level of concern about the occurrence of violence in the workplace, the perpetrator's characteristics, the place of violence, the time of violence, the perceived causes of violence, and the nurses' response to violence. At the end of the questionnaire, an open-ended question was placed, and the nurses were asked to express their ways of preventing and managing WPV.

Questions were of the multiple choice, yes/no, likert, and open-ended types. Some of the questions were: "Have you been physically abused in the past twelve months? Yes/No," "What was the gender of the perpetrator? Male/female," "Who was the perpetrator? Patient, patient's relatives, patient's friends, patient's family, and colleague," "Does your workplace have guidelines for reporting cases of violence? Yes/No," "How concerned are you with workplace violence? Never, very little, little, moderately, very much," and "In your opinion, what are the ways to prevent and manage workplace violence against nurses?" To score the questionnaire, the simple and

relative frequency and standard deviation of the responses were calculated.

Quantitative and qualitative content validity methods were used to evaluate the validity of the measurement tool. In the qualitative section, the tool was provided to 15 faculty members, their corrective opinions regarding different parts of the questionnaire were obtained, and necessary corrections were made in the questionnaire. In the qualitative part, the content validity index and content validity ratio were calculated, which were equal to 0.82 and 0.72, respectively. A four-point Likert scale was used to calculate CVI, and experts were asked to choose one of the options of completely relevant, relevant, approximately relevant, and irrelevant for each question. The number of experts who chose approximately relevant and irrelevant options was divided by the total number of experts [21]. A CVI higher than 0.79 was considered appropriate. CVR was calculated using a three-point Likert scale, including the options “essential,” “useful, but not essential,” and “not necessary.” Experts were asked to choose one of the options for each question. The number of experts who chose the answer “necessary” was included in the calculation formula of CVR [21]. A CVR higher than 0.49 was considered satisfactory.

The test-retest method was used to evaluate the reliability. For this purpose, the questionnaire was completed by 30 nurses working in the emergency department with an interval of one week, and a correlation coefficient of 0.78 was obtained. It should be noted that these nurses were not included in the study.

2.4. Data Collection Method

To collect data, the researcher referred to the nursing offices of hospitals affiliated to KUMS and received a list of nurses working in the emergency department. Then, according to the number of nurses in each hospital, the required sample size was selected. Next, the selected nurses were visited according to their work schedule. At first, the objectives of the study were stated for nurses, and if they were willing, they were included in the study. Then, a questionnaire was given to the participants and collected after completion. If the participant did not agree to participate in the study, the person before or after him/her in the list of names would be replaced.

2.5. Statistical Analysis

Data were analyzed by SPSS V.18 software using descriptive and inferential statistics. In the descriptive part, the frequency, mean, and standard deviation indices were used. In the analytical section, the logistic regression analysis was used to determine the factors related to physical and verbal violence. The desired significance level was less than 0.05. The quantitative content analysis method was used to analyze the samples’ answers to the open-ended question. In this method, data analysis is done based on frequency and percentages. In the current study, the frequency of WPV prevention and management strategies was determined.

2.6. Ethical Considerations

The Ethics Committee of Kermanshah University of Medical Sciences approved the study with the code KUMS.REC.1395.494. The goals of the study were stated for all participants, and they were assured that their details and responses would remain confidential. Written informed consent was obtained from all participants.

3. Results

A total of 150 nurses participated in this cross-sectional study, with a response rate of 100%. All participants were nurses, and 77.3% (*n* = 116) contractual nurses. Most of them were female (*n* = 88, 58.7%) and single (*n* = 80, 53.3%), with an age of less than 30 years (*n* = 106, 70.7%) and a work experience of 1–5 years (*n* = 109, 72.7%) (Table 1).

Table 1

Demographic characteristics of the nurses according to the type of violence.

Variables		Total	Physical violence		Verbal violence	
n (%)		*n* (%)		Yes	No	Yes
No	Sex	Male	62 (41.3)	37 (39.8)	25 (43.9)	59 (41.5)

3 (37.5)	Female	88 (58.7)	56 (60.2)	32 (56.1)	83 (58.5)	5 (62.5)
–						
Age (year)	≤30	106 (70.7)	63 (67.7)	43 (75.4)	99 (69.7)	7 (87.5)
>30	44 (27.3)	30 (32.3)	14 (24.6)	43 (30.3)	1 (12.5)	·
Marital status	Single	80 (53.3)	53 (57.0)	27 (47.4)	78 (54.9)	2 (25.0)
Married	70 (46.7)	40 (43.0)	30 (52.6)	64 (45.1)	6 (75.0)	·
Employment type	Formal	34 (22.7)	21 (22.6)	13 (22.8)	33 (23.2)	1 (12.5)
Contractual	116 (77.3)	72 (77.4)	44 (77.2)	109 (76.8)	7 (87.5)	·
Job experience (Year)	1–5	109 (72.7)	69 (74.2)	40 (70.2)	106 (74.6)	3 (37.5)
6–10	31 (20.7)	17 (18.3)	14 (24.6)	26 (18.3)	5 (62.5)	≥11
10 (6.7)	7 (7.5)	3 (5.3)	10 (7.0)	0 (0.0)	·	
Concerns about workplace violence	Low	9 (6.0)	6 (6.5)	3 (5.3)	9 (6.3)	0 (0.0)
Medium	17 (11.3)	9 (9.7)	8 (14.0)	15 (10.6)	2 (25.0)	High
124 (82.7)	78 (83.9)	46 (80.7)	118 (83.1)	6 (75.0)	·	
Existence of violence reporting guidelines	Yes	26 (17.3)	17 (18.3)	9 (15.8)	24 (16.9)	2 (25.0)

“Age, gender, work experience, marital status, job experience, concerns about workplace violence, and type of employment.”

The frequency rates of physical and verbal violence during the past 12 months were equal to 62% (95% CI: 53.8, 69.5) (*n* = 93) and 94.7% (95% CI: 89.6, 97.3) (*n* = 142), respectively. In both physical (*n* = 40, 43.0%) and verbal violence (*n* = 101, 71.1%), the most common perpetrator was the patient’s family. The most common perpetrator gender was male in both physical (*n* = 83, 89.2%) and verbal violence (*n* = 125, 88.0%). From the nurses’ point of view, the most common perceived causes of violence were lack of nurses (*n* = 137, 96.0%), long waiting times (*n* = 131, 92.0%), deterioration of patients’ clinical conditions (*n* = 120, 84.0%), and weakness in nurses’ communication skills (*n* = 105, 73.5%). In both types of physical (*n* = 46, 49.5%) and verbal (*n* = 57, 40.2%) violence, the nursing station was the most common place of violence. Most physical violence (*n* = 53, 57.0%) and verbal violence (*n* = 50, 35.2%) occurred in night shifts (Table 2).

Table 2

Characteristics of violent incidents in emergency department nurses.

Variables		Physical violence	Verbal violence
n (%)	*n* (%)	Exposure to violence over the past year	Yes
93 (62.0)	142 (94.7)	No	57 (38.0)
8 (5.3)	-		
Source of violence	Patient	4 (4.3)	17 (12.0)
Patient's family	40 (43.0)	101 (71.1)	Staff member
22 (23.7)	6 (4.2)	Supervisor/head nurse/manager	14 (15.1)
17 (7.2)	Other	13 (13.9)	2 (5.5)
–			
Perpetrator gender	Male	83 (89.2)	125 (88.0)
Female	10 (10.8)	17 (12.0)	·
Place of violence	Patient room	19 (20.4)	48 (33.8)
Waiting room	4 (4.3)	4 (2.8)	Treatment room
4 (4.3)	33 (23.2)	Nursing station	46 (49.5)
57 (40.2)	Other	20 (21.5)	—
–			
Violence in the work shift	Morning	17 (18.3)	45 (31.7)
Evening	23 (24.7)	47 (33.1)	Night

The majority of participants (*n*=124, 82.7%) were highly concerned about violence and aggression in the workplace. Most nurses (*n*=124, 82.7%) stated that there are no specific guidelines for reporting WPV. In response to physical violence, 22.6% (*n*=14) of nurses stated that they reported the event to their superiors, and 16.1% (*n*=15) did not take any action. Regarding verbal violence, 21.1% (*n*=30) of nurses stated that they did not take any action, and only 22.6% (*n*=14) reported it to their superiors. Further, 69% (*n*=98) of the participants believed that reporting violence was useless (Table 1).

Based on logistic regression analysis, no statistically significant relationship was found between physical and verbal violence and participants' demographic variables, including gender, age, marital status, type of employment, and work experience (only in the case of physical violence, which entered the model) (Tables 3 and 4).

Table 3

Relationship between demographic variables and physical violence.

Variables		Physical violence					
Crude OR[a]	95% CI[b]	P value	aOR[c]	95% CI	P value	Sex	Female
Ref	—		Ref			Male	1.95
0.97, 3.88	0.059	1.77	0.86, 3.64	0.123	·		
Age (years)	≤30	Ref			Ref		
>30	1.46	0.69, 3.08	0.316	2.86	0.62, 13.21	0.178	·
Marital status	Married	Ref			Ref	—	
Single	1.17	0.61, 2.27	0.637	1.13	0.54, 2.38	0.748	·
Employment type	Official	Ref			Ref		
Contractual	1.01	0.46, 2.22	0.974	2.15	0.43, 10.67	0.347	·
Job experience (years)	≥11	Ref			Ref		
6–10	0.68	0.17, 2.8	0.596	1.02	0.13, 8.04	0.986	1–5

Note. [a]Odds ratio; [b]confidence interval; [c]adjusted odds ratio.

Table 4

Relationship between demographic variables and verbal violence.

Variables		Verbal violence					
Crude OR[a]	95% CI[b]	P value	aOR[c]	95% CI	P value	Sex	Male
Ref			Ref			Female	0.84
0.19, 3.67	0.821	1.03	0.23, 4.67	0.972	·		

Age (years)	≤30	Ref			Ref		
>30	3.04	0.36, 25.47	0.305	3.33	0.15, 72.69	0.445	
Marital status	Married	Ref			Ref		
Single	3.65	0.71, 18.74	0.120	3.49	0.66, 18.49	0.142	
Employment type	Official	Ref			Ref		

Note. [a]Odds ratio; [b]confidence interval; [c]adjusted odds ratio.

In response to an open-ended question, ten nurses mentioned two to three ways to prevent and manage WPV. All the answers were explained in four items, including adequate manpower supply ($n=8$, 80%), holding periodic communication skills workshops ($n=6$, 60%), prosecution of cases of violence ($n=5$, 50%), and review of antiviolence policies ($n=3$, 30%).

4. Discussion

WPV against nurses is a global concern [3]. This study was conducted to investigate the prevalence of WPV and its related factors in emergency department nurses. In the current study, 94.7% and 62.0% of nurses reported experiencing verbal and physical violence in the previous year, respectively. Evidence shows that verbal violence among emergency department nurses over a period of one year is between 66.4% and 100%, and the frequency of physical violence varies from 16.7% to 74.9% [4].

A study showed that about 90.0% of emergency department nurses in 13 general hospitals in Beijing, China, had experienced WPV in the previous year [22]. In a study in Shiraz, Iran (2019), 89.6% of nurses had experienced at least one type of violence in the past year, and the verbal harassment rate was about three times greater than physical violence [3]. In another study in Italy (2020), 96.3% of nurses stated that they had suffered from WPV in the past 12 months [18]. Evidence suggests that nurses working in emergency departments are at the risk of violence, which can affect their physical and mental health as well as the quality of nursing care provided.

In line with previous studies [18, 23–27], the perpetrator in both physical and verbal violence was the patient's family. However, in a study conducted among Indonesian nurses, the perpetrators in 43.5% of physical violence and 55.6% of verbal violence were patients and their relatives, respectively [3, 28]. Violence by the patient's family can be related to their concerns about the patient's condition, unfulfilled expectations, and inappropriate psychological conditions.

In the present study, the most common sex of the perpetrator was male in both physical and verbal violence, which is consistent with the results of previous studies [3, 18, 28]. There are several factors involved in this gender difference, including the cultural characteristics of the society and the physical abilities of men.

Contrary to previous studies [2, 29, 30], in the present study, most of the nurses who were subjected to physical and verbal violence were female. But in the study of Saleh et al. (2020) in Mashhad, Iran, most of the abused nurses were male [5]. Nurses, whether male or female, are not immune to violence. Contradictions in the results of studies can be related to differences in sample size and organizational research environments.

In line with previous studies [23, 28, 31, 32], most of the physical and verbal violence occurred during the night shift, which may be related to the increased number of patients referred to the emergency department due to the closure of specialized clinics and the absence of a management team.

In the present study, the nursing station was the most common site of physical and verbal violence. In a study in Iran (2010), the most common sites of verbal and physical violence were the nursing station (49.1%) and the patient's bedside (48.5%), respectively [2]. However, in Italy (2020), the most common site of violence was around the triage area (38.5%) [18], but in Taiwan (2020) and Oman (2020), most cases of violence occurred in the treatment area (61.2% and 63.2%, respectively) [23, 33]. Although there is a possibility of violence in any part of the emergency

department, the probability of violence in this area is higher due to the importance of the nursing station in patient management.

In line with previous studies [2, 25], most nurses reported the violence to their superiors, but most believed that reporting the violence was useless. However, in a study in Indonesia (2018), 92.1% of nurses were reluctant to report violence, found it useless, and feared the negative consequences of reporting [28]. Unfortunately, evidence suggests that hospital managers are not serious about pursuing and investigating cases of violence [3]. Lack of trust in the reporting team and fear of retaliation are other reasons for not reporting violence [2]. Reporting violence has positive effects on nurses as well as hospitals and can be helpful in adopting better policies to prevent future violence.

In the present study, the most common causes of physical and verbal violence were a lack of nurses, long waits, patients' inadequate clinical conditions, and nurses' poor communication skills. In other studies, the causes of violence against nurses have been reported to include inappropriate conditions of the patient and their family, unrealistic expectations of patients, noncompliance with hospital rules by patients and their companions, poor communication skills of nurses and patients, a lack of nurses, a lack of facilities, burnout of nurses, and a lack of security forces [2, 3, 28]. Clearly, eliminating the underlying causes of violence plays an important role in preventing WPV, and it seems that manpower supply has a more effective role.

The results showed no statistically significant relationship between WPV and nurses' age. However, in a study conducted on Iranian nurses (2020), the age group of 20–30 years was more exposed to verbal and physical violence than other age groups [5]. The results of a study (2019) in Italy showed that the rate of violence against nurses decreased as the age increased, so that the age group of 40–60 years experienced the least amount of physical and verbal violence compared to the age group under 40 years [4]. With an increase in age, nurses are expected to have more communication skills and therefore play a more effective role in managing and preventing violent incidents.

Consistent with the results of Pandey et al. in Nepal [34], in the current study, no statistically significant relationship was found between the occurrence of violence and nurses' type of employment. However, in a number of studies, a statistically significant relationship has been reported between the occurrence of violence and the type of employment. In this regard, in the study of Honarvar et al. in Shiraz, Iran, more verbal violence occurred among contract nurses [3]. In a study by Jafree in Pakistan, contractual employment was one of the risk factors for experiencing violence among nurses [35]. However, the authors of the present study believe that violence can affect all nurses, regardless of their type of employment.

The results showed no statistically significant relationship between violence and nurses' marital status, which is in line with the results of the study of Pandey et al. in Nepal [34]. But in the study of Saleh et al. In Iran, the rate of physical and verbal violence was higher among married nurses [5].

Similar to previous studies [5, 23, 36], the results of the present study showed no statistically significant relationship between nurses' work experience and violence. In a study in Egypt (2017), 68% of abused nurses had less than 50 years of work experience [37]. But in the study of Choi and Lee, the frequency of violence was higher in nurses with more than 5 years of work experience than in others [38]. The results of a study in Italy (2019) also showed that nurses with a history of less than 10 years had the highest rate of verbal and physical violence [4]. Regardless of the differences in the results of the studies, nurses with more work experience are expected to have better communication skills, to act as role models for less experienced nurses, and to prevent the occurrence of violence.

4.1. Study Limitations

In this study, data were collected by the self-report method, which might have affected the results. The second limitation is the possibility of recall bias, which might also have affected the accuracy of the results. In this type of bias, the participants may not remember all the violent events and their details. In this study, the occurrence of violence was based solely on the participants' responses to a yes/no question. Also, different types of verbal/physical violence were not investigated.

5. Conclusion

Our results emphasize the high prevalence of violence against emergency department nurses. Most cases of violence were committed by patients during night shifts at the nursing station. Although most nurses reported the violence to their supervisor, they found it useless. Considering the important role of nurses in the health care system, their safety in the workplace must be guaranteed. It is necessary to adopt a global approach to reduce violence in the nurses' workplace. In this regard, health policymakers should take the necessary measures to eliminate violence against nurses and provide a safe work environment with the cooperation of experts and the mass media. Adopting security measures in emergency departments can also play an important role in reducing violence. In this regard, installing closed-circuit cameras in nursing stations and waiting rooms, using fixed security forces, and physically inspecting people for weapons are necessary measures. Also, holding training workshops on the prevention and management of workplace violence can be useful for emergency nurses. Similar studies in other care sectors as well as longitudinal studies are required to investigate the effect of intervention measures on the frequency of workplace violence.

Ethical Approval

The Ethics Committee of Kermanshah University of Medical Sciences approved the study with the code KUMS.REC.1395.494. All methods were performed in accordance with the relevant guidelines and regulations.

Consent

Written informed consent was obtained from all the participants.

Authors' Contributions

MJ, SR, AA, NFN, and AK contributed in designing the study. NFN, AK, and AA collected the data. SR analyzed the data. MJ, SR, and AK wrote the final draft. All the authors read and approved the version for submission.

Acknowledgments

The authors would like to thank all the nurses who participated in this study. This study was drawn from a research project (No. 96167) sponsored by the deputy of research and technology of the Kermanshah University of Medical Sciences.

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DETAILS

Subject:	Hospitals; Patients; Emergency medical care; Sample size; Behavior; Validity; Likert scale; Nursing; Nurses; Emotional abuse; Workplace violence; Questionnaires
Business indexing term:	Subject: Workplace violence
Location:	Iran

Editor:	Ahtisham Younas
Publication title:	Nursing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023
Publisher:	Hindawi Limited
Place of publication:	New York
Country of publication:	United Kingdom, New York
Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437
Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article
Publication history :	
Milestone dates:	2022-08-16 (Received); 2023-01-03 (Revised); 2023-01-04 (Accepted); 2023-01-13 (Pub)
DOI:	https://doi.org/10.1155/2023/9362977
ProQuest document ID:	2767680486
Document URL:	https://www.proquest.com/scholarly-journals/violence-against-emergency-nurses-kermanshah-iran/docview/2767680486/se-2?accountid=211160
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Last updated:	2023-01-23
Database:	Publicly Available Content Database

The Effects of Education Based on the Nursing Process on Ostomy Self-Care Knowledge and Performance of Elderly Patients with Surgical Stoma

Roya Momeni Pour [1] ; Darvishpour, Azar [2] ; Mansour-Ghanaei, Roya [3] ; Leyli, Ehsan Kazemnezhad [4] [1] Department of Nursing, Zeynab (P.B.U.H) School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran [2] Department of Nursing, Zeynab (P.B.U.H) School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran; Social Determinants of Health Research Center, Guilan University of Medical Sciences, Rasht, Iran [3] Gastrointestinal and Liver Diseases Research Center, Guilan University of Medical Sciences, Rasht, Iran [4] Department of Biostatistics, School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran

ProQuest document link

ABSTRACT (ENGLISH)

Background. Patients with surgical stoma experience problems, which can lead to their impaired adaptation and self-efficacy. The nursing process provides a framework for planning and implementing nursing care. This study aimed to investigate the effect of education based on the nursing process on ostomy self-care knowledge and performance of elderly patients with intestinal stoma. *Materials and Methods.* In this quasi experimental study, 52 elderly patients with intestinal ostomy who were referred to Razi Hospital in Rasht and met the inclusion criteria were invited to participate in research. Sampling was done by a simple random method. The intervention group received an educational programme based on the nursing process, whereas the control group received traditional training. The research instruments included a questionnaire to assess the level of ostomy self-care knowledge and ostomy self-care performance. Data were analyzed by SPSS software version 21 using descriptive and inferential statistics at a significant level of $p<0.05$. *Results*. The mean scores of ostomy self-care knowledge and performance in both groups (intervention and control) were increased. However, the improvement in self-care knowledge and performance of the intervention group was significantly greater than that in the control group ($p<0.001$). *Conclusions* . The educational programme based on the nursing process compared to the routine patients training caused more improvement in ostomy self-care knowledge and performance of older adult patients with surgical stoma. Therefore, an educational programme based on the nursing process can be used as an educational model for these patients.

FULL TEXT

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1. Background

The world's elderly population is growing rapidly [1]. It is predicted that in the 21st century, the elderly population will reach its highest level in human life, which is why this century has been called the "Century of old age" [2]. Similarly, the report of the general population and housing census of the Islamic Republic of Iran in 2016 in Iran showed that about 9.3% of the country's population consists of people of 60 years and older [3]. In addition, there are some predictions which show that the elderly population of Iran will reach more than 26 million by 2050 [4]. Old age is not

a disease. It is the physiological changes that occur over time, and as a result of these changes, the rate of acute and chronic diseases increases [5]. Cancer can be considered an age-related disease because the incidence of most cancers increases with age, rising more rapidly beginning in midlife [6]. Cancer is the second leading cause of death in older adults [7] and among cancers, colorectal cancer has a high prevalence in the elderly. So that approximately 60% of colorectal cancer patients are older than 70, with this incidence likely increasing in the near future [8]. Colorectal cancer in people with colon cancers that have not spread to distant sites is most commonly treated by surgery [9]. Colostomy or ileostomy is a well-known surgical intervention aimed at treatment of various diseases, including cancer [10]. Intestinal ostomy is the creation of an artificial opening in the abdominal wall by surgery that drains the contents of the intestine out of the body [11]. As the frequency of major abdominal operations being performed in older patients rises, there is an associated rise in procedures involving fecal ostomies [12]. Ostomies are being placed frequently in surgically treated elderly patients with colorectal cancer [13]. Studies specifically evaluating the outcome of surgery for colorectal disease in older persons have demonstrated that major procedures should not be denied on the basis of age alone and that colorectal surgery can be conducted with an acceptable margin of safety in older persons [12].

Although the creation of a stoma is associated with positive outcomes such as symptom relief and improvement in overall health, it may have a negative impact on the patient [10]. The majority of patients with stoma suffers with a lack of physical activity, dietary changes, and general lifestyle changes [14]. Ostomy surgery has effects on person's physical appearance and functions and also has a bad effect on patients' body image [15]. Factors linked to living with a stoma may increase or decrease the health-related quality of life after stoma creation. For example, perceptions of living with a stoma are influenced by the presence of stoma complications. Leakage of effluent from the ostomy is perceived as especially bothersome, and a great deal of professional effort goes toward teaching patients to manage their pouching systems in a manner that avoids leakage [10]. To support patients in adjusting to their condition, they should receive self-care-related information and skill training during their hospital stay after colostomy, which might include instructions on colostomy care provided either verbally or via handout [9].

Education has an important part in the development of self-care, independence, and adaptation of individuals to the disease [16]. It has been suggested that patient education might reduce the length of hospital stay, the frequency of postoperative complications, and the frequency of hospital readmissions [17]. Education changes health behaviors and leads to better understanding of the disease and reduces or delays the incidence of complications [18]. Clinical nurses play a major roles to provide the health education for patients in the process of getting used to living with stoma. The main content of the health education should focus on technical skills related to wound care and incontinence (skin cleansing, bag/adapter replacement, changing dressings, and making the proper position). In addition, encouraging people to make decisions about treatment and care, organizing educational programs for daily activities to ensure adaptation to patients' social life, and developing educational materials and educational support systems are recommended [16]. The main goal of nursing care is to provide appropriate quality care to improve the condition of patients [19], and one of the most important policies and principles of nursing care is the use of the nursing process model [20, 21]. This model is a systematic framework for evaluating patients' needs for clinical decision-making. The nursing process moves the care of patients from traditional and old methods to modern, scientific, and patient-centered methods [20]. Patient education is an integral part of the nursing process, and nurses can use this process to assess, plan, implement, and evaluate an effective and individualized patient education programme [22]. However, age-appropriate teaching strategies for the older adult must be planned, purposeful, and adapted to accommodate the special needs of the elderly patient. Specific strategies that adhere to the principles of geragogy should also be an integral part of every nurse's teaching repertoire to promote health literacy in this special population [23].

The effects of education on self-care ability of patients with colorectal cancer have been evaluated in several studies [9, 16, 24]. These studies confirmed the effect of education on patients' self-care ability. It was shown in the study of Wang et al. that multimedia patient education is an adequate educational tool for patients with colorectal cancer who have undergone colostomy surgery [9]. In Shrief and Mokhtar's study, the use of structured educational guidelines

had a positive effect on patient knowledge, performance, and self-efficacy regarding colostomy care [24]. In Culha et al.'s study, the effect of self-care education on self-care awareness and agency of patients with colostomy and ileostomy was investigated. These researchers concluded that education may assist in self-care agency and stoma knowledge of patients with stoma [16]. However, the review of the literature indicated that no study has been conducted to investigate the effect of education based on the nursing process on the knowledge and self-care performance of elderly patients with surgical stoma. However, the ultimate goal of patient education programs is to achieve long-lasting changes in behavior by providing patients with knowledge that allows them to make autonomous decisions to take ownership of their care as much as possible and improve their own outcomes [22]. Therefore, considering the importance of this issue and due to the lack of evidence on an educational model based on the nursing process in Iran, the present study was conducted to determine the effect of education based on the nursing process on knowledge and self-care performance of elderly patients with surgical stoma.

2. Materials and Methods

2.1. Study Design, Setting, and Participants

This quasi-experimental study was conducted by using a pretest-post test two-group design. The population of this study was the elderly patients with an intestinal ostomy (ileostomy or colostomy) who were referred to Razi Hospital in Rasht, in 2020–2021. This hospital is the largest public and educational hospital in Guilan province in terms of size, which provides the most diverse general, specialized, and subspecialized services in the field of internal diseases and surgery to its patients.

Sampling was done by a simple random method. In this way, the samples were allocated from the list of intestinal stoma surgery candidates who met the inclusion criteria and were placed one in between the control and intervention groups. For example, the first patient from the list of surgical candidates was allocated in the intervention group and the second patient from the list was allocated in the control group. To determine whether the first patient will be in the control group or in the intervention group, a random lottery method by flipping a coin was used.

The inclusion criteria included the following: elderly patients who were 60 years or older with intestinal ostomy were willing to participate in the study and had not participated in similar programs before. They should be literate to speak and write Persian fluently, had no visual or auditory problems (they should not have problems communicating), did not have a psychological disorder (scored 8 or higher above the 10-item AMT instrument), were able to perform daily life activities (getting a score of 12 or higher assessed by using daily life tool), getting a score of 17 and lower (average and poor knowledge level) assessed by the Stoma Care Knowledge Level Questionnaire, earning a score of 18 and below (average performance level and poor) assessed by the checklist of checking the level of ostomy care performance and lack of work experience in the health system. The data collection took place from August 2020 to February 2021 and lasted for 7 months.

2.2. Research Instruments

Research instruments included a demographic characteristic questionnaire (including age, sex, and education), an ostomy self-care knowledge questionnaire, and an observational checklist of patients' ostomy self-care performance. The stoma care knowledge questionnaire developed by researchers is based on scientific text [25]. In this way, according to the objectives of the study, appropriate items were designed. Then, the phrasing, sequence, and arrangement of the questions and the proper format to receive the answers were considered. This questionnaire was related to how to take care of the ostomy (ileostomy and colostomy) and evaluates items such as the definition of ostomy, definition of ileostomy and colostomy, types of ostomy bags, duration of use of bags, appropriate time to change the bag, diet, lifestyle with ostomy, and stoma care tips. This questionnaire has 26 questions with "correct," "incorrect," and "I do not know" answers and is in 5 dimensions. For each correct answer, 1 point, and for incorrect and "I do not know" answers, zero points were considered. The sum of the total correct answers was 26. That if they got a score of 18 to 26, had good knowledge; 10 to 17, had average knowledge; and a score of 0 to 9, had poor knowledge. People with average to poor knowledge entered the training program. The questionnaire was answered one day before surgery as a pretest, and the first day, one week and one month after surgery as a posttest. The

validity of the ostomy knowledge level questionnaire was confirmed using content validity (CVI and CVR) and its reliability was determined 0.85 by Kuder–Richardson 21 (KR-21). In this way, the questionnaire was sent to 10 faculty members of the gastroenterology, cancer surgery, and nursing departments of Guilan University of Medical Sciences, and their opinion regarding the importance of questionnaire items was obtained by selecting one of the options of relevance, clarity, simplicity, and necessity. After applying the professors' opinions, the final questionnaire was prepared. In the reporting phase, the questionnaire was sent to all professors and their approval was obtained.
The observational checklist of patients' ostomy self-care performance was taken from a book about basic nursing techniques. This procedure checklist book applied all the procedures from Craven and Hirnle's Fundamentals of Nursing [26]. This observational checklist has 13 items with a three-choice Likert rating of "excellent performance," "satisfactory performance," and "need to practice," which evaluates the steps of changing the ostomy bag. For scoring, 2 points for "excellent performance," 1 point for "satisfactory performance," and zero for "need to practice" were considered. The total result was 26 because 13 items were examined. If the participants got a 18–26 score, their performance was excellent; 10 to 17 was used for average performance; and a score of 0 to 9 for poor performance. People with average to poor performance entered the training program.
To evaluate the performance of both groups in terms of how to change the bag and wash the ostomy, a pretest was performed on the day before surgery. An observation checklist of self-care performance was used for evaluation, which was completed by one of the researchers.
To evaluate the performance of both groups in terms of how to change the bag and wash the ostomy, a pretest was performed on the day before surgery. An observation checklist of self-care performance was used for evaluation, which was completed by one of the researchers. Then, changing the bag and washing the ostomy were practically taught in a session and the performance evaluated through posttest 1 on the first day, posttest 2 in one week after the training, and posttest 3 in one month after the training.
The validity of the observational performance checklist was confirmed using content validity, and its reliability was determined by an inter-rater reliability method ($r = 0.9$). Charlson Comorbidity Index was used to control concomitant diseases in the present study.

2.3. Intervention

The educational intervention in this study adopted five stages of the nursing process: assessment and recognition of educational needs, nursing diagnoses, planning, implementation of the educational program, and evaluation of the educational outcome [22, 27]. The first stage of the nursing process is assessing and recognizing the educational need, which was done using a questionnaire to assess the level of knowledge of ostomy care. After the necessary information was collected in the nursing assessment stage, nursing diagnoses were designed in the next stage. These nursing diagnoses were in the fields of patient knowledge related to nutrition, activity, and exercise, how to change the colostomy and ileostomy bag and the right time to change the bag, signs of the need to see a doctor or nurse, and important points of ostomy care. Then, in the third stage of the nursing process (planning), educational goals were formulated and educational content was prepared to achieve the goals.
The fourth stage of the nursing process was the implementation of educational intervention. Patients were trained individually and face-to-face. The training sessions were conducted in two sessions. The first training session was conducted one day before surgery with the aim of assessment of the patient's knowledge about ostomy care. Knowledge of ostomy care includes the definition of ostomy; the types of ostomy bags; proper nutrition; time to change the bag and the amount of activity, exercise, and symptoms required to see a doctor or nurse; and important ostomy care tips. An educational pamphlet was also provided for each patient.
In the evaluation process of the nursing process, the questionnaire was answered by a pretest and post-test by the subjects. For posttest, a questionnaire to assess the level of ostomy care knowledge was distributed and completed by the subjects one day after training, one week and one month after training. The second session of postoperative training was performed on the first bag replacement and ostomy lavage. In this session, the patient was taught how to take care of the ostomy and change the bag in a practical way. The duration of training was 15 minutes.
In the evaluation phase of the nursing process, the performance of the subjects in relation to how to change the bag

and wash the ostomy as a pretest and post-test one day after training on how to care for the ostomy and how to change the bag, one week and one month after training with checklist.

In order to collect data, the researcher obtained informed consent after selecting the research samples and introducing herself and providing sufficient explanations about the purpose of the research. The participants were also reminded that the information obtained from them will remain completely confidential and they can withdraw from the study whenever they wish.

2.4. Data Analysis

Collected data were analyzed using the SPSS software version 21. To analyze the general data, descriptive statistics of mean, median, and standard deviation were used. The Kolmogorov–Smirnov (KS) test was used to investigate the normality distribution of quantitative variables. The Mann–Whitney *U* test was used to analyze the differences in the performance status and knowledge status between the two groups of the study, and Wilcoxon test was used to analyze the differences within the group of the study. The significance level (p value) in all tests was considered 0.05.

3. Results

The results showed that the majority of allocated participants was in the age group of 60–74 (86.5%) and were males (65.4%). All allocated participants (100%) were married. There was no statistically significant difference between the demographic characteristics of the two groups ($p<0.05$).

The results related to the level of self-care knowledge showed that the mean score of knowledge increased one day and one week after the intervention in both intervention and control groups. At the end of the study, after thirty days, the self-care knowledge score of the intervention group had a higher median and mean than the control group ($p< 0.001$) (Table 1).

Table 1

The comparison of the mean score of ostomy self-care knowledge between the intervention and control groups after the completion of the programme.

Variables	Study groups						Sig
Intervention group			Control group			Increase in the score of ostomy self-care knowledge	Mean
SD	Median	Mean	SD	Median	One day after intervention	4.65	3.11

4.00	4.00	1.74	4.00	0.356	7 days after intervention	12.81	3.14
12.00	7.15	3.38	7.00	0.000	30 days after intervention	16.46	2.60

SD: standard deviation; Sig: significance level.

Figure 1 indicates that although both groups of the study improved their level of knowledge throughout the timeline of the study, the rate of promotion in the intervention group was more significant than the control group.

[figure(s) omitted; refer to PDF]

The results showed that the mean score of patients' performance in all time intervals (one day, one week, and one month after training) in the intervention group was higher than the control group (Table 2).

Table 2

Comparison of the increase in the score of ostomy self-care performance in the two groups of the study.

Variables	Study groups						Sig
Intervention group			Control group			Increase in the score of ostomy self-care performance	Mean
SD	Median	Mean	SD	Median	1 day after intervention	6.27	3.32
6.50	3.04	3.42	2.00	0.000	7 days after intervention	10.46	6.02

12.00	7.50	3.48	8.00	0.035	30 days after intervention	16.42	7.48

SD: standard deviation; Sig: significance level.

Figure 2 shows the mean score of ostomy self-care performance in both groups. It indicates that although both groups had improved performance levels during the study, the rate of promotion in the intervention group was significantly higher.

[figure(s) omitted; refer to PDF]

4. Discussion

This study was performed to determine the effect of education based on the nursing process on self-care knowledge and performance of elderly patients with intestinal stoma. Findings about self-care knowledge and performance in the intervention group and control group before and after the intervention showed that although both groups had improved the level of knowledge and performance, the percentage of promotion in the intervention group was significantly higher. In relation to the justification of this finding, it can be said that older adults are more at risk of developing chronic conditions. Thus, their search for health care will likely also increase [28]. This makes them look for the necessary information to take care of themselves, which can be a justification for improving the level of knowledge and performance in both the groups in the present study. However, the percentage of higher improvement in the level of knowledge and performance among the intervention group compared to the control group is related to the effect of the intervention. In other words, the results of the present study indicate that education based on the nursing process has been effective in improving self-care knowledge and performance. In justification of this finding, there was not found a study similar to the present study that investigated the intervention of education based on the nursing process on the level of knowledge and performance of patients with ostomy. For this reason, to discuss the findings, studies that have generally dealt with the effect of education on the self-care of these patients have been mentioned as evidence. For example, Shrief and Mokhtar examined the effect of structural education on the knowledge of patients with surgical stoma [24]. Consistent with the present study, the results of this study indicate the effect of education on self-care knowledge of patients with surgical stoma. Similar results were observed in the study of Ran et al. [29], Culha et al. [16], Hegazy et al. [30] and Oshvandi et al. [31]. In line with the results of the present study, the findings of the study by Pouresmail et al. [32], Hegazy et al. [30], and Sanabadi et al [33] showed the positive effect of education on increasing self-care skills and behaviors.

In general, adult education about various health care topics is essential to improve health care behavior and self-management as well as reduce risky behavior [34]. The ultimate goal of patient educational programs is to achieve long-lasting changes in behavior by providing patients with the knowledge to allow them to make autonomous decisions to take ownership of their care as much as possible and improve their own outcomes [22]. A great deal of effort must be invested to support the empowerment of older people to increase their benefits from educational interventions. To achieve empowerment, people must obtain knowledge that is related to individual needs and expectations. By providing empowering care, nurses help increase the residents' independence and their feelings of autonomy [34]. Gaining insight into older patients' needs, priorities, and experiences is also mentioned and of high importance in reviews on principles of learning in older people [35]. In older people, age-related conditions and the related decline in physical and cognitive functions require that they receive appropriate education to continue living as actively and independently as possible [34].

The nurse, as a part of the multiprofessional health team, has the duty of managing the care of elderly people with an intestinal ostomy, from any levels of assistance, from the diagnosis process to home monitoring [36]. Nurses are required to be adequately prepared with a sufficient theoretical knowledge base which guides their clinical practices

[37] and provision of comprehensive nursing care to older adults [38]. The nursing process has become the basis of contemporary practice, as a core component of nursing education, as well as a point of reference in providing nursing care in many parts of the world. Arguably, it is central to all nursing actions, applicable in any setting and within any frame of [39]. The nursing process functions as a systematic guide to client-centered care [40]. Using the five-step nursing process for developing a patient teaching plan will help to deliver comprehensive and effective teaching. Simple teaching plans accompanied by multiple teaching strategies provide patients with valuable information [27]. The nursing process is regulated and implemented according to the needs of patients and due to the fact that implementation of care programs based on patients' needs will produce better results [41], it is expected that more attention will be paid to it in patient care plans.

5. Conclusion

Generally, the results of the study indicate that the use of education based on the nursing process has a positive effect on the self-care knowledge and performance of elderly patients with intestinal stoma and can be used as a model for nursing interventions in caring for patients. Therefore, it is suggested that education based on the nursing process has been considered in clinical and educational environments, and the relevant authorities should provide the necessary resources and facilities for nurses to use them.

The main limitation of the present study is that it was conducted on elderly patients of one medical center of Guilan University of Medical Sciences, which may not be representative of all older adults, and therefore, its results cannot be generalized to all older adults. It is suggested that future studies be conducted on participants from other regions and countries with cultural diversity and their results be compared with the findings of the present study.

Ethical Approval

This research was approved by the ethics committee of Guilan University of Medical Sciences (ethics ID IR.GUMS.REC.1398.301) in Iran. The study was performed in accordance with the ethical standards as laid down in the Declaration of Helsinki and its later amendments or comparable ethical standards.

Consent

Written informed consent was voluntarily obtained from all participants included in the study.

Authors' Contributions

RM is the first researcher who wrote the study proposal, collected the data, and analyzed the data. AD is the corresponding author and supervised the research work and was a major contributor to writing the manuscript. She designed the study, conducted data collection and analysis, and supervised the research work. RMG was involved in the study design and interpretation of the data and review of the report. EK was involved in the study design, analysis and interpretation of the data, and statistical advice. All authors have read and approved the manuscript.

Acknowledgments

The authors wish to sincerely thank all patients who participated in the study.

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DETAILS

Subject:	Health education; Age; Knowledge; Nursing care; Activities of daily living; Questionnaires; Adaptation; Ostomy; Older people; Colorectal cancer; Patient education; Disease management; Cancer surgery; Colorectal surgery

Location:	Iran
Editor:	Wanich Suksatan
Publication title:	Nursing Research and Practice; New York
Volume:	2023
Publication year:	2023
Publication date:	2023
Publisher:	Hindawi Limited
Place of publication:	New York
Country of publication:	United Kingdom, New York
Publication subject:	Medical Sciences--Nurses And Nursing
ISSN:	20901429
e-ISSN:	20901437
Source type:	Scholarly Journal
Language of publication:	English
Document type:	Journal Article
Publication history :	
Milestone dates:	2022-03-03 (Received); 2022-12-23 (Revised); 2022-12-27 (Accepted); 2023-01-04 (Pub)
DOI:	https://doi.org/10.1155/2023/2800796
ProQuest document ID:	2765576362
Document URL:	https://www.proquest.com/scholarly-journals/effects-education-based-on-nursing-process-ostomy/docview/2765576362/se-2?accountid=211160
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Last updated:	2023-01-26

Bibliography

Citation style: APA 6th - Annotated with Abstracts - American Psychological Association, 6th Edition

Hutchinson, D., Kunasekaran, M., Stone, H., Chen, X., Quigley, A., Moa, A., & C, R. M. (2023). Healthcare workers' SARS-CoV-2 infections in four hospital outbreaks during delta variant prevalence in sydney, australia. Nursing Research and Practice, 2023 doi:https://doi.org/10.1155/2023/1806909

Background. Healthcare workers (HCWs) are at risk of SARS-CoV-2 infections due to occupational exposure. The use of airborne personal protective equipment (PPE) significantly reduces this risk. In June 2021, an epidemic of the Delta variant began in New South Wales (NSW), Australia. Concurrent PPE guidelines, set by the Clinical Excellence Commission (CEC), restricted the use of respirators. Objective. To understand the relationship of PPE guidelines with workplace-acquired HCW SARS-CoV-2 infections in different clinical settings and to examine the relationship between rates of community transmission and workplace-acquired HCW infections during the Delta outbreak in NSW. Methods. Total SARS-CoV-2 HCW infections between 13 June and 30 October 2021 (first four months of the Delta wave) were estimated from the government COVID-19 surveillance reports and compared with the surveillance reports of community transmission. In the absence of a detailed reporting of HCW infections, open-source data including news articles, media releases, and epidemiological surveillance reports were also collected. Data were extracted on HCW cases of SARS-CoV-2 from four hospitals, including the number of HCW cases (per NSW Health definition), clinical setting, PPE guidelines, and evidence of increasing local transmission. Results. SARS-CoV-2 infections in HCW identified as workplace-acquired infections (n = 177) and those without a known transmission source (n = 532) increased during the period of increasing community transmission (n = 75,014) in NSW. Four hospital COVID-19 clusters affecting 20 HCWs were identified between June and October 2021. HCW clusters occurred in general wards where staff were recommended to wear surgical masks. No workplace-acquired HCW infections were reported in these hospitals from critical care wards, where respirators were recommended during the same outbreak weeks. Conclusions. Differences in PPE policy across different wards may leave healthcare staff at risk of SARS-CoV-2 infection. During periods of high community transmission, respirators should be provided to protect hospital staff. Formal reporting of HCW infections should occur.

Bimray, P., Chipps, J., & Ticha, V. (2023). Professional values of undergraduate students at a nursing school in south africa. Nursing Research and Practice, 2023 doi:https://doi.org/10.1155/2023/9635033

Background. Nursing schools play an important role in instilling nursing professional values in undergraduate nursing students and ensuring that they produce professional nurse graduates. Several studies in various countries have been conducted to describe the professional values held by nursing students, but this has not been explored in detail in South Africa. Aim. The purpose of this study was to describe the professional values held by undergraduate degree students at a nursing school in South Africa. Methods. A cross-sectional survey using a self-administered questionnaire was conducted. With a population of 1,233 undergraduate nursing students across four years in the degree programme at the nursing school, a sample of 294 was calculated as the representative (95% CI, 5% error, and 50% response distribution). The 26-item nurses professional values scale revision (NPVS-R) with five value dimensions was used to collect the data. Means, frequencies, and confidence intervals were used to describe the values and Mann–Whitney U tests and Kruskal–Wallis independent sample tests were used to compare the findings with the demographic characteristics. Results. A total number of 245 respondents completed the questionnaire (response rate of 83.3%). Overall, the nurse professional value score was high (113.1 ± 13.1). The values of trust (4.46 ± 0.61), justice (4.39 ± 0.57), and caring (4.38 ± 0.55) were rated significantly higher than those of professionalism (4.23 ± 0.64) and activism (4.22 ± 0.57). First- and final-year students had significantly higher professional value scores. Conclusion. The study results describe the professional values of undergraduate nursing students in the school and confirmed the importance of trust, justice, and caring as the key professional values in the South African setting. Clinical Relevance. Nursing education should embed and monitor nursing professional values in the curriculum. Instilling nursing professional values in undergraduate nurses during formal training programmes improves quality patient care and service delivery for clinical practice.

Kebope, M. K., Mofatiki, E. M., & Moloko-Phiri, S. (2023). Nurses' perceptions on how recovery-oriented mental health care can be developed and implemented. Nursing Research and Practice, 2023 doi:https://doi.org/10.1155/2023/4504420

Aim. This study explored how nurses working in inpatient mental health units perceived the development and implementation of a recovery-oriented mental healthcare programme (ROMHCP). Background. The recovery-oriented mental healthcare approach (ROMHCA) in mental health is regarded as the future of mental health services and has been implemented in different countries worldwide. However, regarding developing and implementing the recovery approach, Africa appears to have been left behind by the rest of the continents. Design. The study used a qualitative approach to describe how a recovery-oriented mental healthcare approach could be developed. Methods. Thirty nurses who worked in Botswana's four inpatient mental health facilities consented and voluntarily participated in the study. Data were collected from February to mid-March 2022 through online focus group discussions and analysed using thematic analysis. The COREQ checklist was used to report the findings. Results. Two main themes emerged as follows: (i) developing and implementing a recovery-oriented mental healthcare programme is possible and (ii) certain elements are required to develop and implement ROMHCP. Conclusion. The participants believed that people diagnosed with mental illness could recover from the illness and suggested how it could be achieved. They also contended that the programme's success would lie mainly with multisectoral support from policymakers, facilities, hospital personnel, patients, and the community. Clinical Relevance. ROMHCP has the potential to benefit people with mental illness in the country. In addition, it would allow nurses to improve their knowledge and skills in managing mental illnesses. Patient or Public Contribution. The patients and the general public did not contribute to the study's concept, design, and outcomes. However, the nurses working in mental health facilities volunteered to participate in the study.

AbuAlula, N. A., Almarwani, A. M., Daniel, M. M., Naif, S. A., Alharbi, M. R., & Ebeid, I. A. (2023). The relationship between bullying and emotional state among undergraduate nursing students: A cross-sectional correlation study. Nursing Research and Practice, 2023 doi:https://doi.org/10.1155/2023/2397229

Introduction. Bullying behavior by nursing students is a serious problem that has contributed to the drop in numbers in the nursing profession. Aim. The study investigated the relationship between bullying and the emotional state of undergraduate nursing students. Methods. The study used a cross-sectional correlation design with a sample of 286 undergraduate nursing students from multiple nursing colleges located in the western region of Saudi Arabia. The 21-item depression, anxiety, and stress scale (DASS-21) was used to measure the study outcomes. A revised version of the Bullying Assessment Questionnaire was used to assess bullying experiences. Statistical analyses, including a t-test, Pearson correlation coefficient, and a one-way between-subjects ANOVA, determined the significance of the relationship between study variables. Results. There was a high prevalence of depression, anxiety, and stress symptoms among Saudi nursing students. Most of the respondents reported mild to extremely severe symptoms of depression (58.7%), anxiety (58%), and stress (44.8%). Around 90.1% of the nursing students reported exposure to a form of bullying over the previous 12 months. The most common items reported as part of this behavior included continually being assigned tasks beyond their capacity. Family members were the most frequently reported source of bullying (29.8%), followed by nursing faculties (20.9%). Bullying behavior was positively correlated with students' scores for depression, $r(284) = 0.49$, $n = 286$, $p < 0.01$; anxiety, $r(284) = 0.54$, $p < 0.01$; and stress, $r(284) = 0.56$, $p < 0.01$. Conclusion. The study's findings raise concerns and highlight the importance of decreasing the risk of depression, anxiety, and stress among undergraduate nursing students. Nurse educators must ensure that students receive psychological support to decrease these psychological outcomes. Regularly monitoring bullying behavior is essential to maintain students' psychological stability, which could eventually reduce professional dropout rates.

Köpsén, S., Lilja, M., Hellgren, M., Sandlund, J., & Sjöström, R. (2023). Midwives' and diabetes nurses' experience of screening and care of women with gestational diabetes mellitus: A qualitative interview study. Nursing Research and Practice, 2023 doi:https://doi.org/10.1155/2023/6386581

Background. Gestational diabetes mellitus (GDM) is increasing and is associated with adverse outcomes for both mother and child. The metabolic demands of pregnancy can reveal a predisposition for type 2 diabetes mellitus (T2DM), and women with a history of GDM are more likely to develop T2DM than women with normoglycemic pregnancies. Aim. The aim of this study was to explore midwives' and diabetes nurses' experience of their role in screening, care, and follow-up of women with gestational diabetes mellitus and, further, to explore their opinions and thoughts about existing routines and guidelines. Method. Individual interviews were performed with ten diabetes nurses and eight midwives working in primary and special care. Qualitative content analysis was done according to Graneheim and Lundman. Results. The analysis of the interviews resulted in the overall theme "An act of balance between normalcy and illness, working for motivation with dilemmas throughout the chain of health care." Difficulties in carrying out the important task of handling GDM while at the same time keeping the pregnancy in focus were central. Women were described as highly motivated to maintain a healthy lifestyle during pregnancy with the baby in mind, but it seemed difficult to maintain this after delivery, and compliance with long-term follow-up with the aim of reducing the risk of T2DM was low. The women came to the first follow-up but did not continue with later contact. This was at a time when the women felt healthy and were focusing on the baby and not themselves. A lack of cooperation and easy access to a dietician and physiotherapist were pointed out as well as a wish for resources such as group activities and multiprofessional teams.

Ibrahim, R., Pawestri, F., Ragil, A. S., Widianingrum, S., & Hanifah, T. (2023). Psychosocial problems among psychiatric nurses for caring patients with mental disorders during the COVID-19 pandemic. Nursing Research and Practice, 2023 doi:https://doi.org/10.1155/2023/3689759

COVID-19 has a negative effect on the psychological well-being of psychiatric nurses. Thus, examining the psychosocial response of nurses is important for preventing more serious mental health problems and disruption of the quality of nursing care. This study aimed to evaluate the psychosocial problems of nurses who provided nursing care to patients with mental health disorders during the COVID-19 pandemic. A quantitative study with a cross-sectional design was conducted. The 101 nurses at Central Mental Health Hospital who provide nursing care to patients with mental health disorders were recruited through consecutive sampling. The instruments used were the demographic questionnaire, the Expanded Nursing Stress Scale, Zung Self-Rating Anxiety Scale, and The Connor–Davidson Resilience Scale 25. Univariate and bivariate analyses were used to process the data. The mean score of 45.1 (±24.3) was obtained for the ENSS; around 97% of nurses have a work stress score below the average, 4.95% have mild-moderate anxiety, and 28.7% have a low level of resilience. Work stress and contact frequency, work stress and gender, anxiety and contact frequency, as well as resilience and contact frequency all correlated significantly (p value <0.05). The Pearson test showed a significant positive correlation between work stress and anxiety (p: 0.002, r: 0.299). However, there was no significant correlation between anxiety and resilience (p: 0.643, r: 0.47), nor between work stress and resilience (p: 0.643; r: 0.47). Psychosocial disorders that psychiatric nurses face include occupational stress, mild-moderate anxiety, and low resilience. The government can create specific infection control guidelines for the mental health setting, and hospital management or ward leaders can also provide support to psychiatric nurses to increase resilience in reducing psychosocial problems.

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