IJPHS
International Journal of Public Health and Health Sciences

International Journal of Public Health and Health Sciences

Vol.2 No.2 (May-August, 2020)

2020

ISSN 2673-0251 (Online)
ISSN 2673-0200 (Print)

International Journal of Public Health and Health Sciences; IJPHS
ISSN 2673-0200 (print) ISSN 2673-0251 (online)

International Journal of Public Health and Health Sciences (IJPHS)

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International Journal of Public Health and Health Sciences; IJPHS
ISSN 2673-0200 (print) ISSN 2673-0251 (online)

Editorial Board

eISSN 2673-0251 (Online)
ISSN 2673-0200 (Print)

International Journal of Public Health and Health Sciences; IJPHS
ISSN 2673-0200 (print) ISSN 2673-0251 (online)

Editorial Statement

In a systematic review of asymptomatic infections with COVID-19, the epidemiological characteristics and prevention measures of people with an asymptomatic infection of COVID-19 is very limited. They need rigorous investigations and laboratory testing that would be helpful in identifying people with asymptomatic infection. Therefore, it is recommended to screen for high-risk populations such as close contacts or suspected infected patients, which will be helpful for early control this global epidemic effectively (Gao, Z et al.,2020). In addition, there is limited knowledge on medical comorbidities and COVID-19. Patients with medical comorbidites are having high risk of developing serious events, such as ICU admission, mechanical intubation and death. Diabetes mellitus is a comorbidity which is having a significant impact on death in COVID 19 patients. The knowledge of these comorbidites can help us better stratify COVID 19 patients at higher risk allowing a more targeted and specific approach in preventing fatal events (Nandy K, 2020)

The editorial board of IJPHS sincerely hope that the members, faculty members, students, medical, nursing and public health personnel as well as alumni who are interested in obtaining more detail from original articles, reviews, and other to use or transform research information into teaching and research fields. In this issue, IJPHS is consisting of five interesting topics covering public health and medical sciences which you can download articles in the journal at the website https://www.tci-thaijo.org/index.php/ijphs.

International Journal of Public Health and Health Sciences; IJPHS
ISSN 2673-0200 (print) ISSN 2673-0251 (online)

Content

Original article

Received: April 4, 2020;
Accepted: August 5, 2020;
Published: August 28, 2020

Evaluation of the Management Practices in the Healthcare Delivery System of Ghana: A Case Study of KNUST Hospital, Kumasi

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Abstract

Healthcare delivery issues are managerial though they are sometimes tied to national policies. There is therefore the call for effective management practices in healthcare facilities. However, there is no specific management training system for doctors and other staff who become chief executive officers of these facilities. This paper evaluates the management practices of healthcare delivery of the KNUST Hospital and the implication of these practices on quality healthcare delivery. Using a population of 265 health staff and 125 patients who have spent a minimum of 24 hrs in the hospital, the authors used a purposive and simple random sampling to ascertain the significant relationship between healthcare management practices and healthcare delivery systems. The outcome of the study was determined by evaluating responses from our structured questionnaire on the management practices of healthcare delivery in KNUST Hospital. There was a strong association between maternity and child health, and drugs and vaccines. Similarly, we found the association between environmental health and counselling services to be strong. Healthcare management practices and healthcare delivery were positively and significantly related. Shortage of health care professionals, service quality and length of time before seeing the doctor were challenges to efficient management practices. The study recommends that there should be proper training schemes for management. In addition, management of the hospital should undertake outreach programmes in the communities to sensitize the people on the negative effects of self-medication and superstition in the management of health care delivery in the hospital.

Key words: Healthcare, Hospital Management, Managers, KNUST Hospital, Ghana

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Introduction

Health is one of the most critical aspects of Ghana's societal framework. Essentially, many countries including Ghana cannot prosper without good health. As a result, individuals are driven to offer the needed support to a sick relative or friend by ensuring they have access to the right healthcare delivery (Afulani et al., 2018). This unique relevance of health in our lives makes careers in the health sector so vital and, often times, attractive (Sperber, 2016). Health, in particular, stands as a pivotal human right key around which other human rights and activities revolve (Gostin et al., 2019). Every human being is, therefore, entitled to the enjoyment of the highest attainable standard of health, leading to living a quality life (WHO, 2017). Consequently, the right to good health care is not only vital, but also a major duty of the government (Boamah, 2018). This continually presents the health service industry as the most energetic enterprise across the length and breadth of the globe (Itkin et al., 2018). The recent growth of the healthcare management field (Doyle, 2019) has equally sparkled interest for potential and talented supervisors and healthcare experts (Blum and Tremarco, 2019). Essentially, the interest and requirement for managers, and healthcare managers in particular, are based on the earnest requirement for accessing the challenges of this potential market (WHO, 2008). This is due to the fact that healthcare is undergoing a constant revolution which requires managers of this institution to adapt to new abilities and skills in their administrative functions (WHO, 2008).

Subsequently, the literature on healthcare management have established that, with the globalisation of the healthcare service industry, medical service managers and experts are required to possess practice-situated, universal and scholarly abilities in this field (Blum and Tremarco, 2019). In respect to the above, healthcare supervisors have developed the possibilities that are needed for future worldwide medical services (Elekwachi, 2019). The present debate in the literature puts forth that these (healthcare) managers are saturated within the health industry with the broad administrative abilities of improving the quality of health while diminishing the expense at an equivalent time (Smith, 2019). Correspondingly, the effectiveness of a hospital or other health care centres depends on the type of health care management and the manager it subscribes to (Seth et al, 2019). As classical professional administrators, healthcare managers are regarded as unique among professional organisations that are vital in the healthcare industry (Hughes, 2017; Cronin et al., 2018; Doyle, 2019). Their main roles include; managing community healthcare centre staff; tracking, screening, requesting supplies, and drugs and further observing patients all through the cycle of consideration (Cronin et al., 2018). They also create spending plans and oversee contacts with partners in communities (Wallick and Stager, 2002).

Significantly, the African health sector has been frustrated with hindered inefficiencies, comprehensive variation in the quality of patient care and the absence of well-defined characterised and appropriately adjusted leadership frameworks (Elekwachi, 2019). One of such areas where the healthcare systems are battling with is healthcare management. As everyone utilises health care or has individuals from their families or companions who are healthcare users, there has been a growing interest in the subject of healthcare management in recent times (Alldred, 2018). The work of Kazdin has revealed that management of individuals, procedures, and resources is a significant part of health care delivery system (Kazdin, 2019). Nevertheless, many studies have revealed that there is no explicit management training framework for doctors and other healthcare professionals amid their study in the universities and other institutions (The Health Foundation, 2012; Wilkie, 2012; Cronin et al., 2018). Essentially, in the choice or arrangement of administrators to oversee

healthcare in institutions where professional administrators are absent, the literature argues that the senior medical experts who have worked in a specific healthcare organisation for a significant number of years is made either the Chief Executive Officer (CEO) or the administrator of a unit of that healthcare organisation (Loh, 2012; Rotar et al., 2016; Deane et al., 2006). This makes the administration of the hospital challenging as medical doctors who are not fine-tuned with managerial issues are made administrators (Loh, 2012; Elekwachi, 2019). The customary organisation of appointing these doctors to lead health care organisations is not helping the adaptation to the elements of the changing health system (Rotar et al., 2016). Enhanced management have been reported in this manner to streamlining medical services delivery (Loh, 2012; Rotar et al., 2016). Subsequently, a considerable measure of these healthcare managers cause issues rather than resolving them. Hence, a lot of healthcare related problems in Africa today has tended to be managerial rather than policy problems (Loh, 2012; Elekwachi, 2019).

The University Health Services (KNUST Hospital) started as a dressing station in 1952 (Frimpong, 2007; Bansah, 2017). By 2007, it had grown by additions and modifications into a full-fledged 125-bed capacity hospital (Frimpong, 2007). The hospital currently serves an estimated population of 200,000 with over 42,000 students, 30,000 staff and dependents and about 150,000 people from over 30 surrounding communities including Ayigya, Bomso, Ayeduase, Kotei and Boadi (Bansah, 2017; Adobah, 2011). Located in the northwestern part of Kumasi, on the Kumasi-Accra highway, the Kwame Nkrumah University of Science and Technology Hospital stands as the medical arm of the University (KNUST) providing the needed healthcare services to the University Community and the people living in proximity since its inception (Bansah, 2017; Frimpong, 2007; Adobah, 2011). The hospital is a quasi-government health facility (GAQHI) designated as a District Hospital by the Ministry of Health of Ghana and complements other public and private health institutions in the Kumasi Metropolis of the country (Bansah, 2017).

This notwithstanding, little attention is paid by scholars towards the evaluation of the management practices of healthcare deliverers in the above institution. Significantly, the KNUST hospital has not been a prime focus of the literature on administrative studies as it has received less scholarly attention. It is, therefore, essential to evaluate the management of healthcare delivery at KNUST Hospital in the Asante region of Ghana. This contribution aims to fill the gap in the literature by presenting an invaluable evaluation of the management practices of healthcare delivery in the hospital; identify the management practice of the KNUST hospital; establish a relationship between management practices and the quality of healthcare delivery and explore the challenges of the efficient management practices in KNUST hospital.

Theoretical Assumptions

This study uses three main theories to discuss healthcare management. These theories include attribution, evidence-based management practices and utilisation management theories.

The attribution theory, applied to health care management, is a theory used to assess the successes and failures of a health system or programme (Martinko et al., 2012; Palmieri and Peterson, 2009). Attribution theory is described as a possible theory of medical care management that can be used to create a safer environment for patients (Palmieri and Peterson, 2009). As a causal explanation for individual's behaviour, attribution theory can be used as a conceptual framework to foster a positive and safe work environment for both healthcare professionals and patients (Martinko et al., 2012). This theory assumes that health care management can be improved

by understanding that health care errors are sometimes inseparable from the art (Carayon and Wood, 2010). Healthcare providers understand and use attribution framework to explain their behaviours and that of others by associating causality with events (Palmieri and Peterson). The theory of attribution is an essential tool for predicting individual's behaviour at the work place (Martinko et al., 2012). Subsequently, with the recognition of errors as mere 'human' errors, proponents of the theory assume that healthcare professionals can make relevant inference by focusing on continuing their tasks to provide a positive environment for patient recovery rather than focusing on what they have not done successfully (Reason, 2000; Heider, 1958).

The second theory of health care management deemed fit by the authors in this study is the theory of evidence-based management. According to Guo et al. (2017), healthcare providers have been slow in accepting and applying the same theories that health professionals often have. Generally, they have shied away from an evidence-based approach that requires doctors, nurses and other health care professionals to make decisions based on the best available evidence (Guo et al., 2017). This theory holds that decision making by managers must be rooted in the most reliable evidence (Janati et al., 2018). Ideally, the use of evidence-based as a framework for decision making has the potential of helping management to develop effective measures towards delivering quality care (Janati et al., 2018). In application, Guo and his contemporaries suggest that it is necessary to impose these same standards in the decision-making process of health care administrators to achieve a level of uniformity in the decisions of health care officials (Guo et al., 2017). Practical considerations, such as time constraints and deadlines, often hinder the transition from evidence-based theory to practice (Guo et al., 2017).

Usage or utilisation management is a third theory applicable to health management systems operations. The utility theory continues to be very active in management science and application (Wallenius et al., 2008). Specifically, this theory received a broader application in the healthcare sector than more theoretical attributions and evidence-based theories (Wallenius et al., 2008). This theory is particularly interested in individual's values (Fishburn, 1968). It assumes that preferences and values of an individual enable them to be of important use to his firm (Fishburn, 1968; Wallenius et al., 2008). Generally, utilization management applied to healthcare, is a proactive approach to administering medical care through established guidelines (Muth et al., 2019; Wallenius et al., 2008). Muth and his peers identified several tasks in utilisation management that are essential for the effective administration of a health organisation (Muth et al., 2019). First, it is essential to determine the priorities of the organisation (Muth et al., 2019). This is followed by an investigation and a determination of who will benefit from the important decisions that are made (Muth et al., 2019). We infer from this theoretical construct that; health care managers determine which goals to set and how to conduct further research. Once the data is collected and evaluated, policies, guidelines and procedures can be developed and implemented (Holtrop et al., 2019).

Research Methodology

The descriptive case study was utilised as the research design for the study. The population for the study included the administration, senior and junior staff and patients of the KNUST hospital. The researchers used a purposive sampling method to choose the sample from the populace. We sourced for data from both primary and secondary sources. Questionnaires were administered to source

for information from participants on the management practices of healthcare delivery of the KNUST Hospital. Information collected was analysed with MS-Excel 2010 and presented in tables. In addition, the Pearson's Chi-square was used by the researchers to test the connection between healthcare management practices and efficiency of healthcare delivery.

Research Design

The research design was chosen to enable the researchers attain prevalent overview of the research context and capture information on the knowledge of a variety of stakeholders (Aguinis and Solarino, 2019). The design is deemed appropriate for reading complicated social phenomena (Haproff et al., 2018). This descriptive study was to test the relationships between management and quality healthcare delivery. The study therefore sought to establish the relationship between management practices and the quality of healthcare delivery and, by extension, the satisfaction patients enjoy from such services. Quantitative methods were used to assess the management of healthcare delivery in the KNUST hospital.

Study Population

The study population consists of staff of KNUST Hospital and in-patients who have spent a minimum of 24 hours in the hospital. This selection criterion was informed by the decision that patients and staff who have spent at least 24 hours in the hospital have knowledge about the management practices of the hospital. The researchers used purposive and simple random techniques to select the study population within the specified time. Table 1 presents information on the population of the study.

Table 1 Population for the Study

Category	Number
Senior Members	21
Senior Staff	154
Junior Staff	39
Contract Staff	51
In-Patients	125
Total	715

Source: KNUST Human Resource Division (2019); KNUST Hospital Records (2019)

Sample Size

Using Sloven's formula for determining sample size, $n = \frac{N}{1+Ne^2}$

Where □ = sample size, N = the population size and e = the margin of error

$$n = \frac{715}{1 + 715(0.05)^2} = 256.50 \cong 257$$

A sample size of 257 respondents were selected for the study in table 2..

Table 2 Sample for the Study

Study Category	Number
Senior Members	15
Senior Staffs	107
Junior Staffs	25
Contract Staffs	30
In-Patients	80
Total	257

Sampling Technique

The purposive sampling technique and simple random sample were used for the study. The purposive sampling technique was used to select the senior members and senior staff of the hospital. The researchers used the purposive sampling technique to limit the study to respondents that were relevant to the subject under consideration.

The simple random sampling technique was adopted in this study to enable the selection of junior and contract staff and in-patients who had spent a minimum of 24hrs in the hospital to give each constituent of the study population equal chance of being included in the sample.

Sources of Data

Primary and secondary sources of data were collected for the study. Primarily, data was sourced from information gathered from the questionnaires that were distributed via mobile assisted devices. Information gleaned from the KNUST Hospital Health Directorate's annual reports and annual review reports of the hospital and annual reports from the Ministry of Health (MoH) and Ghana Health Service (GHS) formed a major part of the primary data taken for the study. The secondary data was gleaned from books, theses and journal articles. The secondary records were used to corroborate information from the primary sources in aid of analysis and fact checking with previous studies on the subject matter.

Data Collection Instruments

The instrument used to collect data was a questionnaire. This was an arrangement of questions that are inscribed for participants to answer (Brenya and Warden, 2014).The primary data tool was a set of structured questionnaires. A Likert scale, with anchors ranging from "strongly disagree" to "strongly agree" "never" to "every time" and "sufficient to "not sufficient" was used. The researchers selected the right alternative to the query in accordance with the opinions of the participants. The questionnaire was framed in a clear manner to avoid misinterpretations and allowed the participants to understand and reply to the questions easily. The instrument consisted of two (2) sections; A and B. Section A was once in four parts and centred on the staff of KNUST Hospital. Section B consisted of questions, which focused on the relationship between the management of people, processes, and resources and quality healthcare delivery in the KNUST hospital. Prior to data collection at the hospital, permission was sought from the director to collect data from the workers and in-patients of the hospital for academic purposes. The participants were given the opportunity to respond to questionnaires on mobile-assisted devices. A structured questionnaires linked to a mobile- assisted device was used to collect data on hospital staff and in-patients with unique IDs to anonymise the data source.

In all, two hundred and forty (240) out of the two hundred and fifty-seven (257) staffs and patients participated. This represents about 93.3% of the sample size that were chosen by the researchers. Particularly, 170 of the respondents were healthcare staff and the remaining were in-patients. The healthcare staff were drawn from several departments of the hospital; maternity and child health, chronic illness, environmental health, reproductive health among others. The variety of responses to the questionnaires were viewed as satisfactory and sufficient for statistical analyses.

Data Analysis

The data was analysed and evaluated to decide their usefulness, consistency, credibility, and adequacy. Data collected from the survey was entered into MS-Excel 2010 for analysis, discussion, and presentation. Statistical calculations were presented in frequencies, percentages and tables using MS-Excel 2010 and Stata (version 14.0). The study quantitatively employed Pearson's Chi-square test to determine and establish the relationship between management practices and the delivery of quality healthcare by utilising all categories under each variable. In that regard, the overall management of healthcare practices was paired against the overall delivery of quality healthcare in the hospital.

Results and Discussions

The results and discussion/analyses of the study have been presented in frequencies, tables and percentages and qualitative analysis of same.

Characteristics of Respondents

The characteristics of respondents which formed the basis of the analysis of this study are gender, age, marital status, educational level, number of years worked and job positions of staff and in-patients.

Table 3 Characteristics of KNUST hospital staff

Age Categories	Gender		Total (n=170)
	Male (n=33), n(%)	Female (n=137), n(%)	
20-24	4 (12.9)	27 (87.1)	31
25-29	7 (18.29)	31 (81.58)	38
30-34	6 (26.09)	17 (73.91)	23
35-39	5 (25)	15 (75)	20
40-44	5 (22.73)	15 (77.27)	20
45 and above	6 (16.67)	30 (83.33)	36
Marital Status			
Single	18 (20.93)	68 (79.07)	86
Married	15 (19.48)	62 (80.52)	77
Divorced	0	7 (100)	7
Widow/Widower	0	0	0
Co-habiting	0	0	0
Other	0	0	0

Table 3 Characteristics of KNUST hospital staff (cont.)

Age Categories	Gender		Total (n=170)
	Male (n=33), n(%)	Female (n=137), n(%)	
Highest Academic Qualification			
Primary	1 (100)	0	1
Secondary	3 (11.54)	23 (88.46)	26
Tertiary	29 (20.28)	114 (79.72)	143
Other	0	0	0
Main Occupation			
Medical Officer	11 (64.71)	6 (35.29)	17
Nurse	9 (16.07)	47 (83.93)	56
Pharmacist	2 (40)	3 (60)	5
Laboratory Technician	0	11 (100)	11
Ward Assistant	7 (17.95)	32 (82.05)	39
Accountant	0	12 (100)	12
Midwife	0	5(100)	5
Other	4 (16)	21 (84)	25
Number of Years Worked in the Hospital			
Less than one year	1 (6.67)	14 (93.33)	15
1-5 years	9 (21.43)	33 (78.57)	42
6-10 years	8 (19.51)	33 (78.57)	41
11-15 years	10 (27.03)	27 (72.97)	37
16-20 years	4 (14.29)	24 (85.71)	28
21 years and above	1 (33.33)	6 (66.67)	7

Source: Researchers' Field Study (2019)

From Table 3, out of a total of 170 KNUST hospital personnel, 33 representing 19% were males and 137 representing 81% were females. Specifically, the study revealed that more females were represented than males. Majority (22%) of the respondents were within the age group of 25-29 years, followed closely by those in the age group 45 years and above. This was followed by those in the age group 20-24 years and 30-34years. The respondents in the age groups, 35-39 and 40-44 years were in the minority. Most of the respondents (51%) were single. About 77 (45%) were married whilst the divorced constituted only 4%. Academically, the highest qualification was tertiary education with 143 participants. This shows that most of the participants included in the study were educated. Approximately, 80% were females. Again, out of 56 nurses, majority (47) of them were females, followed by the ward assistant. Significantly, most of the staff had worked from 1-5years and 6-10years.

Healthcare Management Practice

This section of the analysis is to identify the management practice of healthcare at the KNUST hospital.

Table 4 Percentage Distribution of Healthcare Management Practice (HMP) at KNUST Hospital

HMP	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Decision making involves all staff	13.53	28.24	28.24	12.35	17.64
Information is easily disseminated within the hospital	15.88	21.18	20.58	21.18	21.17
Management relates well with staff	10.59	28.24	33.53	17.64	10
Staff are well motivated	16.47	12.35	36.47	22.35	12.36
Management timely resolve disputes fairly	19.41	17.06	27.65	18.82	17.06
Financial resources are efficiently allocated	17.06	19.41	28.24	25.88	9.41
Management encourages development of staff	12.94	7.65	25.88	32.94	20.59
Management encourages staff initiatives	21.76	17.06	20	26.47	14.71
Management ensures culture of maintenance of infrastructural facilities	11.18	11.76	22.35	32.35	22.36

From Table 4, majority (28.24%) of the respondents, disagreed and were neutral that decision making within the hospital involves all staff. This notwithstanding, 21.18% of the respondents agreed and 21.17% strongly agreed that information is easily disseminated within the hospital. In terms of management-staff relationship, the respondents were 33.53% neutral that management relates well with staff. We therefore infer that based on the analysis, the leadership of the hospital under review is approachable and supportive to its workers and patients. The hospital thus, has a strong organisational culture which embraces teamwork towards the delivery of healthcare.

Also, out of the 170 respondents, 36.47% were neutral that staff are well motivated, 27.65% reported that management timely resolves dispute fairly among staff. In addition, 28.24% of the respondents were neutral that financial resources are efficiently allocated within the hospital while 32.94% agreed that management encourage development of staff. Again, 26.47%, 32.35% and 32.35% of the staff agreed that management encourage staff initiative, ensures culture of maintenance of infrastructural facilities and promotes infrastructural development of the hospital respectively.

Table 5 Pearson's Chi-Square test between maternity and child health and drugs and vaccines

Healthcare Delivery		
Management Practices	**Maternity and Child Health**	
Drugs and Vaccines	Sufficient (%)	Not Sufficient (%)
Never	40	60
Almost Never	66.67	33.33
Occasionally/ Sometimes	22.73	77.27
Almost Every time	81.25	18.75
Every time	57.14	42.86

Pearson chi2 (4) = 14.9600 Pr = 0.005; Source: Researcher's Field Study (2019)

Under this section, questions concerning the hospital's capacity and capability to provide health care services on maternity and child health, and drugs and vaccines were posed. The responses from participants allowed for establishing the association between these variables. As shown in table 5 above, the probability value of 0.005 indicates that there is a strong direct relationship between maternity and child health and drugs and vaccines. This further explains that the more the drugs and vaccines are provided, backed by required management practices, the more efficient service delivery is realized on maternal and child health. This is in line with findings in the literature. A recent study by Munoz (2018) has revealed that efficient provision of vaccines has the proclivity of reducing the maternal and child mortality. In South Africa, it has been found that the leadership style affects the functioning of maternal health services (Mathole et al., 2018). The provision of supportive supervision in vaccination programmes, provision of maternal and child health practices training and ward inspections are among the functions played by healthcare managers to improve maternal and child health practices (Mathole et al., 2018).

Table 6 Pearson's Chi-Square test between environmental health and counselling services

Healthcare Delivery		
Management practices	**Environmental health**	
Counselling services	Sufficient (%)	Not Sufficient (%)
Never	54.55	45.45
Almost Never	12.5	87.5
Occasionally/ Sometimes	33.33	66.67
Almost Every time	73.91	26.09
Every time	70	30

Pears on chi2(4) = 13.2665 Pr = 0.010 Source: Field Study (2019)

From Table 6, the probability value of 0.010 shows that there is an association between environmental health and counselling services. That is as management put in more counselling services practices, the more efficient service delivery on environmental health, hence reducing cases on environmental health

Table 7 Distribution of staff availability in the hospital

Staff	Never (%)	Almost Never (%)	Occasionally/ Sometimes (%)	Almost Every Time (%)	Every Time (%)
Doctors	19.41	14.12	17.65	18.82	30
Nurses	9.41	15.29	19.41	27.06	28.82
Pharmacists	8.24	28.82	5.88	17.65	39.41
Midwives	12.94	17.06	26.47	12.35	31.18
Physician Assistants	21.18	18.24	24.12	8.82	27.65
Laboratory Technicians	22.35	11.76	24.71	31.18	10
Radiologic Technologist	12.94	17.06	30.59	31.18	8.24
Physical and occupational Therapists	14.12	9.41	30.59	34.71	11.18
Dieticians	12.94	14.12	35.88	27.65	9.41
Labourers	10.59	11.76	34.71	34.12	8.82
Orderlies	18.24	14.71	25.88	26.47	14.71
Security Personnel	14.12	18.24	35.29	25.29	7.06

Source: Field Study (2019)

From the table 7, 30% of the in-patients hinted that doctors were available every time while 14% indicated that they were almost never available. Again, 28.32% of in-patients were of the view that nurses were available every time while 9.41% hinted that they were never available. On the part of pharmacists, 39.41% of the participants pointed out that, pharmacists were available every time while 5.88% believed that they were occasionally/sometimes available. Also, 31.18% of the respondents opined that midwives were seen to be available every time while 12.35% were of the view that they were not always available every time. On the part of physician assistants, 27.65% of the in-patients were of the view that the former were available every time while 8.82% informants hinted that physician assistants were almost every time available. This suggests that the hospital has doctors, nurses, pharmacists, physician assistants and laboratory technicians among many others. Although the hospital has all these cadres of healthcare workers, most of them were, most of the time not available. This has posed as a challenge to the delivery of quality healthcare services.

Challenges of Efficient Management Practices in the Healthcare Sector

The study also explored the challenges to the efficient management practices in the healthcare sector. The responses on the challenges facing management of healthcare delivery system in the KNUST hospital are summarised in the table 8.

Table 8 The challenges of efficient management practices in the healthcare sector

Aspect	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Self-medication	14.12	9.41	34.12	28.82	13.53
Superstition	10.59	11.76	34.71	31.76	11.18
Confidentiality of patients' records	15.29	14.12	39.41	18.82	12.35
Cost of health care	18.24	14.71	25.88	24.12	17.06
Attitude of medical staff	14.12	18.24	35.29	22.94	9.41
Proximity to the hospital	14.12	9.41	34.12	28.82	13.53
Lack of motivation	10.59	11.76	34.71	31.76	11.18
Inadequate medical facilities	15.29	14.12	39.41	18.82	12.35
Production of incompetent health care professionals	12.94	17.06	30.59	28.82	10.59
Shortage of health care professionals	14.12	9.41	30.59	34.71	11.18
Low participation in health insurance	12.94	14.12	35.88	27.65	9.41
Dissatisfaction from health care professionals	10.59	11.76	34.71	34.12	8.82
Service quality	18.24	14.71	25.88	26.47	14.71

Source: Field Study (2019)

From Table 8, the Likert scaled responses to the prompt, "self-medication is a challenge to the efficient management practices in the healthcare sector," revealed that 14.12% strongly disagreed that self-medication by the people was a challenge and 9.41% disagreed. Comparatively, 34.12% were neutral that self-medication by the people was a challenge and 28.22% agreed and 11.18% strongly agreed that superstition was a challenge to effective healthcare sector. Aggregating the "neutral" results show that self-medication, superstition, confidentiality, cost of health care as well as inadequate medical facilities were challenges. It then tends out to be obvious that self-medication among others was a challenge to the efficient management practices in the healthcare sector in the KNUST hospital. This finding confirms previous surveys conducted on self-medication in Ghana. The study by Donkor et al. (2012) for instance, revealed that self-medication is a challenge to efficient and effective healthcare delivery. The respondents' responses to "lack of motivation (for workers) as a challenge to the efficient management practices in the KNUST hospital" show that 10.59% strongly disagree with this statement and 11.76% disagree. In addition, 34.71% were neutral, 31.76. % agreed and 11.18% strongly agreed with this statement. The results from this data imply that lack of both financial and non-financial morale for the workers in the KNUST hospital serves a demotivating factor to the efficient management practices in the healthcare sector in the hospital. This is consistent with previous findings. In a research correlating morale and motivation with employees' behaviour, Mbindyo and his contemporaries have suggested that supportive leadership have the tendency to establish proper working relationship between leaders and subordinates (Mbindyo et al., 2009). They further argued that improving motivation through the provision

of incentives boosts employees' performance at the work place (Mbindyo et al., 2009). The literature argues that the absence of motivation in low and middle-income countries have over the years contributed to the problem of brain drain on the continent of Africa (Willis-Shattuck et al., 2008). The work of Willis-Shattuck and his peers has put forward the argument that both financial and non-financial incentives motivate most health workers to work in both underserved and relatively developed areas (Willis-Shattuck et al., 2008).

Responses to "inadequate medical facilities as a challenge to the efficient management practices in the healthcare sector" revealed that 15.29% strongly disagreed with this prompt and 14.12% disagreed. Adding to the above, 39.41% were neutral, 18.82% agreed and 12.35% strongly agreed with this statement. This challenge has been in existence since the colonial inception of modern hospitals (Adu-Gyamfi and Adjei, 2017). In support, recent scholarship on healthcare confirms the idea that aside inadequate human resources, many hospitals and health institutions in Africa have inadequate medical facilities making the delivery of healthcare a major menace to the wellbeing of the people (Oleribe et al., 2019). In Nigeria, the inadequacy of medical infrastructure has been challenging the delivery of proper healthcare in the country (Akinwale, 2010). According to the findings of Akinwale (2010), this problem exists particularly due to corruption and negligence on the part of government and other stakeholders. Also, response to "production of incompetent health care professionals as a challenge to the efficient management practices in the healthcare sector" revealed the following: 12.94% strongly disagreed and 17.06% disagreed. 30.59% were neutral, 28.82% agreed and 10.59% strongly agreed with this statement. Research has also revealed that most of the training institutions and schools produce incompetent health care professionals who in tend serve as a challenge to efficient management practices in the healthcare sector in the hospital (Chan et al., 2019). Consequently, when the people, who become management professionals in the hospitals are not trained adequately, they tend to offer substandard services to the people who patronize the hospital (Manthorpe et al., 2019).

Our findings argue that the delivery of quality health service has been a challenge to the management of the health sector and the KNUST hospital in particular. Significantly, when respondents were asked about how the delivery of "service quality is a challenge to efficient management practices in the healthcare sector," the results showed that 18.24% strongly disagreed and 14.71% disagreed. However, 25.88% were neutrals and 26.47% agreed whereas 14.71% strongly agreed. We infer from our responses that the quality of service being rendered to people who visit the hospital can be a challenge to the way and manner they patronise the hospital. To wit, the degree to which health services meet patients' needs and expectations is of concern to both health workers and patients (Fenton et al, 2019).

Conclusion

Healthcare is on a collision course with patient needs and economic reality. Without significant changes, the scale of the problem will only get worse. Lack of motivation, shortage of and dissatisfaction of healthcare givers, inadequate facilities among many others were found out by this study as the major constraints to quality healthcare delivery in the KNUST hospital. Although, the problems in the KNUST hospital are varied, they are surmountable in many ways. The fragmented health care delivery system delivers poor-quality care. The health care professionals who have the ability to help achieve a higher-performing health care system are in limited supply in Ghana and the

KNUST hospital in particular. Our evaluation has revealed that the health care system in KNUST hospital is limited in terms of clinicians and health care facilities. As a matter of fact, quality health care delivery and management practices are important components that professionals and patients crave for as there exist a strong association between the former and the latter (Sweis et al., 2019; Sullivan and Chabot, 2018). It is therefore important that from time to time, health care services are evaluated to find out whether the deficiencies (if any) do exist and the measures that can be taken to rectify them.

Recommendations and Implications to Healthcare Managers.

From our study, it is imperative to make the following recommendations:

1. The management of the hospital should continue to improve healthcare management practice. This is because enhanced management practices significantly improve quality of healthcare delivery.
2. The management of the hospital should improve efficiency of services to reduce the waiting time in accessing health care. Essentially, in the absence of adequate physicians at the hospital, the hospital should assign more health professionals in peak periods or days to enable them to cater for patients.
3. The management of the hospital should adopt strategies such as increasing motivation of workers, flexible scheduling of duties and decentralising decision making by junior staff to help attract new workers and retain old healthcare personnel in the healthcare sector.
4. The management of the hospital should adopt strategic planning techniques in the management of health care delivery in the hospital in general.
5. The management of the hospital should be innovative and come out with programmes and activities that help them to generate internally generated funds to put up facilities to help in smooth delivery of health care services.
6. The management of the hospital should undertake outreach programmes in the surrounding communities to sensitise the people on the negative effects of self-medication and superstition

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Original article

Received: Dec.17, 2019;
Accepted: August 5, 2020;
Published: August 25, 2020

Coproduced Research in Health and Welfare with a Focus on Cooperation between Thailand and Sweden – a Scoping Review

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Abstract

Objectives: The aim of this scoping review was to explore coproduced research between Thailand and Sweden within the area of health and welfare, through identifying the origin of data collection, topics and methods of analysis, and the quantity and frequency of the collaboration based on the affiliations of the published articles. **Methods:** The study design was based on principles for scoping review studies. A systematic literature search was conducted to identify research articles in the field of health and welfare starting from the first identified article up to and including 2018, in two databases, Scopus and Web of Science. A total of 116 articles were identified, of which 43 fulfilled the inclusion criteria and were included in the review. **Results:** The first of the studies found was published in 1993, but more than half of them have been published in the last five years. The data material came mainly from Thailand (n = 37 of 43). Several different study designs were applied, including qualitative (n = 21), quantitative (n = 18), and mixed methods (n = 3). A total of 40 different universities or research units, most of them situated in Thailand, participated in the coproduction, with three clear groupings of collaborating universities and research units in the two countries. **Conclusion:** The review shows that there is a growing amount of research in the areas of health and welfare from a cooperation between research institutions in Thailand and Sweden. However, Thailand is the main provider in the data collection.

Keywords: Caring sciences, coproduction of research, public health, bilateral cooperation

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Introduction

Developing scientific knowledge in the area of health and welfare is central to improving human living conditions. Since 1989 there has been an agreement between Sweden and Thailand on economic, technical, and scientific cooperation (The Government of Sweden, 1989). There was also a Joint Plan of Action between the Governments of the Kingdoms of Sweden and Thailand during the period 2013-2017, stating that Sweden and Thailand would enhance existing academic cooperation and promote new initiatives of collaboration at all levels of education, for example research institutes as well as science and technology agencies (Government of Sweden and Government of Thailand, 2013).

Health and welfare are closely connected; one could say that they are necessary conditions for each other. People's welfare conditions, regardless of country, include access to healthcare and educational possibilities, which is naturally related to the welfare resources and socioeconomic conditions of each country (Fritzell & Lundberg, 2006). A welfare state, according to Heintz & Lund (2012), is one where the government implements a set of social and economic policies and a subsequent allocation of resources to ensure the well-being of the country's residents or citizens, and where the government's primary role is to ensure the well-being of the population.

Thailand is described as a middle-income country and Sweden as high-income, (World Bank, 2020), and both countries are described as welfare states (Nam, 2015, Raphael, 2014). Both are also member states of the World Health Organization (WHO), which has defined health as a state of complete physical, mental, and social well-being rather than merely the absence of disease or infirmity (WHO, 1948). The direction and scope of health and welfare varies between the countries, but both have a health policy based on principles of universal health coverage for the population (Sumriddetchkajorn et al., 2019; Burström et al., 2017). This scoping review has recognised the coproduction of research within the area of health and welfare in Thailand and Sweden, by identifying published articles and exploring the amount of similar research coproduction. The concept of coproduction is used in the present paper to illustrate when researchers have produced the research in cooperation, identified by the affiliations found in the published article. The aim of this scoping review was to explore coproduced research between Thailand and Sweden within the area of health and welfare, through identifying the origin of data collection, topics and methods of analysis, and the quantity and frequency of the collaboration based on the affiliations of the published articles.

Methods

A scoping study design can contribute by identifying the topics, quantity, and frequency of published articles in a certain area of research (Munn et al., 2018). This search was conducted in the Scopus and Web of Science databases as they contained information on the authors' scientific affiliations in all editions, and it was precisely the affiliations of the published articles that were one of our main interests. Particularly Scopus has been found to have a high degree of coverage (Lasda Bergman, 2012; Powell & Peterson, 2017). The chosen databases have predefined search terms, Scopus including the areas of medicine, social sciences, psychology, multidisciplinary, nursing, and health professions, and Web of Science the areas of care, medicine, sociology, and health, all of which included 22 medical terms that can be related to public health as well as nursing and healthcare.

The inclusion criteria were peer-reviewed scientific articles, from the first published article until 2018, that included affiliations of authors demonstrating a cooperation between Thailand and Sweden. The search was conducted on 9 of July 2019 by a librarian at Mälardalen university.

The analysis of all available abstracts was made by the authors (PT, GÖ) and was conducted according to principles for a scoping review (Munn et al., 2018). As a scoping review, the interest is the research field, the collaborating research networks, and the applied methods. The analysis criteria were that the abstract had to be complete and that Thai or Swedish data in the area of health and welfare had to be used. The further criteria for excluding articles were: studies on animals or from green biology, studies in the field of microbiology, and pharmacological or technological studies. Table 1 describes the process, which resulted in a final sample of 43 articles.

Table 1. The process of the scoping review in the databases

Database	Hits	Duplicates	Reduced sample	Exclusions	Final sample
Scopus	59		59	26	33
Web of Science	94	37	57	47	10
Total	**153**		**116**	**73**	**43**

Analysis of content

The abstract was read through and sorted by aims, sample, methods, and research content. The analysis of content, e.g. research areas, was later done by categorising similar areas together, based on either more specialised care and treatment within healthcare institutions or out in living communities within public health based on the different participant groups.

Analysis of affiliations

First, a table (2) was constructed showing the frequency based on the affiliations of the published articles. In order to create a picture of the coproduction pattern between the different universities, the network analysis method was adapted using a visualisation program Gephi (Bastian, Heymann, & Jacomy, 2009). The visualised result identifies different relationships: the larger the circle, the more publications; the wider the line connecting the places, the more coproductions (see Figure 1).

Results

This scoping study found that there are 19 Thai and 18 Swedish scientific affiliates cooperating in the 43 identified articles published within the area of health and welfare (see Table 2). These affiliations are visualised in Figure 1, below. The results further show that similar numbers of quantitative and qualitative research methods were used in the identified coproduced articles. Another result was that Thailand was usually the host of the data collections. Two major areas of research were identified: public health and specialised healthcare.

The frequency of affiliations

This study also shows that among the 19 Thai and 18 Swedish scientific affiliates' cooperating in the 43 articles, the affiliations from Thailand are mainly from Boromarajonani College of Nursing, followed closely by Mahidol University (Table 2). In Sweden, most of the coproduction of health and welfare research was attributed to affiliations at Mälardalen University, followed by Uppsala University up to and including 2018.

Table 2. Thai and Swedish coproduced research articles in health and welfare, with 37 identified affiliations through the database search from ever to 2018

Thai affiliations (n=19)	No	Swedish affiliations (n=18)	No
Boromarajonani College of Nursing	12	Mälardalen University	17
Mahidol University	11	Uppsala University	10
Ministry of Public Health	7	Karolinska Institutet	8
Praboromarajchanok Institute for Health Workforce Development (PIHWD)	6	Swedish Red Cross University College	7
Rangsit University	6	Malmö University	2
Prachomklao College of Nursing	4	Umeå University	2
Chulalongkorn University	3	University of Gothenburg	2
Prince of Songkla University	3	University of Lund	2
Chiang Mai University	2	Ersta Sköndal University College	1
Changwat Nonthaburi, Research Division	1	Halmstad University	
JATA, RIT, TB HIV Res Project, Chiang Rai	1	Karolinska University Hospital	1
Khon Kaen University	1	Linnaeus University	1
Kasetsart University	1	Lund University Hospital	1
Kuakarun College of Nursing, Bangkok	1	Mälardalen Research Center	1
Pramongkutklao Hospital, Bangkok	1	Nordic School of Public Health,	1
Rajavithi Hospital, Bangkok	1	Gothenburg,	1
School of Nursing, Pathum Thani	1	Stockholm City Council	1
Suranaree University of Technology	1	University Hospital MAS, Malmö	1
TB HIV Resb Fdn, Chiang Rai		University Hospital, Uppsala	1

The visualisation of coproduced research

The result of the visualisation provides an overview of the collaboration between the universities. The network of lines shows how the different places are connected to each other: the number of to-and-from lines, and the size of a node, represent the node's importance; e.g., the breadth of the lines shows the magnitude of the collaboration. The size of the circles represents the significance in the network of the various seats of learning (circle size in proportion to number of connections, the so-called degree-centrality indicator); see Figure 1.

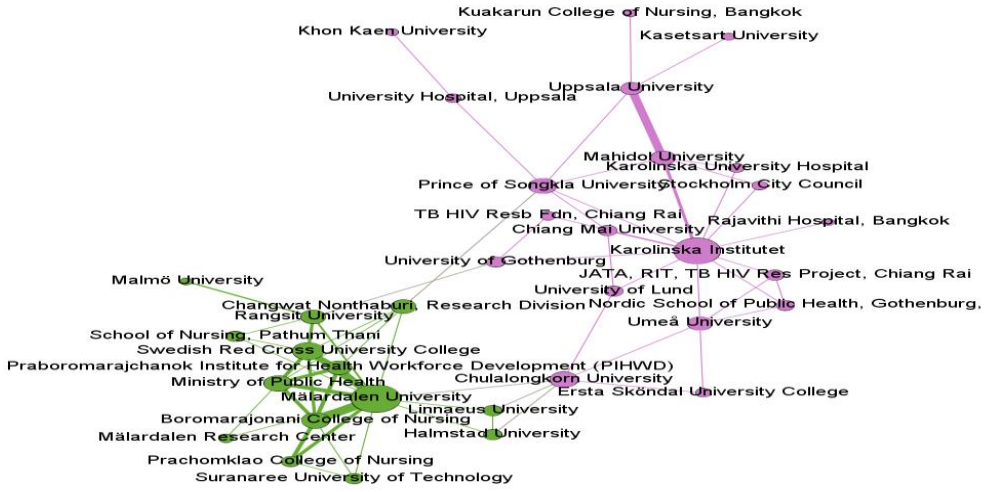

Figure 1. Spread chart of Thai and Swedish coproduced health and welfare research up to and including 2018.

This visualisation shows three somewhat thicker groupings of cooperation (Figure 1). The two that seem to have tighter collaboration involve primarily Mälardalen University and the Boromarajonani College of Nursing, with another looser grouping involving collaboration among Uppsala University, Mahidol University, and Karolinska institutet. A third grouping that stands out in the network analysis method is the collaboration involving the university hospitals in Lund and Malmö in Sweden and Pramongkutklao Hospital in Bangkok, Thailand.

Comparable amount of quantitative and qualitative research methods

The first coproduced article within health and welfare, published in 1993, used quantitative methods (Vichaichalermvong, Nilner, Panmekiate, & Petersson, 1993). After this, two other quantitative articles based on registers were published in late 1999 (Plitponkarnpim, Andersson, Horte, & Svanström, 1999; Plitponkarnpim, Andersson, Jansson, & Svanström, 1999). However, from the year 2000, the articles coproduced by Thai and Swedish researchers and published in the field of health and welfare appeared almost every year, with an increased number of articles during the entire study period, peaking at nine articles in 2018. While this is perhaps not a huge number, the field of coproduced research within health and welfare nonetheless seems to be growing and developing. This scoping review also found an increased use of qualitative methods: the first qualitative article was published in 2001, followed by a peak of seven published in 2016 and five in 2018. This peak in qualitative methods used in the published articles found in the latter part of the study period, however, had levelled off by the last year of this study (2018), when quantitative methods were back again with numbers similar to those of the qualitative methods used. In sum half of the articles found in our data search used quantitative and qualitative methods and four used mixed methods.

Origin of the data

The data material was mostly collected in Thailand, with a few exceptions; for example, one article explores intimate partner violence against Thai women living in Sweden (Pongthippat, Darvishpour, Kijsomporn, & Östlund, 2018). Three projects compare data from both countries; one compares register data in 51 countries (Plitponkarnpim, Andersson, Jansson, & Svanström, 1999) and another is comparing young people's experiences in the two countries (Thitasan, Velandia, Howharn, & Brunnberg, 2017).

The topics: public health and specialised healthcare

The articles found in this scoping review can be divided into two main areas within health and welfare: public health and specialised healthcare (Table 3). This labelling can of course be done in different ways but sorting the articles into these two areas helped us recognise the dispersion of the studies found.

Table 3. Research areas of publications coproduced by Thailand and Sweden within health and welfare, from 1993-2018

Public health	Reference	Specialized healthcare	Reference
Deaths and suicide	Vichaichalermvong et al., 1993; Plitponkarnpim et al., 1999 a,b; Thomyangkoon et al., 2005; Vandepitte et al., 2014	Diagnosis-specific treatments (Diabetes, Tuberculosis, Cancer)	Ngamvithayapong et al., 2001; Lundberg, & Trichorb, 2001; Ngamvithayapong-Yanai et al., 2005; Lundberg, & Rattanasuwan, 2007; Unahalekhaka et al., 2007; Lundberg, & Thrakul, 2012, 2013; Choowong et al., 2016, 2017, 2018; Boonsatean et al., 2018;

Table 3. Research areas of publications coproduced by Thailand and Sweden within health and welfare, from 1993-2018 (cont.)

Public health	Reference	Specialized healthcare	Reference
Teenage parenting	Sriyasak et al., 2015, 2016, 2018 a, b	Women's health	Cairu et al., 2002; Liabsuetrakul et al., 2003; Talungchit et al., 2014; Grandahl et al., 2018; Phoosuwan et al., 2018; Pattraporn et al., 2018
Aging	Choowattanapakorn et al., 2010; Asp et al., 2016; Manasatchakun et al., 2018	Nursing and pain management	Chatchumni et al., 2015, 2016 a,b
Alcohol addiction	Hanpatchaiyakul et al., 2014, 2017	Nursing and caring	Lundberg, & Boonprasabhai, 2001; Lundberg, & Kerdonfag, 2010; Runkawatt et al., 2013
Behavioural problems	Cederblad et al., 2001	Alcohol treatment	Hanpatchaiyakul et al., 2016 a, b
Adolescent sexuality	Thitasan et al., 2017	Dental care	Vichaichalermvong et al., 1993
Intimate partner violence	Pongthippat et al., 2018		

Within the area of specialised healthcare, several studies were found that explored the caring sciences in relation to nursing students' development of skills and to specialised care practices focusing on patient education and pain management (Lundberg & Boonprasabhai, 2001; Lundberg & Kerdonfag, 2010; Runkawatt, Gustafsson & Engström 2013). In specialised care, three diagnosis areas were identified: diabetes, tuberculosis, and cancer (Ngamvithayapong, Yanai, Winkvist, & Diwan, 2001; Lundberg & Trichorb, 2001; Ngamvithayapong-Yanai, Winkvist, Luangjina, & Diwan, 2005; Unahalekhaka, Jamulitrat, Chongsuvivatwong, & Øvretveit, 2007; Lundberg & Rattanasuwan, 2007; Lundberg & Thrakul, 2012; Lundberg & Thrakul, 2013; Choowong, Tillgren, & Söderbäck, 2016; Choowong, Tillgren, & Söderbäck, 2017; Lundberg & Thrakul, 2018; Boonsatean, Carlsson, Dychawy Rosner, & Östman, 2018; Choowong, Tillgren, & Söderbäck, 2018).

Other areas explored in the coproduced research included different aspects of women's health, for example deliveries, LPV vaccinations, and late pregnancy difficulties (Cairu et al., 2002; Liabsuetrakul, Chongsuvivatwong, Lumbiganon, & Lindmark, 2003; Talungchit, Liabsuetrakul, & Lindmark, 2014; Grandahl et al., 2018; Phoosuwan, Eriksson, & Lundberg, 2018; Pattraporn, Chayachinda, Niyomnaitham, & Kamolvit, 2018). Moreover, alcohol treatment that in Thailand, is mostly carried out by nurses at hospitals (Hanpatchaiyakul, Eriksson, Kijsomporn, & Östlund, 2016 a, b).

In the research area of public health, the published articles relate to more general welfare needs that are more often cared for in the community or by family and relatives, such as aging (Choowattanapakorn, Aléx, Lundman, Norberg, & Nygren, 2010; Asp, Manasatchakun, Chotiga, & Roxberg, 2016; Manasatchakun, Choowattanapakorn, Roxberg, & Asp, 2018), teenage parenting (Sriyasak, Almqvist, Sridawruang, & Häggström-Nordin 2015; Sriyasak, Almqvist, Sridawruang, Neamsakul, & Häggström-Nordin, 2016; Sriyasak, Almqvist, Sridawruang, Neamsakul, & Häggström-Nordin, 2018; Sriyasak, Almqvist, Sridawruang, & Häggström-Nordin, 2018), .and alcohol addiction from a user perspective (Hanpatchaiyakul, Eriksson, Kijsompon, & Östlund, 2014; Hanpatchaiyakul, Eriksson, Kijsomporn, & Östlund, 2017). The division into the research areas of public health and specialised healthcare was made to underline the difference between welfare aspects focusing on public needs and the more specialised healthcare needs related to a diagnosis, whether this is treated in hospital or within community care.

Discussion

This scoping review identified research articles coproduced between Thailand and Sweden within the area of health and welfare, since the first scientific articles was published (1993) up to year 2018. This review has explored the origin of data collection, topics and methods of analysis, and the quantity and frequency of the collaboration based on the affiliations of the published articles.

The visualisation of the collaboration between researchers and their respective affiliations in Thailand and Sweden using the network analysis method shows that there are many universities and research units in the two countries participating in health and welfare research; however, based on the visualised picture, three groupings of collaborations seem to be more active. An important challenge involves how a collaboration can be developed and deepened, and what spin-off effects it can have on other research fields in Thailand and Sweden. In a study, Sherwood & Drury (2006) have shown that international collaboration offers health scientists possibilities to share their experiences, data and methods, which can serve as a foundation for new and important perspectives on current practice. The research collaboration between Thailand and Sweden that this study has shown has likely contributed to such effects for researchers within the studied area of health and welfare.

The articles found in thus study related to topics concerning health and welfare were divided into two research areas: public health and specialised healthcare. This categorisation helped make the dispersion of the articles more recognisable. The identified articles in the present review seem to be mostly related to nursing and healthcare work. However, several studies directly related to welfare aspects were found in the area of public health, for example concerning teenage parenting (Sriyasak et al., 2015, 2016, 2018 a, b), and aging (Choowattanapakorn et al., 2010; Asp, et al., 2016; Manasatchakun, et al. 2018), suggesting that public health issues like the areas mentioned above are essential parts of the welfare state's responsibilities.

Most of the articles identified are based on data collected in Thailand, with only three empirical studies comparing data from the two countries. Due to this uneven balance of data collection, this scoping review argues that bilateral research among these two countries seems to be partly one-sided, extending research evidence in one country or, putting it more critically, using one country for research purposes and the other for supervising the research. For future developments of this bilateral coproduction in health and welfare, a suggestion would be to collect and compare empirical data where possible. The current review found only two articles comparing the two countries, one focusing on adolescent sexuality (Thitasan et al., 2017) and the other exploring resilience among people over 60 years of age (Choowattanapakorn et al., 2010). However, this scoping review identified a richness of research methods used, arguing that this could be understood as a characteristic of a developing research area, recognisable when a research field is growing.

Methodological aspects

A critical question is whether the results have been limited due to the search being conducted in only two citation databases, Scopus and Web of Science. The reason this was done was that these were the only databases that contained information on all years of publication, including author affiliations. The fact that only two databases were used may have affected the results, as there might be further cooperation between Thailand and Sweden that was not identified in the current review. However, our focus on health and welfare, which is both an interdisciplinary and intradisciplinary field, is comparable with biometric studies that have shown that one of these databases, Scopus, has a very high degree of coverage compared to other databases, and also shows high quality (Lasda Bergman et al., 2012; Powell & Peterson, 2017).

Conclusion

From a Swedish perspective, the coproduction of research in the area of health and welfare has increased the number of international publications for the involved research partners. The coproduction has also increased the academic competence and research progress in Thailand, as well as in Sweden, and has contributed to progress in knowledge and academic developments. Finally, the bilateral cooperation has the potential to lead to more educational and academic improvements, such as facilitating post doc education for international researchers in Sweden. Even more important, however, is that bilateral research coproduction and its findings will have influences on national as well as transnational healthcare and welfare practices.

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Original article

Received: April 13, 2020;
Accepted: August 10,2020;
Published: August 25,2020

A Review of Literature of Design Thinking in Health Education

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Abstract

Background: The 21st Century skills are crucial for nursing and other health education regarding critical thinking, creativity, collaboration and communication. To develop these skills, design thinking (DT) framework could be an effective tool. Although it has been introduced to health education for decades, evidence of its application in Thai health care education is still limited. This article aimed to identify the use and effectiveness of design thinking concept in health care education and discuss further implication. **Method**: Search terms, namely, "design thinking" and "health education" were used to search in CINAHL, a journal indexing tool of research literature from nursing and other allied health professions, and Google Scholar. Hand search was used to seek for relevant papers from reference lists. Inclusion and exclusion criteria were applied for paper selection. **Results**: The five articles met inclusion criteria. One is the qualitative review applying scoping review method to review the design thinking framework in health professional education. Three article was a primary research which conducted in interdisciplinary context. One is a research article which discusses about three case study research. All five studies recognized DT as an effective tool for improving quality of health care education, however DT course design should be well designed which should be suitable for student characters. **Conclusion**: Design thinking could benefit both health education and health professions education staff. For health education, design thinking could be used to improve critical thinking skill, however precise DT course design and student centered approach is key. DT combining with other frameworks (e.g. system thinking) could be useful for minimizing unintended consequences.

Key words: Design thinking, Health care education, Review article

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Introduction

1. What is design thinking?

Design thinking (DT) concept is recognized as a creative and human centered process for designing a product or service to suitable for a custom user (Habash, 2017; Liedtka, 2018; Plattner, 2018). There are several concepts around DT concepts. For example, Hasso Plattner Institute of Design at Stanford (Stanford d.school) design thinking process comprises of five steps, namely, "empathize", "define", "ideate", "prototype" and "test" (Plattner, 2018; Habash, 2017). Firstly, a service user needs to be empathized, therefore making sense of his or her need, thinking and behavior is key (The Interaction Design Foundation, 2020). Secondly, defining the problem by focusing on analyzing and synthesizing a service user's problems. Thus, the second stage should be flexible and service user centered (The Interaction Design Foundation, 2020). Thirdly, ideation is creating ideas for solving the client's problem. This could link with the next step; prototyping. Prototyping requires a good cycle of create and re- create a protocol or solution for problem solving. The last step is testing the protocol which will be used to prove whether the solution is working. Although, DT contains the certain five steps of working, it is not a linear process (The Interaction Design Foundation, 2020). Lande (2010) indicates the epistemological view of DT as human centered approach, empathy and mindful of process, prototyping and collaboration, however there are two points of views adding to DT concepts which are "show don't tell" (adding digital communication and storytelling) and "bias towards action" (working on action based instead of discussion based practice).

2. Why DT is important for health education?

DT is recognized as an effective concept to improve innovation or problem solving which ensuring efficiency, and effectiveness with regards to working based on both service user's and service provider's needs (Altman, M., Huang, T. T., & Breland, J. Y. 2018; Badwan et al., 2018). DT is not only improving client centered and holistic consideration for patient care, but also this should influence student personal development. For example, developing an innovation for fall prevention requires service user feedback in order to improve a customized and holistic innovation for an older person which could be more practical and sustainable. This concept could be fitted with both health education and health care service contexts. DT could be used to improve the 21st century education skills regarding soft skills, such as, critical thinking, creativity, collaboration and communication. These skills could influence learners to reach the national Desired Outcomes of Education (DOE), for example, Thai DOE is focusing on learner person, innovative co-creator and active citizen (Office of the Education Council, 2018).

Research Methodology

Objectives

To identify the use and effectiveness of design thinking concept in health care education.

Study Design

Review of literature.

Method

A review of literature was cried out. Inclusion and exclusion criteria were applied for this review. Search terms were "design thinking in health education" which was limited in research title. All search terms, inclusion and exclusion criteria were applied to both CINAHL and Google scholar. Moreover, reference lists were searched manually.

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Inclusion criteria

1. Using design thinking framework as the main of the study or research question(s).
2. Using design thinking in health educational context.
3. Publication year 2010 – 2020.
4. Published in Thai or English language.
5. Full text are available online.
6. Published in an academic journal.

Exclusion criteria

1. commentary article
2. Pilot study

Results

Twenty eight papers were retrieved from CINAHL and three papers were retrieved from Google scholar. One paper was found by reference list searching. However, there were five papers met inclusion criteria CINAHL (2) and Google scholar (3).

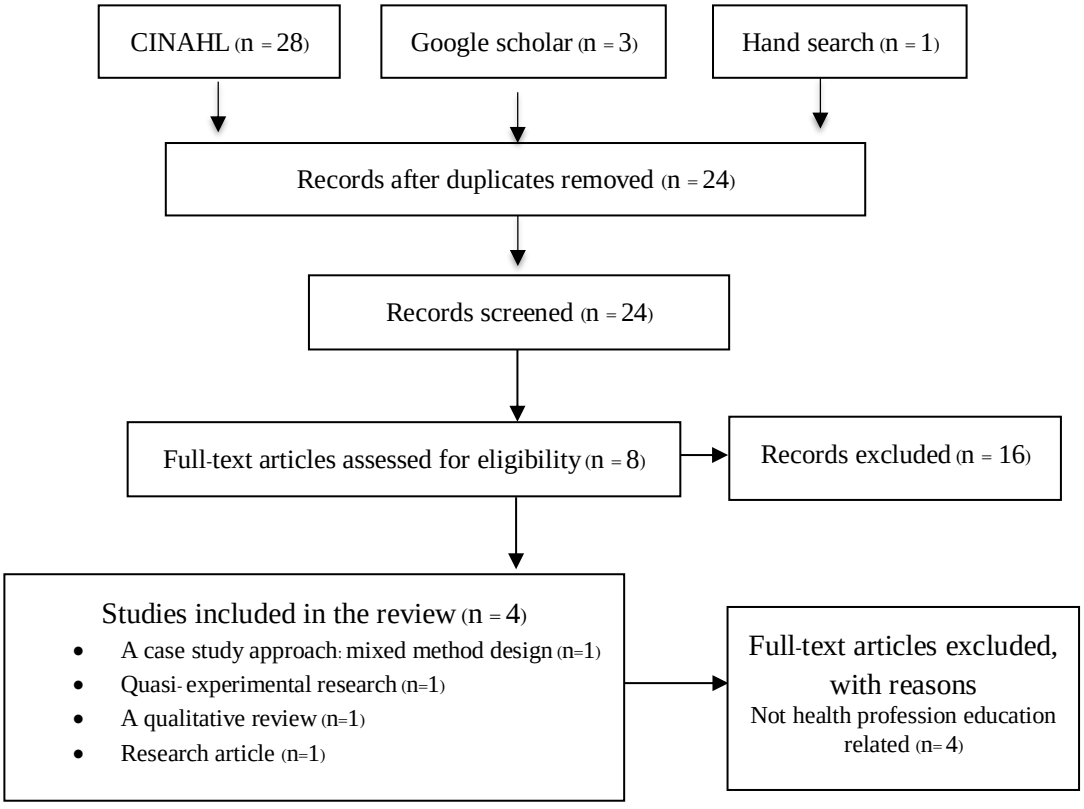

Fig.1 Article review flow diagram

Table 1 Overview of the five selected papers

	Title and author	Objective and method	Result
1.	Design thinking: an educational model towards creative confidence (Rauth et al., 2010).	- Concept analysis of DT -Qualitative interview regarding experts from USA and Germany (n=17)	**1. Concept analysis:** basic concepts of DT comprises of: 1) Human centered process 2) Mindful of process 3) Empathy 4) Culture of prototyping 5) Show don't tell mindset 6) Bias towards action **2. Qualitative interview:** 2.1 DT is a dynamic process which could create creative confidence 2.2 Goals of DT education are: 1) cognitive knowledge transfer 2) emotional and motivational abilities 3) competencies and skills learning 4) open category: students should be free to express their ideas regardless frameworks 5) changes in behaviors 2.3 Modes and process steps: 1) the emphasize- mode: to improve better understanding of the problems and needs of clients, interview and observation should be taught in this phase. 2) the define- mode: vein diagram or two by two matrix are recommended. 3) the ideation- mode: brainstorming is recommended. 4) the prototyping- mode: physical sketching or computer simulation are recommended. 5) the test- mode: students should be able to evaluate their own works for further improvement.
2.	Design thinking as a tool for interdisciplinary education in health care (Van de Grift and Kroeze, 2016)	- Applying a case study approach: mixed method design - Using "Hacking Healthcare" which was a 15 weeks Intervention for multidisciplinary groups (n=24) - Applying three stages of DT framework: 1) inspiration (8 weeks), 2) ideation (5 weeks) and 3) implementation (2 weeks)	1. Self- rated questionnaire: 8.5/10 which means that the participants satisfied with the "Hacking Healthcare" course 2. Interview data: positive perspectives towards the "Hacking Healthcare" course

Table 1 Overview of the five selected papers (Cont.)

Title and author	Objective and method	Result
3. The importance of design thinking in medical education (Badwan et al., 2018)	- Quasi-experimental research using game based learning - Working on curriculum development	DT improves academic and clinical development as well as personal attributes regarding creative confidence, toleration of uncertainty and acceptance of iteratively innovative improvement
4. A qualitative review of the design thinking framework in health professions education (McLaughlin et al., 2019)	- Applying scoping review - Inclusion and exclusion criteria were applied for paper selection - Critically apprised 15 papers -	1. Various styles of DT frameworks were found from selected studies 2. Almost all studies provided non-DT outcome measured 3. DT framework is useful for improving multidisciplinary collaboration and participation of stakeholders 4. DT framework is effective on human centered approach regarding problem and need identification
5. Re-thinking health through design: collaborations in research, education and practice (Rowe et al. 2020)	- To review relevant DT research	1. The use and effectiveness of three case studies: 1) end of life care, 2) interdisciplinary health education and 3) community based health care. 2. The "model of collaborative clinical care" should be promoted

Discussion

1. The use of DT concept and its effectiveness in health care education

DT concept was applied for various research designs. DT was used in health care education both single and interdisciplinary education. Rauth et al. (2010) mentioned that basic concepts of DT should comprise of human centered process, mindful of process, empathy, culture of prototyping, and "show don't tell" mindset. It could be claimed that DT could be used to create creative confidence for students (Rauth et al. 2010; Badwan et al. 2018) and collaboration between team members (Cahn et al. 2016; McLaughlin, 2019). Although DT process could improve learners to be critical, creative and aware of human centered approach, background of the students should be considered before applying DT framework.

Van de Grift and Kroeze (2016) applied a case study approach in DT as a tool for interdisciplinary education in health care research: "Hacking Healthcare" course. The study took fifteen weeks which were 1) inspiration phase (8 weeks), 2) ideation phase (5 weeks) and 3) implementation phase (2 weeks). Results of the study showed that DT could be an effective course for interdisciplinary group with regard to high self-rated rating score (8.5 out of 10) and Interview data was positive. However, course design and student characteristics required special consideration, for example, art students are probably prefer working independently compared to align health and social science students (Van de Grift and Kroeze, 2016).

McLaughlin (2019) conducted a scoping review of the design thinking framework in

health professions education. This study found that DT framework could be useful for improving multidisciplinary collaboration and participation of stakeholders. Although DT framework seemed effective on human centered approach regarding problem and need identification, this study found that almost all studies provided non- DT outcome measured.

2. The implication of DT in health educator management

The two main points for further DT implication are course curriculum development and learner development.

2.1 Course curriculum development

Well-structured DT process is recommended for educational course. Van de Grift and Kroeze (2016) mentioned that DT course design should be planned clearly. The course should meet student needs which evidence showed that an elective course tended to be effective compared to compulsory. McLaughlin (2019) stated that DT framework should be applied to educational course regarding student centered as well as some courses that require human centered approach DT framework could be used to improve student critical thinking. It could be considered that the careful curriculum should be flexible and able to influence health care students to reach the Thai Desired Outcomes of Education (DOE) which focusing on learner person, innovative co-creator and active citizen (Kettunen, J., Kairisto Mertanen, L., & Penttilä, T., 2013; Office of the Education Council, 2018). Rowe et al. (2020) stated that course credits should be reconsidered with regarding to increase more interdisciplinary collaborations which was the "model of collaborative clinical care.

2.2 Learner development

DT framework is dynamic which is similar to research and development. The DT process could improve learners to be critical, creative and aware of human centered approach. To apply DT framework, background of the students should be considered. For example, Rauth et al. (2010) suggested that students should be free to express their ideas regardless frameworks in order to influence learners to be creative and confident. Game based learning could be an example of clinical teaching based on DT concept which improves cognitive and personal attributes (Badwan et al., 2018).

Conclusion

In conclusion, DT concept was applied among health professional and education. DT could be an effective framework for critical thinking, creative thinking and human centered approach. Furthermore, creative confidence could be developed after applying DT.

Suggestions for the further study

Empirical research of design thinking in the Thai health education context should be conducted.

Acknowledgement

I would like to express my very great appreciation to Dr. Supapen Panawatthanapisuit, the director of Bormmarajonani College of Nursing Sawanpracharak Nakhonsawan, for her support. Furthermore, I would like to express my gratitude to all of my students and colleagues for their positive reinforcement.

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Original article

Received: Novem.17,2019;
Accepted: August 20,2020;
Published: August 25,2020

The Relationships between Palliative Care and Quality of Life among Patients with Breast Cancer at Adam Malik Central Hospital Medan, Indonesia

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Abstract

Breast cancer is one of the most common cancr in women wotdlwide. The occurrence of breast cancer is very diverse, resulting from the internal and external factors of individuals. Patients diagnosed with breast cancer will experience social, medical, psychological, spiritual, and physical problems, which can affect quality of life. The purpose of this study was to determine the relationship between palliative care and quality of life among patients with breast cancer at Adam Malik Central General Hospital. This study was a cross sectional study. Eighty three (83) patients with breast cancer were selected by purposive sampling technique. The EORTC QLQ-C30 Indonesian Version 28 item questionnaire and 43-item questionnaire of Palliative care were used for data collection to measures the variables. The data were analyzed by frequency, percentage, mean, standard deviation and chi-square test. The results of this study found that patients with breast cancer accepted palliative care in the high level (67.5%), and quality of life of patients with breast cancer was high (89.2%). There was a significant association between palliative care and the quality of life of patients with breast cancer (P= 0.001,< 0.05).Health care providers should promote palliative care to patients diagnosed with brast cancer to increase their perception and quality of life.

Keywords: Breast Cancer, Quality of Life, Palliative Care

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Introduction

Breast cancer is the most common cancer in women worldwide and the cases continue to increase (International Agency for Research on Cancer, 2019). Every year more than 250 new cases of breast cancer out of 4,230,000 new cases in all types of cancer diagnosed in Europe and less than 175 new cases of breast cancer from 3,792,000 cases of all types of cancer diagnosed in the United States (International Agency for Research on Cancer, 2019).

This breast cancer is one type of cancer which is also the biggest death etiology of women in the world, including Indonesia(Ministry of Health Republic of Indonesia, 2019).Globocan data shows that in 2018, there were 18.1 million new cases with mortality rate of 9.6 million deaths, of which 1 in 8 men and 1 in 11 women in the world experience cancer(International Agency for Research on Cancer, 2019). While in Indonesia, there are 58.526 breast cancer new cases in 2018 (World Health Organization, 2019)

Breast cancer is in the first rank and most found in Indonesia (Ministry of Health Republic of Indonesia, 2019). According to data presented by the Ministry of Health on January 31, 2019, the breast cancer rate was 42.1 per 100,000 populations with an average death rate of 17 per 100,000 populations (Abadi, 2019), followed by cervical cancer of 23.4 per 100,000 population with an average death of 13.9 per 100,000 population (Ministry of Health Republic of Indonesia, 2019). The highest cancer prevalence was in Yogyakarta province which is 4.86 per 1000 population, followed by West Sumatra 2.47 79 per 1000 population, and Gorontalo 2.44 per 1000 population.

Breast cancer patients, who were reported by several hospitals in Indonesia, generally come for treatment at an advanced stage. For five years (2014-2018) 768 breast cancers were found in the stages of IIIa and IIIb 60.71%, and those who were 30-45 years old were 67.98% (Masriadi, 2016), and even in the stage IIIc(7%). Thus, the handling is very complex and requires support from various parties involved. It is estimated that the number of breast cancer patients from these data increase every year. Most of the patients also have poor prognosis which cause them unable to survive (Adam Malik Central Hospital Medical Record).

Cancer has a great impact on sufferers both physically, psychologically and socially which will affect their quality of life. Previous study found that physical (Angraini et al., 2018), psychological changes such as levels depression and anxiety (Nuridah, Saleh and Kaelan, 2019), social functions, sexual, stage of cancer (Toulasik, Kusumaningrum and Pradanie, 2019) and daily activities (Putu et al. 2015) were affected the quality of life or quality of life breast cancer.

The handling of breast cancer aims to get cure rate and improve quality of life by using palliative care. (Azis et al., 2008) namely palliative care therapy (Schroeder & Lorenz, 2018; Ministry of Health Republic of Indonesia, 2018).

At Adam Malik Central Hospital, palliative care for breast cancer patients has been carried out. They are spiritual activities, social and psychological, palliative nurses, anesthesia, nutrition, and providing emotional support/ counseling during disease development and mourning process. Since the incidence and death of brast cancer have increased over time in study area, the researchers would like to determine whether there is a relationship of palliative care with the quality of life of breast cancer among patients in Adam Malik Central Hospital or not.

Research Methodology

This cross-sectional study aimed to determine the relationship palliative care with the quality of life amomg breast cancer patients. This research was conducted at the Adam Malik Central Hospital Medan between March to June 2019. Pallitive care was measured using the Palliative Care Questionnaire (PCQ) (Pradana,2012) scale. The scale consist of 43 items. With each response being rated on a scale of 1- 4 (never to always). Higher scores indicate the the higher palliative care the patients received.

Quality of life was measured using European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-C30 (EORTC QLQ-C30 Indonesian version). EORTC QLQ-C30 consist 30 item questions. The higher score indicated worse the quality of life. Part 2, there are 2 questions that use somatic deferential with the highest score is 8 and the lowest is 1. the higher the score, the worse the quality of life, the lower the score, the better the quality of life. EORTC QLQC30 version of quality of life questionnaire has been translated and validated in Indonesian version by Perwitasari et al (2011) and used in chemotherapy patients at Dr. Sardjito Cental Hospital in Yogyakarta.

Study Population and Sample

The population of this study was all breast cancer patients in Adam Malik Central Hospital. In accordance with secondary data from the medical records at the Adam Malik Central Hospital, 499 patients have been hospitalized from March 2019 to June 2019. A total of 83 breast patients have been selected using purposive sampling techniques and inclusion included 1) Being cancer patients with compos mentis awareness (fully aware), 2) being stage III who are undergoing palliative care, 3)being hospitalized as in Rindu B room Adam Malik Central Hospital, 4) and being cancer patients who are willing to be respondents. the exclusion criteria were being cancer patients who have mental disorders.

Study Design and Data Collection

This study was cross-sectional with aimed to determine the relationship palliative care with the quality of life amomg breast cancer patients. This research was conducted at the Adam Malik Central Hospital Medan between March to June 2019. Participants spent approximately 45-50 minutes filling out questionnaires measuring palliative care and quality of life, if questionnaire filling out incorrectly the participant was asked to make appropreiate correction. All participants provided written consent.

Data Analysis

To analyzed relationship palliative care with the quality of life was breast cancer patients, the chi square test was used.

Ethical Approval

This study was approved by the Health Research Ethics Commission of the Faculty of Nursing, North Sumatra University (Ref.No.1168 / III / SP / 2019). All participants involved in this study had received permission from each respondent.

Results

A total of 83 respondents were recruited and selected based on inclusion criteria in the oncology inpatient room at Adam Malik Central Hospital Medan. The majority of respondents were above 40 years old (60.2%), and 53.0% were private employees. Level of palliative care is mostly high (67.5%)obtained by breast cancer patients in Adam Malik Central Hospital Medan mostly high (67.5%) and the level of quality of life of breast cancer patients was also high 89.2% (Table 1)

Table 1. Number and percentages of patients distributed by age, occupation, level of palliative care and level of quality of life breast cancer patients in Adam Malik Central Hospital Medan(n = 83)

Caracteristic	N	%
Age(yrs)		
30-35	6	7.2
36 – 40	27	32.5
> 40	50	60.3
Occupation		
Unemployed	24	28.9
Private employees	44	53.0
Laborers	6	7.2
Farmers	9	10.8
Level of Palliative Care		
Low	1	1.2
Medium	26	31.3
High	58	67.5
Level of Quality of Life		
High	74	89.2
Low	9	10.8

Palliative care obtained by breast cancer patients in Adam Malik Central Hospital Medan is mostly high (67.5%) and the quality of life of breast cancer patients is also high 89.2% (table 1).

Table 2: The relationship between Palliative Care and Quality of Life among breast cancer patients at Adam Malik Central General Hospital Medan (n = 83)

Level of Palliative care	Cancer Patients Life Quality level				Total		*P value*
	Low		High				
	N	%	n	%	N	%	
Low	1	1.2	0	0. 0	1	1.2	0.001
Medium	6	7.3	20	24.1	26	31.1	
High	2	2.5	54	65.9	56	67.7	

Based on table 2, it can be seen that 67.5% of patients who received high palliative, 64.9% have high quality of life. This means that the higher the palliative care received the

higher quality of life for breast cancer patients. Statistical test results using the chi square test which obtained p value = 0.01 (P <0.05) showed that there was a significant relationship between Palliative Care and Quality of Life of breast cancer patients.

Discussion

In the present study, we found that patients who obtained high level of palliative care have had high level of quality of life. There is a significant relationship between palliative care and quality of life among breast cancer patients at Adam Malik Central Hospital. They feel loved, valued by those around them, and got sincere care from nurses. They also felt accepted the situation of his/her illness and felt ready to accept the effects of his/her illness.

This study is supported by Irawan's (2013) research that palliative care has an important role for the treatment of patients with terminal illness that can be done simply and which the main priority is quality of life. The results of this study are also in line with the results of Anita's (2016)study which concluded that there is a relationship of palliative care with the quality of life of cancer patients. Likewise with the results of Nazario's research (2014) concluded that there is a relationship of palliative care with the quality of life of patients diagnosed with cancer by overcoming problems that can occur such as physical, psychological, social and spiritual problems. According to Meier (2011) research conclusion, it concludes that palliative care and quality of life have a very strong relationship.

Palliative care or integrated care that is active and comprehensive, with integrated multidisciplinary approaches (Matzo & Sherman,2014), which aims to reduce patient suffering, improve quality of life and also provide support to their families (Rasjidi, 2010). Through palliative care, it can alleviate the problems that patients get in the form of physical, psychological, social and spiritual problems that help patients to avoid problems that can occur (Campell, 2013). The results of this study are also in line with the study of Suranta(2016) which find that those who get high level palliative care tend to have a good quality of life. It can be concluded by researchers that palliative care has an important role in improving the quality of life among breast cancer patients in the management of pain, psychology, spirituality and others.

Conclusion

From results of this study, it can be concluded that palliative care has a direct relationship with the quality of life of breast cancer patients in the Adam Malik Central Hospital. The higher the palliative care obtained by breast cancer patients, the better the quality of life obtained.

Research Implication

For nursing education, it is very important to include palliative care in the nursing curriculum. Palliative care can be taught to nursing students so that whenever they treat breast cancer patients, the palliative care services can be given. Finally, breast cancer patients can survive; accept the situation, stronger and more ready to face the problem of the disease.

Suggestions for the further study

Based on the result of this study, It can be recommended for future researchers to determine the effect of palliatice care on quality of life of breast cancer patients into account in various places in Indonesia.

Acknowledgement

This research was carried out well and cannot be separated from the help of various parties, especially abundant thanks to the University of Sari Mutiara Indonesia for providing moral and material support. Besides that, thank you to the Adam Malik Central Hospital for helping the research process.

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Author Guideline and Instruction

International Journal of Public Health and Health Sciences (IJPHS)

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Originals

Yuychim, P., Niratharadorn, M., Siriumpunkul, P., Buaboon, N. (2018). Effects of a Family Participation Program in Managing Drug Managing Drug Use Behaviors among Older Adults with Chronic Disease in Phun Phin Community. *Journal of Public Health*, *48*(1): 44-53.

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Thesis/dissertation

Hom, K. E. (2018). *Association of Air Pollution with Longitudinal Changes in Arterial Stiffness and Correlated of Longitudinal Changes in Arterial Stiffness in the Multi-Ethnic Study of Atherosclerosis (MESA)*. A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctoral of Philosophy, University of Washington.

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International Journal
of Public Health and Health Sciences
Vol.2 No.2 (May-August, 2020)