Assessment of Healthcare Professional’s Knowledge, Skills, Motivation, and Commitment to Clinical Pathways Implementation

Ivana Alona1,*, Juliandi Harahap2*, Andike Arbi1*, Riyadh Ikhsan1,2*, Muhammad. Iqbal Rizki Siregar1*

1Department of Medical Services, Universitas Sumatera Utara Hospital, Universitas Sumatera Utara, Medan, Indonesia; 2Department of Community Medicine, Faculty of Medicine, Universitas Sumatera Utara, Medan, Indonesia; 3Department of Dermatology and Venereology, Faculty of Medicine, Universitas Sumatera Utara, Medan, Indonesia

Abstract

BACKGROUND: Healthcare providers are facing challenges to deliver qualified and efficient health services in response to the current health system. Clinical pathways (CPs) are a tool to achieve the best clinical outcomes at the lowest cost. The implementation should be supported by healthcare professional's capacity involved in the process.

AIM: The aim of the study was to assess healthcare professionals' knowledge, skills, motivation, and commitment to clinical pathways (CPs) implementation in Universitas Sumatera Utara (USU) Hospital.

METHODS: This cross-sectional study was conducted at USU Hospital with 65 healthcare professionals as participants who consist of 10 specialist doctors, 50 nurses, and 5 pharmacists. These participants were selected using quota sampling and interviewed using a developed and structured questionnaire. This questionnaire was tested for its validity and reliability with r > 0.5 and Cronbach’s Alpha > 0.6. Pearson correlation test with p < 0.05 was used for analyzing the relationship among variables on CPs implementation.

RESULTS: The healthcare professionals in USU Hospital had high knowledge, motivation, and commitment, but moderate skills in CPs implementation. There were positive correlations between knowledge and skill (p = 0.039), motivation and commitment (p = 0.001), and motivation and skill (p = 0.001) on CPs implementation.

CONCLUSION: USU Hospital healthcare professional’s knowledge, motivation, and commitment to CPs implementation were adequate, but their skills were moderate. The motivation is substantially related to the healthcare professional’s commitment to CPs implementation. This study recommended the hospital explore and grow skills in communication, coordination, and affective commitment among individuals, teamwork, and leaders for the sake of willingness to achieve the values or goals of the CP implementation in their organization.

Introduction

Nowadays, healthcare providers face substantial challenges such as the introduction of a diagnosis-related group system (DRGs), patients’ right to freedom of choice, high standard of care demands, patient satisfaction, and health workforce dynamics [1]. They often juggled providing quality healthcare and efficiently deliver cost-effective care. An assistive approach is required to deliver an acceptable minimum standard service as a clinician-directed diagnostic and therapeutic plan. This approach should reduce clinical variations, improve care quality, and keep care delivery at a minimum length of stay [2].

Clinical pathways (CPs) can be used as tool to guide evidence-based healthcare [3]. It reserves an integrated service plan to deliver clinical processes, interventions, and treatments with measurable outcomes in a timely fashion [4]. The implementation is carried out as a collaborative guideline for a plan, coordination, delivery, monitoring, documentation of care [2], enhances critical thinking, provides optimal clinical outcomes, and saves costs [5, 6].

CPs can increase patient and family satisfaction because of the predicted treatment and process. It can improve interprofessional communication and cooperation between medical teams, which in turn increase job satisfaction. A study stated that the implementation of CPs increased doctor’s satisfaction scores because of the uniformity of care management. On the contrary, the satisfaction scores of nurses were in contrast. A CP is more than just a document targeting efficiency and it is also a complex and multicomponent intervention [7].
Before the current study, an intervention such as dengue hemorrhagic fever Grade 1 and 2 CP socialization was carried out in USU Hospital. As a result, it was found that the socialization improved the adherence of treatments, decreased treatment, laboratory costs, and length of treatment days, but adherence to the mandatory tests was not different [8]. It was suggested that socialization intervention only was not sufficient to achieve organizational goals. CPs will not be successfully implemented if it is not accompanied by the readiness of the hospital as an organization, implementers, and medical personnel who are specifically involved and play roles in the CPs implementation [9].

Health system inputs are essential to delivering optimal health services [10]. Equipping the system with optimal resources, including human resources, is a vital source for systemization. Furthermore, the introduction of innovative processes or procedures into service delivery will, in turn, improve the performance and outcomes of quality, access, and efficiency. Thus, gaps of knowledge, skills, and processes between the resource’s availability and necessity are essential to respond to health demand [11].

This study aims to assess healthcare professionals’ knowledge, skills, motivation, and commitment to CPs implementation in USU Hospital.

Materials and Methods

Study design and setting

This research is a descriptive, cross-sectional study, which was conducted from July-September 2020. This study was carried out in USU Hospital. USU Hospital is a teaching Hospital in Medan province, Indonesia. It was accredited by the Indonesian National Hospital Accreditation (Komisi Akreditasi Rumah Sakit/KARS) in 2016 and 2019. The hospital provides the National Health Insurance System, which engages reimbursement claims based on the packages system called Indonesia Case-Based Groups (INACBGs).

Study population and sampling

The population of this study was healthcare professionals in USU Hospital, including clinicians, nurses, and pharmacists. We used quota sampling by 20% of each healthcare professional group in the hospital. The participants involved ten clinicians, fifty nurses, and five pharmacists.

Study tool

We created and developed a structured questionnaire, then tested it on 30 participants for validity and reliability. We used Pearson correlation with $p < 0.05$ or $r > 0.5$ for valid questions and Cronbach’s Alpha $> 0.6$ for reliability of the questionnaire. As the result, we had 29 valid and reliable questions which consist of 10 questions for knowledge, 8 questions for skill, 5 questions for motivation, and 6 questions for commitment. This questionnaire was delivered online via Google form to participants and collected then input in SPSS version 22.

Statistical method

Descriptive data regarding participant characteristics, category levels of knowledge, skills, motivation, and commitment were obtained and presented in a frequency distribution table. We also analyzed correlations among scores of the variables using the Pearson correlation with $p < 0.05$.

Ethics

This study was approved by the Research Ethics Commission of the Universitas Sumatera Utara (approval number 371/KEP/USU/2020). Written informed consent was obtained from each participant before data collection.

Results

We surveyed 10 doctors, 50 nurses, and 5 pharmacists regarding CPs implementation in USU Hospital. The survey included information about the participant's characteristics consisting of age, education level, length of working as their current profession, length of working at USU Hospital, and working areas. We also obtained knowledge, skills, motivation, and commitment score on CP implementation from the survey. Besides, we correlated among the variables to see the relationship with each variable.

Healthcare professional characteristics involved in CP implementation

Based on Table 1, most of the participants in this study were in the age range of 31–40 years (56.9%). Most of the participants' education level was of bachelor’s degree (52.3%). The majority of participants’ length of working as their current profession was in the range of 6–10 years (55.4%). Dominantly, their length of working at USU Hospital was in between 2 and 4 years (36.9%). Most of the participants came from ward class 3 (26.2%).
Table 1: Characteristics of healthcare professionals involved in the implementation of the CP in USU Hospital

| Characteristics       | Frequency (person) | Percentage |
|-----------------------|--------------------|------------|
| Age (years)           |                    |            |
| 21–30                 | 25                 | 38.5%      |
| 31–40                 | 37                 | 56.9%      |
| 41–50                 | 2                  | 3.1%       |
| >50                   | 1                  | 1.5%       |
| Education level       |                    |            |
| Diploma               | 19                 | 29.2%      |
| Bachelor degree       | 34                 | 52.3%      |
| Specialists           | 10                 | 15.4%      |
| Magister              | 2                  | 3.1%       |
| Profession            |                    |            |
| Doctor                | 10                 | 15.4%      |
| Nurse                 | 50                 | 76.9%      |
| Pharmacist            | 5                  | 7.7%       |
| Length of working (years) |                |            |
| 1–5                   | 16                 | 24.6%      |
| 6–10                  | 36                 | 55.4%      |
| 11–15                 | 7                  | 10.8%      |
| 16–20                 | 6                  | 9.2%       |
| Length of working in USU Hospital (years) |            |            |
| <2                    | 11                 | 16.9%      |
| 2–4                   | 24                 | 36.9%      |
| 5–7                   | 11                 | 16.9%      |
| 8–10                  | 19                 | 29.2%      |
| Working areas         |                    |            |
| VIP ward              | 3                  | 4.6%       |
| Class 1 ward          | 11                 | 16.9%      |
| Class 2 ward          | 7                  | 10.8%      |
| Class 3 ward          | 17                 | 26.2%      |
| Pediatric ward        | 12                 | 18.5%      |
| Pharmacy unit         | 5                  | 7.7%       |
| Medical staff group   | 10                 | 15.4%      |

Healthcare professional’s knowledge, skills, motivation, and commitment to CPs implementation

In this study, the participant’s knowledge was measured by asking health workers’ understanding of the meaning, elements, undertaken activities, other involved health workers, and the use of the CPs. There were ten questions in this aspect with the right or wrong answer. Based on Table 2, the participants’ knowledge about CPs was generally high, with a percentage of 76.9%, and none of them were categorized as low. By profession, 80% of doctors, 78% of nurses, and 60% of pharmacy officers had a high level of knowledge about CP implementation.

Table 2: The level of knowledge, skills, motivation, and commitment to CPs implementation among healthcare professionals in USU Hospital

| Measured variables on CP implementation | Frequency (person) | % Doctors | % Nurses | % Pharmacists |
|----------------------------------------|--------------------|----------|---------|---------------|
| Knowledge                              |                    |          |         |               |
| Low                                    | 0                  | 0 (0)    | 0 (0)   | 0 (0)         |
| Moderate                               | 15                 | 23.1 (20)| 11 (22) | 2 (40)        |
| High                                   | 50                 | 76.9 (80)| 39 (78) | 3 (60)        |
| Skills                                 |                    |          |         |               |
| Low                                    | 7                  | 10.8 (20)| 3 (6)   | 2 (40)        |
| Moderate                               | 33                 | 50.8 (80)| 22 (44) | 3 (60)        |
| High                                   | 25                 | 38.5 (0) | 25 (50) | 0 (0)         |
| Motivation                             |                    |          |         |               |
| Low                                    | 1                  | 1.5 (10) | 0 (0)   | 0 (0)         |
| Moderate                               | 17                 | 26.2 (40)| 12 (24) | 1 (20)        |
| High                                   | 47                 | 72.3 (50)| 38 (76) | 4 (80)        |
| Commitment                             |                    |          |         |               |
| Low                                    | 0                  | 0 (0)    | 0 (0)   | 0 (0)         |
| Moderate                               | 5                  | 7.7 (0)  | 5 (10)  | 0 (0)         |
| High                                   | 60                 | 92.3 (100)| 45 (90) | 5 (100)       |

The relationship among measured variables on CP implementation

In this study, we analyzed the relationship between the measured variables of knowledge, skills, motivation, and commitment (Table 3). Pearson correlation coefficient was calculated between two variables’ scores. We found positive correlations with different levels of strength (p < 0.05) among the measured variables. There was very low correlation between knowledge and skills ($r = 0.257$); low correlation between motivation and skills ($r = 0.390$) and commitment and skills ($r = 0.394$); and sufficient correlation between motivation and commitment ($r = 0.640$) on CP implementation.

Table 3: Correlation tests among variables of knowledge, skills, motivation, and commitment to CP implementation

| Relationship among variables | Coefficient (r) | P-value |
|------------------------------|-----------------|---------|
| Knowledge and skills         | 0.257*          | 0.039   |
| Knowledge and motivation     | -0.004          | 0.973   |
| Knowledge and commitment     | 0.153           | 0.223   |
| Motivation and skills        | 0.390**         | 0.001   |
| Commitment and skills        | 0.394**         | 0.001   |
| Motivation and commitment    | 0.640**         | 0.001   |

Discussion

Healthcare professional’s knowledge of CP implementation varies in many studies. From this study, it is known that doctors, nurses, and pharmacists at
USU Hospital have good knowledge about CP in the hospital. Similarly, CP research conducted by Balbeid et al. found that most dentists in their study had good knowledge regarding CP implementation, while the nurses’ knowledge in their study was enough [12]. In comparison, a study regarding typhoid CP in a hospital in Indonesia stated that the healthcare personnel's level of knowledge in their hospital was moderate [9]. Knowledge contributes to the employee’s performance of the organization, which starts through the individual aspect [13], [14].

Evidence-practice gaps remain a challenge for health services [15], [16], [17], [18], [19], [20], [21]. At USU Hospital, the CP implementation skills of communication and coordination are moderate. Several studies have shown that poor communication, coordination, collaboration, and ineffective teamwork will cause negative impacts on staff relationships, staff satisfaction and turnover, and patient outcomes [22]. According to Jabbour, an integrated pathway requires complex interventions due to interprofessional and hospital practices or habits [23]. Many healthcare professionals are used to poor communication and teamwork skills due to a culture of low expectations that have grown in health care settings [24].

Changes in the habitual practice of health workers need to be changed by finding effective strategies so that coordination and communication between health workers or hospital management and the accuracy process in the CPs can take place adequately. Then, the strategies must be transformed into a culture in the hospital. Continuous change, enabling distributive and inclusive leadership to support the change process and inspire people to work according to the shared goals and create narratives and a sense of purpose are attributable to change and transform values, culture, and behavior [25]. Leaders in both medicine and nursing have issued ongoing initiatives to develop a cooperative rather than a competitive agenda to benefit patient care. A strong encouragement for successful teamwork among healthcare professionals to implement CPs successfully can be developed by drawing team attention to measurable improvements for the patients they serve together.

In this study, generally, healthcare professionals at USU Hospital were well-motivated in implementing CPs. However, 10% of the doctors had low motivation, and 40% had a moderate one. Doctors are the leader of patient care in a hospital. Therefore, their attitudes and motivation toward CPs are essential in the implementation [26]. According to a study, a professional individual who is motivated and has good intentions is not enough if the working team is not sufficient or interested in implementing CP [27]. Thus, increasing the multidiscipline healthcare professional motivation at a similar stage will contribute to the optimum CP implementation process. According to a study (Dirgagunarsa, 1996), motivated behavior can be created as behind-the-scenes behavior by existing needs and is directed toward achieving goals, therefore, needs must be met, and desires can be satisfied [28].

A study stated that motivation is acquired through rewards, either intrinsic or external to the activity, and its achievement is enabled by activity performance [29]. Intrinsic rewards are associated with job issues such as accomplishment, authority, diversity, responsibility, and personal and professional growth. The intrinsic motivation tools can be status, acknowledgment, acclamation from superiors and partners, personal satisfaction, and self-confidence [30]. External motivators include an exchange of compensation that is taken for the activity performed for the attainment of people’s value [29]. The tools of the external motivation comprise pay, fringe benefits, job security, promotions, private office space, and social climate. In addition, they include competitive salaries, raised pay, bonuses, and indirect form of payments [30]. The literature suggests that healthcare professionals who are motivated by intrinsic and extrinsic motivators and highly committed will do their best to accomplish their job [31]. This study suggested those intrinsic and extrinsic rewards can be adopted to meet the doctors’ need and desire to increase their motivation for CPs implementation.

Healthcare professionals’ commitment to the implementation of the CPs in USU Hospital was high. However, this study recommends that the hospital organization maintain their willingness to ensure the continuance of CPs implementation by improving their organizational commitment. Organizational commitment is the desire of the organization members to maintain their membership and willingness to survive in achieving results based on organizational goals [32].

From this study, motivation and commitment score have a substantial positive relationship in the CPs implementation. According to a study, the higher the employee’s organizational commitment, the better work motivation, and the better performance that are beneficial to the organization [33]. The employees’ productivity is highly associated with their motivation levels and a higher level of organizational commitment [31]. In organizational psychology, commitment and motivation generally alter independently to a certain extent [34]. Commitment is a motivational phenomenon that is related to motivation based variables [35]. Researchers also suppose that committed employees provide contributions to the organization in terms of motivation [35], [36], [37], [38]. Furthermore, committed organizations that give attention to increased employee job satisfaction, motivation, and morale may bring long-term impacts to the company’s success, such as loyalty, productivity, and employee retention [39]. Retention, attendance, motivation, and job productivity are positive impacts of organizational commitment [34], [36], [37], [39], [40], [41].

Organizational commitment is essential to achieve higher quality health care services and is linked
to job satisfaction among providers [42]. There are three types of organizational commitment (i) affective, (ii) continuance, and (iii) normative commitment. Affective commitment relates to an employee’s emotional attachment to the organization and its goals. Employees with more affective commitment are found to be motivated to higher levels of performance and make more meaningful contributions than employees who express continuance or normative commitment. Thus, affective commitment should be developed for the meaningful teamwork motivation to deliver appropriate process in CPs implementation.

Affective commitment involves a strong belief and acceptance of values and goals, a willingness to add more efforts, and a desire to stay as part of the organization. There are several literatures that predict the affective commitment of an organization [43], [44], [45]. A study proposes that employees’ motivation to remain on the job is a significant predictor of affective commitment [46]. Individual willingness to make extra efforts for the organization is also another predictor of affective commitment. On the other hand, a monotonous or uninteresting job decreases motivation and prevents the acceptance of organizational values and goals [47]. In addition, an accumulation of overwork load or task intensification will dampen personal performance and bring a negative impact on affective commitment [48]. Furthermore, social supports such as a pleasant coworkers and a pleasant supervisor is considered to bring positive affective commitment [46]. However, this study did not take into account the context of the relationship of affective commitment aspects among the individual, group of healthcare professionals, or organizational levels in CPs implementation. Further study will provide beneficial outputs for a sustainable CPs implementation to healthcare providers.

CPs goals cannot be achieved if it is not well implemented [49]. According to some studies, attitudes and lack of motivation are two reasons that healthcare professionals do not apply CPs [50], [51], [52]. USU hospital should demonstrate the benefit of CP implementation to ensure the healthcare professionals in their setting develop positive attitudes toward CP implementation. Furthermore, teamwork motivation for social support is essential to build affective commitment, in addition to a pleasant supervisor. If the team members of the organization have positive contact with their supervisor, the team will be willing to make extra efforts for their job done [46]. A study recommends dissemination, education and training, social interaction, and decision-support systems as successful strategies to increase teamwork motivation [53].

However, the organization should note that CPs implementation required a number of resources once it is recommended as an active process [3]. An active process requires maximum healthcare inputs and supports from managers and healthcare professionals to remove associated resistance from the CPs implementation. This process should include team implementation and “local champions,” identify barriers to change or local evidence-practice gaps, team readiness to change in CP development, adaptation of evidence to the local circumstances, staff education sessions, incorporation of reminder system, and audit and feedback on the CP compliance [54], [55], [56], [57], [58]. Prioritization of CP development in certain areas is necessary to consider, given the constraints of the resource capacity of the organization [59].

Conclusion

We concluded that healthcare professional’s knowledge, motivation, and commitment on CPs implementation in this hospital were adequate. However, skills of coordination and communication on CPs implementation between healthcare professionals were moderate. The study found significant relationship between the measured variables of knowledge, skills, motivation, and commitment at different levels of strength (p < 0.05) where there were very low correlation between knowledge and skills, low correlation between motivation and skills, low correlation between commitment and skills, and strong correlation between motivation and commitment on CPs implementation. Therefore the skill aspects should be improved, because this may result as evidence-practice gaps in health services and failure in CPs implementation.

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