

Nurse's Experience of Using Digital Support to Manage Work Related Stress at Pravara Rural Hospital: A Phenomenology Study

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Abstract

Background: The World Health Organization (WHO) in 2020 has estimated the nursing shortage in India.¹ The objective of the study was to assess the nurse's perceptions towards digital support to manage work related stress. A qualitative descriptive study is undertaken as a pilot project to explore nurses experience of using digital support to manage work related stress at Dr Vitthalrao Vikhe Patil, Pravara Rural Hospital, Loni (Bk), large tertiary care facility in Western India. It is part of a larger project "Nurses life world", a research cooperation with Lund University, Dalarna University and Skovde University Sweden.

Methods: Thirty nurses were selected via purposive sampling. ATLAS.ti software tool for organization and analysis of qualitative data was used to analyze the verbatim transcript. Data was collected through open-ended interview guide questions and face-to-face individual interviews. Ethical considerations were applied to all stages of the study. The collected data was analyzed according to the content analysis method suggested by Graneheim and Lundman.

Results: The study resulted in six themes, six main categories and thirty five sub-categories. The themes includes: positive experience to digital support, implication features of digital stress apps, emerging innovative technology opportunities, difficulties and challenges of digital apps, future perspectives and seeking facilitators.

Conclusion: The present study shows the digital support is useful for the nurses to cope with work related stress. The study provides insight to develop appropriate stress management digital apps for nurses in the working environment to cope with occupational stress.

Keywords: Nurses experience, digital support, stress, phenomenological study

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Introduction

Occupational stress is common among nurses. Professional stress is precursor to decrease job satisfaction, increased burn out, absenteeism and turnover of nursing staff. Stress and burn out among nurses correlates the quality of patient care.² Government of India (2020) had reported shortage of nurses in India, in addition to growing demands from patients and families for improved quality of care have put pressure on and caused distress among nurses. Research have showed occupational stress is positively associated to leaving the job.³ Studies reveals personal digital solution have potential to improve mental well being of nurses with support of nurse managers facilitation as nurses have key role to promote their own mental wellbeing by utilizing digital mental health solutions.⁴

The present study follows Medical Research Council Guidance framework and Criteria⁵ for reporting the development and evaluation of complex Intervention guidelines. The project is planned in four phases: Development (based on evidence by systematic literature study), Feasibility and piloting to (development support intervention tool), Evaluation (assess effectiveness of digital tools will be tested and interviewed with stakeholders) and Implementation (Dissemination, surveillance, monitoring and long term follow-up). The present pilot project explores nurse's perception on digital support to cope with stress in India

Materials and Methods

The present study aims to assess the nurse's perceptions towards digital support to manage work related stress. It is part of a larger project "Nurses life world", a research cooperation with Lund University, Dalarna University and Skovde University Sweden. This is a descriptive qualitative work of research with a content analysis design which was conducted from 2022 to 2023 at Dr Vitthalrao Vikhe Patil, Pravara Rural Hospital, Dist Ahmednagar, Loni (Bk), Maharashtra, India.

In total 30 nurses were enrolled by non-probability purposive sampling technique for the pilot study who were in practice in intensive care unit (medical, surgical, neonatal) medicine ward, surgery ward,

labour ward, oncologyward , casualty/emergency and paediatric ward. The inclusion criteria werethe nurses who belongs to age group above 21 years⁶, willing to participate and provide written informed consent and available during the study period. Nurses were selected based on characteristics such as age, gender, years of experience in the profession, and workplace. The nurses who were absent/ availed leave during data collection period were excluded from the study.

Data collection procedure

The present study was approved by Pravara Institute of Medical Sciences (DU), Ref No : PIMS/DR/CON/2022/483 dated: 29/04/2022. Formal Permission was obtained from the Medical Superintendent and Nursing superintendent of Dr Vitthalrao Vikhe Patil, Pravara Rural Hospital, Loni (Bk). The study materials (interview questions and informed consent forms) were approved by the Ethical Committee. Before interviews, participants were informed about the objectives and purpose of study. Assured for the confidentiality and anonymity of information. The participants were also informed that they were free to withdraw from the study at any point. The face-to- face interview began with general questions about demographic characteristics and then more specific open-ended questions related to the purpose of study based on interview guide questions. The original English structured questionnaire consisted of six components which was translated to Marathi language. Each interview lasted from 45 – 60 minutes. The audio recordings were used for verbatim transcription in English. ATLAS.ti⁷ software tool for organization and analysis of qualitative data was used to analyze the verbatim transcript. The present study used conventional content analysis method suggested by Graneheim and Lundman (2004). The contextual data was analyzed by systematic categorization, codification and theme emerged.⁷

Trustworthiness

In this study, different methods were used to increase the validity of the study. Based on their guidelines the interviews were transcribed first, reviewed the transcripts several times to find meaning units, initial codes were extracted and formed meaning unit and the researchers categorized the codes according to conceptual similarities and categories and subcategories emerged based on

analysis of unit. The data was coded and classified independently by the researcher and extracted codes were reviewed by the research team. Interviews were randomly selected and given to researchers familiar with qualitative methods but were not part of the study to announce their suggestions and feedback. Peer review and audit was carried out on data.⁸

Findings

Demographic characteristic of nurses at Dr Vitthalrao Vikhe Patil Pravara Rural Hospital results shows that 36.66 % of the nurses belong to age group of 31 to 40 years. In relation to gender 73.33% of the nurses were females. 46.66% of the nurses had 1 to 10 years of professional experience. In the present study 26.66% of the nurses were working in critical care unit, followed by medical ward, surgical ward, casualty, labour, oncology ward and paediatric ward. All demographic characteristics of the nurses are presented in Table No 1.

Table 1: Demographic characteristic of nurses at Dr Vitthalrao Vikhe Patil Pravara Rural Hospital
N =30

Demographic characteristics	Frequency	Percentage (%)
Age (Years)		
21- 30	6	20 %
31-40	11	36.66 %
41-50	10	33.33 %
Above 51	3	10 %
Gender		
Female	22	73.33 %
Male	8	26.66
Number of years in the profession		
1-10	14	46.66 %
11-20	6	20 %
Above 21 years	10	33.33 %
Workplace		
Medical ward	7	23.33 %
Surgery ward	4	13.33 %
Labour ward	3	10 %
Oncology ward	2	6.66 %
Casualty/Emergency	4	13.33 %
ICU (Medical, Surgical, Neonatal)	8	26.66 %
Paediatric ward	2	6.66 %

In the analysis of the 30 interviews, six themes, six main categories and thirty five sub-categories emerged in [Table No 2]. Results along with quotations are described in the following

Theme 1: Positive experience to digital support

According to the nurses, digital apps are beneficial at perceived situations in working area to cope with stress. This category consisted of the subcategories which includes providing patient care with updated latest medical technology, improves the quality of nursing care, facilitates diversion therapy, promotes communication, prevents medication errors, promotes laboratory interpretation and facilitates professional growth.

"ICU monitors operation was easy to operate by using digital app for patients care. Easy reference for antidote drug administration for poisoning in critical patient care Diversion therapy music therapy to administer medication for child which relieved my stress while performing nursing care. Digital App helps to identify the laboratory interpretation, diagnosis and promotes quality care to patients. I feel medication error is preventable by digital infusion pump reduces stress while working in critical care unit. During COVID-19 pandemic digital communications with health professionals promoted decision making for patient care which helped we nurses to cope up with stress"

Theme 2: Implication features to enhance digital stress apps

Nurses perceptions related to digital apps features to enhance for coping with stress, this category has sub-category it includes apps for reminder app on duty, yoga app, deep breathing exercise, meditation, Indian music apps, women's healthy lifestyle app, nursing app for advanced nursing practice, cognitive behavioural apps, laughter therapy apps, mHealth apps, self monitoring physiological parameters apps and apps for promote task performance.

"I feel Yoga App is best to relieve stress like stretching and walking, pranayama as Yoga can be practiced during working hours. Apps can include the self monitoring stress parameter like pulse, respiration and blood pressure for us. Alarm indicator denotes the next step for stress intervention. Laughter therapy apps can promote happy mood to enhance the performance during stress. Colour apps with meditations will be easy to visualise during working hours Different colours and movements of colour shade add diversion. Professional consultancy app during

work to include in app. Add Indian instrumental music Ring tones with Indian music help to reduce stress. As an ICU nurse, I feel alarm for reminder for easy work and app for drug dose calculation is useful.....I heard of mHealth App for managing stress"

Theme 3: Emerging innovative technology opportunities

Nurses expressed that digital apps promotes patient care, communications and innovative digital apps. This category consisted of the subcategories which include opportunities for easy feasibility patient care and safety, improving information documentation, management and monitoring, facilitating the communication management in technological environment, improving resource for E-learning, introduction of m Health app and facilitating pathways of organization growth.

"One of opportunities of digital support app for nurses helps to promote knowledge, easy access to all stress management app, and enhance knowledge for patient care. I feel apps reduce workload of documentation, easy access to stock, during COVID-19 pandemic the apps help the nurses and doctors to interact and helped nurses to take decision for patient care. Provision of Zoom platform meeting, Google meeting and E- learning sources and virtual mode conference is useful. I feel latest mHealth apps are success for digital support for nurses. I had opportunity to attend Zoom platform conference during COVID-19 pandemic, virtual meetings with staff nurses help us to update the information of pandemic and it was a learning experience for me"

Theme 4: Difficulties and challenges of digital app

Nurses view points in relation to challenges in success of digital app includes cost of digital Apps, lack of time, job related factors, language barrier, lack of training using digital technology, lack of network connectivity and psychological conditions issues

affect the utilization.

"I feel to utilise stress management app during working hours is difficult due to rules, critical area restrictions and personal psychological issues related to workload. Busy schedule in critical care units, very difficult to use app during patient care in restricted area to manage with stress...Electricity and Network range issues in critical units unable to access apps. I experience the difficult terms in different language in digital apps simplify difficult terms to understand, Digital apps is costly and my expertise in operation of digital apps is less"

Theme 5: Future perspectives

In the present study in relation for future contribution for development of digital app for stress almost all the nurses expressed willingness for consulting in development of digital apps for nurses to cope with work related stress.

"In India the digital app to manage stress among nurses must be prepared and I feel happy to be an part of it. Willing to contribute to develop digital support apps for our nurses. If I hear about developing new digital application for nurses, I would like to be involved, just to tell how it might be practical to work with."

Theme 6: Seeking facilitators

In the present study nurses expressed senior nurses, nursing superintendent, assistant nursing superintendent and ward in-charges had experience work related stress and were able to consult through whatsapp, facebook and instagram.

"Working hours I feel comfortable to contact Nursing superintendent for managing stress. Ward in charge adopts digital apps to cope with stress during working hours, she practices yoga breathing techniques which helps me to minimise stress. I am comfortable to communicate with my superiors, nursing superintendent through WhatsApp during working hours"

Table 2: The theme, main categories and sub-category extracted from the data

Themes	Main Categories	Sub Categories
Positive experience to digital support	Perceived situations	Updated latest medical technology
	Experience of digital apps	Improves the quality of nursing care
		Facilitates diversion therapy
		Promotes communication
		Prevents medication errors
		Promotes laboratory interpretation
		Prevents medication errors
		Facilitates professional growth

Continue.....

Implication features to enhance digital stress apps	Digital apps features for coping stress	Reminder app on duty
		Yoga app
		Deep breathing app (Pranayama)
		Meditation app
		Indian instrumental app
		Women's healthy lifestyle app
		Nursing app for advanced nursing practice
		Cognitive behavioural app
		Laughter apps
		mHealth apps
		Apps for self monitoring physiological parameters
		Promote work performance
Emerging Innovative technology opportunities	Promotes patient care	Easy feasibility patient care and safety
	Promotes communication	Improving information documentation, management and monitoring
		Facilitating the communication with superiors, colleagues, health professionals
		E-learning, Zoomplatform, Google meeting
	Innovative digital apps	Introduction of mHealth App
		Facilitating pathways of organization growth
Difficulties and challenges of digital app	Challenges of digital apps	Cost of the digital app
		Lack of time
		Job related factors
		Language barrier
		Lack of training using digital technology
		Lack of network connectivity
Future perspectives	Future involvement for digital apps	Psychological conditions issues affect the utilization.
		Willingness to contribute digitally based stress apps for nurses
Seeking facilitators	Resources for digital apps	Consulting senior nurses, administrators, ward in-charge, Nursing superintendent

Discussions

The study resulted in six themes, six main categories and thirtyfive sub-category. The themes includes: positive experience to digital support, implication features of digital stress apps, emerging innovative technology opportunities, difficulties and challenges of digit apps, future perspectives and seeking facilitators. According to the nurses, digital apps are beneficial at perceived situations in working area to cope with stress. This category consisted of the subcategories which includes providing patient care with updated latest medical technology, improves the quality of nursing care, facilitates diversion therapy,

promotes communication, prevents medication errors, promotes laboratory interpretation and facilitates professional growth. In parallel to the study was conducted by to review the effect of nurses use of smartphone to improve patient care identified major themes were communication, information access at the point of care time management and stress relief.⁹

Nurses perceptions related to digital apps features to enhance for coping with stress, this category has sub-category it includes apps for reminder app on duty, yoga app, deep breathing exercise, meditation, Indian music apps, women's healthy lifestyle app, nursing app for advanced nursing practice, cognitive

behavioural apps, laughter therapy apps, mHealth apps, self-monitoring physiological parameters apps and apps for promote task performance. A qualitative study to relieve stress revealed spiritual coping strategies to be used by clinical nurse practitioners.¹⁰ Study findings revealed nurse stated that the religious values based positive effect in challenging work situation. A study finding depicts nurses expressed prioritizing cognitive therapy to cope stress.^{11,12} Similar study results revealed nurses stated listening to music, praying meditation are coping strategy adopting during working hours.¹³

Nurses expressed that digital apps promotes patient care, communications and innovative digital apps. This category consisted of the subcategories which include opportunities for easy feasibility patient care and safety, improving information documentation, management and monitoring, facilitating the communication management in technological environment, improving resource for E-learning, introduction of mHealth app and facilitating pathways of organization growth. Similar study depicts nurses experience that digital technology had opportunities for improving medical and patient care, facilitate communication, improve resource management, policy making, professional growth and decision making.¹⁴

Nurses viewpoints in relation to challenges in success of digital app includes cost of digital Apps, lack of time, job related factors, language barrier, lack of training using digital technology, lack of network connectivity and psychological conditions issues affect the utilization. Studies revealed nurses perception in obstacle to digital support mentioned lack of training in utilisation of digital technology act.¹⁵

In the present study in relation for future contribution for development of digital app for stress almost all the nurses expressed willingness for consulting in development of digital apps for nurses to cope with work related stress. Nurses expressed their willingness to be facilitator for development of digital apps. Studies had revealed the nurses perceive their involvement for development of digital aids. The study was limited to nurses in one hospital which restricts generalization.

Conclusion

The current study explored nurse's perception of digital support with work related stress. The results shows digital support for work related stress is beneficial for nurses. In the future, the results of this study can be utilized for the development of digital support for nurses to promote sustainable learning.

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Ethical Approval and consent to participate

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