A Randomized Control Trial of Job Crafting Program Effectiveness on Job Crafting Behavior, Work Meaningfulness, Change Attitude, Task and Adaptive Performance among Nurses.

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Introduction:

The work environment for nurses holds significant importance in shaping their job satisfaction and overall effectiveness. A meaningful workplace for nurses is characterized by tasks that align with a sense of purpose and satisfaction, when nurses find purpose in their responsibilities, it enhances their commitment to the profession (1,2).

Meaningful tasks directly contribute to patient care, fostering a sense of accomplishment, necessitating flexibility and responsiveness to evolving nursing healthcare scenarios. An environment that supports adaptive performance acknowledges the dynamic nature of healthcare, promoting continuous learning and professional growth (3,4). Therefore, establishing a workplace that emphasizes the meaningfulness of tasks and encourages adaptive performance is crucial for nurses to deliver high-quality care, find job satisfaction, and sustain a rewarding career in healthcare (5).

Job crafting behavior among nurses involves a proactive and intentional approach to shaping various aspects of their work roles to better align with their skills, preferences, and goals (6). This behavior can be categorized into three main domains. Firstly, seeking resources refers to nurses actively seeking opportunities, support, or tools that can enhance their job performance and satisfaction. Secondly, seeking challenges involves nurses actively pursuing tasks or responsibilities that are stimulating and align with their professional growth objectives. Lastly, reducing demands entails efforts to mitigate or manage aspects of the job that may be perceived as stressful or overwhelming (7,8).

Engaging in tasks that bring positive meaning, involve meaning-making, and align with greater good motivations provide nurses with joy and fulfillment, fostering commitment to their profession. Meaning-making tasks contribute to a coherent and purposeful narrative in their work, connecting to a broader sense of identity. Greater good motivations involve tasks that contribute to the welfare of others, fostering altruism and positive impacts on patient care (9). The significance of these work meaning tasks in nursing is evident in their capacity to elevate job satisfaction, reduce

burnout, and create a positive and fulfilling workplace. Nurses experiencing meaning in their tasks are more likely to exhibit a sense of purpose, positively impacting their job performance, job retention, and the quality of patient care they deliver (10,11).

The importance of job crafting in the nursing context is underscored by its impact on the meaningfulness of tasks and adaptive performance. When nurses engage in job crafting, they are more likely to find their work personally meaningful, as they align their roles with their values and preferences. Moreover, job crafting enables nurses to enhance their adaptive performance by tailoring their roles to better navigate the dynamic and challenging healthcare environment. In doing so, nurses can optimize their effectiveness, job satisfaction, and overall well-being in their demanding profession (12,13).

Enhancing job crafting among nurses is imperative for improving their job satisfaction, well-being, and patient care outcomes. Despite existing research on job crafting, there is a notable lack of studies specifically addressing how to enhance this practice among nurses. Job crafting allows nurses to tailor their roles, providing a sense of autonomy, stress reduction, and increased engagement. By empowering nurses to adapt to evolving healthcare environments and fostering positive team dynamics, job crafting contributes to better patient care and the retention of skilled professionals(14-16). Research addressing this gap is essential to provide practical guidelines for healthcare organizations seeking to implement effective initiatives that enhance job crafting and, subsequently, the overall well-being and effectiveness of nursing professionals.

A recent study in 2023 investigated the impact of a Job Crafting Intervention Program on Harmonious Work Passion and Career Commitment among Nurses through a Randomized Controlled Trial. The findings revealed that, in comparison to the control group, the intervention group demonstrated elevated levels of job crafting behaviors and reported a significant improvement in harmonious work passion, although no such improvement was observed in career commitment. This suggests that training nurses in job crafting behaviors can effectively maximize job resources, optimize job demands, and enhance their harmonious work passion. In conclusion, the study underscores the potential for nurses to benefit from job crafting training, offering a valuable tool for dealing with limited job resources and increased job demands, ultimately fostering a more harmoniously passionate approach to their work. Consequently, the implications

for Nursing Management highlight the importance of providing regular training to nurses on becoming effective job crafters. This proactive approach can empower nurses to navigate challenges related to job resources and demands, promoting a harmonious and passionate engagement with their work (13).

The research intervention program focusing on job crafting empowers nurses to actively shape their work roles, instilling a sense of autonomy and control. Moreover, the intervention seeks to elevate the meaningfulness of nursing tasks, contributing to increased job satisfaction and overall well-being among nurses. The positive change attitude cultivated through the program addresses the dynamic nature of healthcare environments, enabling nurses to adapt more effectively to organizational changes. Additionally, the intervention aims to enhance both task and adaptive performance, potentially leading to improved patient care outcomes and heightened efficiency within hospital settings. The emphasis on employee retention and satisfaction is crucial, as empowered nurses are likely to remain in their positions, addressing the persistent challenge of retaining skilled healthcare professionals. The positive impact of the research extends to supporting hospital settings by contributing to the development of strategies that foster a positive work environment, promote teamwork, and enhance organizational effectiveness.

Aim of the study:

To investigate the effectiveness of job crafting intervention program on job crafting behavior, work meaningfulness, change attitude, adaptive and task performance among nurses at Zagazig university hospitals.

Research hypothesis:

1. After program intervention, nurses will demonstrate an increase in job crafting behavior (increasing job Resources, increasing challenging job demands, and decreasing hindering job demands).
2. Nurses participating in the intervention program will report higher levels of work meaningfulness.
3. The experimental group will demonstrate an increase in positive work attitude and decrease in negative work attitude

4. The experimental group will experience a higher adaptive performance and perform higher levels of task performance.
5. An increase in job crafting behavior is related to and predicts work meaningfulness, change attitude, adaptive and task performance among nurses

Subjects and Methods:

Research design:

The study described in ClinicalTrials.gov with the identifier NCT……..utilized a randomized control trials research design.

Administrative & Ethical Steps:

We obtained official written authorization from the Zagazig university hospitals in order to carry out our research, following the approval of ethical considerations. Formal consent and authorization for the study were also acquired from the Research Ethics Committee within the Faculty of Nursing at Zagazig University, Egypt (IRB: ……). Patients were duly informed about the study's objectives, and we obtained their informed written consent. They were informed of their right to decline participation, with the assurance that their decision would not impact their care. Moreover, patients were assured that they had the option to withdraw from the study at any point, even after initiation, with the assurance of maintaining their privacy and confidentiality.

Study setting :

This study was conducted at the Zagazig University Emergency Hospital, which provides a wide spectrum of health services at El Sharkia Governorate in Egypt. This hospital receives emergency cases and injuries 3 days/week from Zagazig City and other near areas, giving care for about 7.5 million people, according to the hospital most recent statistical data. The hospital is occupied with (185) beds.

Subjects:

Include staff nurses working in different departments of Zagazig University Emergency Hospital.

Sample size :

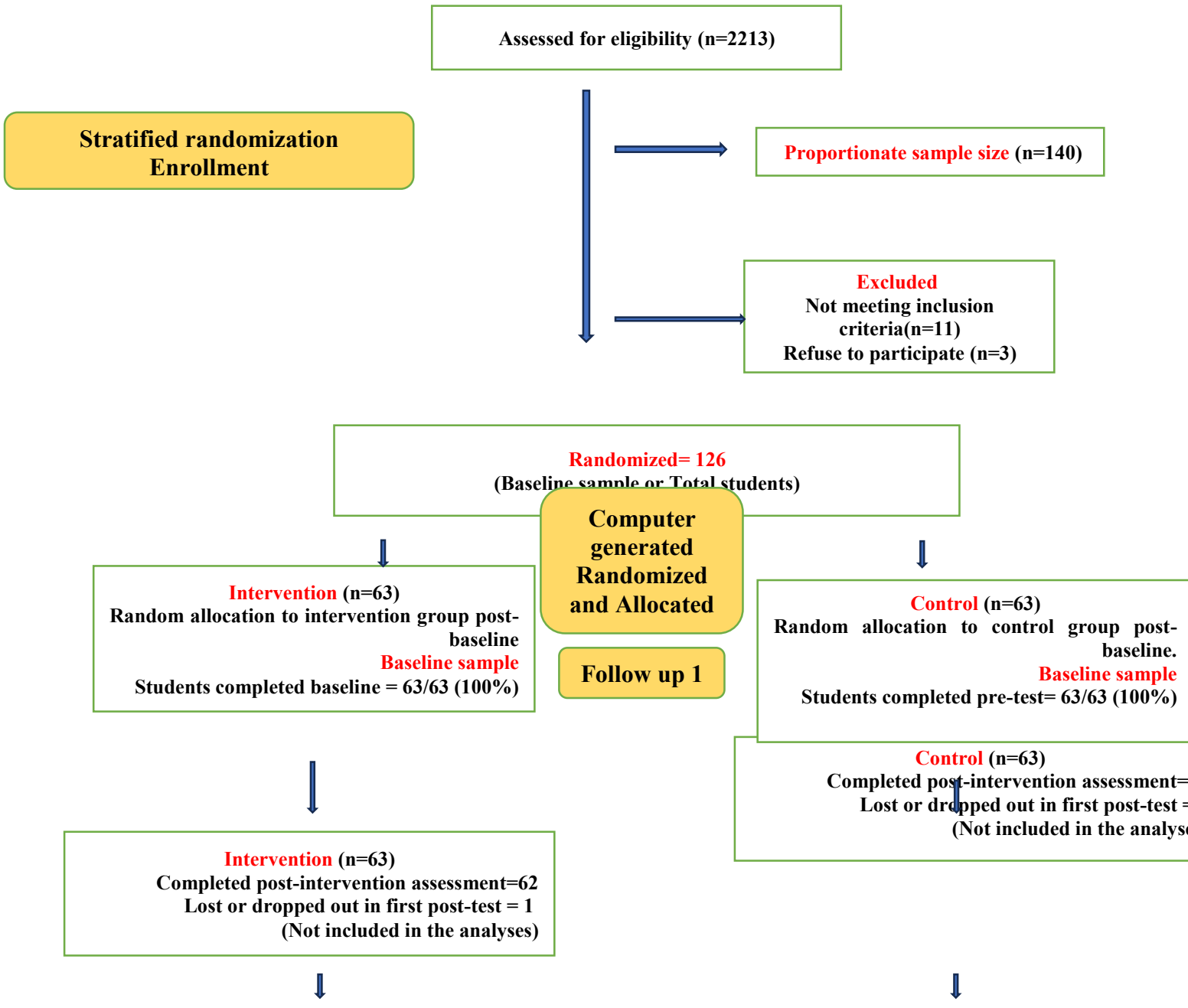
We employed the G* Power version 3.1.9.7 software program to calculate the sample size based on the specified parameters.: a total sample size of approximately …, an effect size of 0.5, α error probability of 0.05, Power (1-β error probability) of 0.95, two groups, three measurements, and a correlation among repeated measures of 0.5. The program recommended a minimum sample size of 140 nurses. However, the researchers decided to recruit 150 nurses for both the control group and the study group.
To be eligible for the study, nurses had to be…….

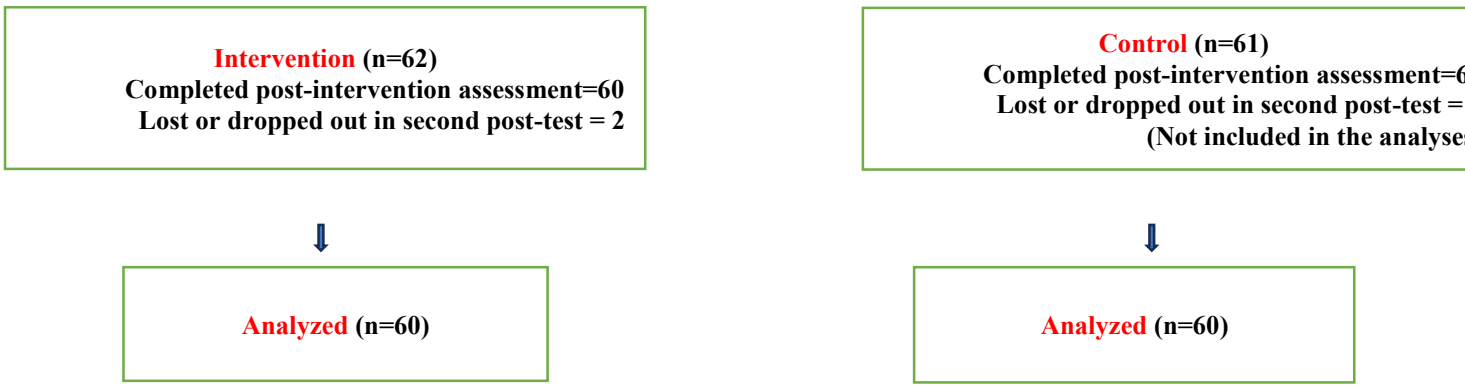
As shown in figure (1), each randomly selected nurses were screened to identify the student who met the predetermined inclusion criteria. Three students refused to participate and …. were excluded due to lack of inclusion criteria. A comprehensive list of the rest …., containing the names and relevant data of all students was compiled. The participants were assigned to either the control or study group using a computer-generated randomization list (…..each). This random assignment ensured fairness and minimized bias. ….nurses were withdrawn from either the control or intervention group

Table 1: Stratified random sample using proportion allocation technique.

Academic Level	Strata according to the department	The Expected population size of each stratum	Proportionate sample size in each stratum
1			
2			
3			
4			

Total	**Size of the entire population=**	**Total sample size = 150**





CONSORT analysis of nurses' enrollment and recruitment process

Follow up

Analysis

Tools of data collection: *A questionnaire sheet was used to collect data for this study and composed of five parts:*

Part (1): This covers staff nurses ' demographic information such as age, department, education level, years of experience, and pervious training in job crafting**.**

Part (2): **Job Crafting questionnaire was developed by Tims, et al. (2012).** It consisted of 13 items with three subscales [1] seeking recourses included 6 items e.g.(I ask others for feedback on my job Performance), [2] seeking challenges included three items, e.g.(I ask for more tasks if I finish my work), and reducing demands by using 4 items e.g.(I try to ensure that my work is emotionally less intense) . The *questionnaire* was measured on five-point ranging scale from (1) "Never" to (5) "Always". The total score of this tool ranged from 13-65. Scores ≥[ ] indicated a higher perception level of job crafting behavior, scores [ ] indicated a moderate level, while scores [ ] indicated a low perception level (please reference to level). (please reference if tools used with nurse and previous reliability and consistency). The reliability of the tool was measured by Cronbach alpha coefficient and it was ranged from .87 to .92

Part (3): **Work And Meaning Inventory(WAM I**)

The scale was developed by Steger et al.(2012), to reflect weekly work meaningfulness by using the 10-items. The WAMI consists of three facets: positive meaning 4 items e.g. (I understand how my work contributes to my life's meaning this week), meaning making 3 items e.g. (This week, I viewed my work as contributing to my personal growth), and greater good motivations 3 items e.g.(This week, I knew my work made a positive difference in the world). All items were scored on a five-point Likert scale ranging from 1 (absolutely untrue) to 5 (absolutely true). The total score of this tool ranged from 10-50. Scores ≥[ ] indicated a higher perception level of work meaningfulness, scores [ ] indicated a moderate level, while scores [ ] indicated a low perception level(please reference to level). (please reference if tools used with nurse and previous reliability and consistency). . The reliability of the tool was measured by Cronbach alpha coefficient, it ranged from .60 to .81 (M = .71).

Part (4): **Change attitude scale:** This dependent variable was measured using 15 items from Dunham et.al (1989), to measure the affective, cognitive and behavioral dimensions of attitude towards change. It includes two subcategories; positive attitude

towards change with 7 items e.g.(I am happy at the prospect of this change), and negative attitude towards change 8 items e.g. (I find it difficult to accept new things). All statements were rated on a scale Likert that went from 1 (strongly disagree) to 5 (strongly agree). *Scoring system: The total score of this tool ranged from 15-75.*
The scores were categorized into highly openness to change (positive attitude) (participants who scored > 75% on attitude based questions), and (resistance) unfavorable negative attitude (participants who scored ≤75% on attitude based questions). (please reference to level). (please reference if tools used with nurse and previous reliability and consistency). Cronbach's alphas was (α=.859).

Part (5): **Task, Contextual and Adaptive performance scales:** was used for measuring task and Adaptive performance; task performance was measured by a scale developed by Williams and Anderson (1991). Seven items on task performance were measured e.g. (Fulfills responsibilities specified in job description") They were measured on a five-point ranging scale from (1) "Strongly disagree" to (5) "Strongly agree". The total score of this tool ranged from 7-35. Scores ≥[ ] indicated a high levels of task performance, scores [ ] indicated a moderate level, while scores [ ] indicated a low perception level (please reference to level). (please reference if tools used with nurse and previous reliability and consistency). . Cronbach alpha was α=.770.

Adaptive performance*:* was measured on a five item scale. This originated from the preferences of the Elkerliek hospital. A sample item for adaptive performance include: "I use the screening in the quality chart to predict risk on delirium"; "I use the checklist in the care chart";"I use prevention actions and treatment interventions in my daily job". The scale ranges from (1) "Never" to 5"Extremely often". The total score of this tool ranged from 5-25. Scores ≥[ ] indicated a high levels of adaptive performance, scores [ ] indicated a moderate level, while scores [ ] indicated a low perception level adaptive performance(please reference to level). (please reference if tools used with nurse and previous reliability and consistency). . Cronbach alpha was α=.909.

Content validity and reliability:
After the instrument was translated into Arabic, data were collected using a self-administered questionnaire. A jury of experts (5 professors & 7 assistant professors)

from academic nursing staff, nursing faculties, Zagazig and Cairo Universities has developed the content and face validity. All the necessary adjustments were made according to their opinions.

Pilot study:

A pilot study was conducted on 10 % of the research sample (n=8) before using it to evaluate its accuracy and feasibility. All nurses participating in the pilot study were excluded. An informed consent was received from the entire study sample for inclusion in the analysis. Involvement in the study is voluntary. Each participant may decide to stop the study and withdraw at any time without consequence.

Field work:

The study was carried out for six months from the beginning of March to the end of August 2023 as the following:

Preparatory phase: It began with a review of national and international resource of theoretical and empirical literature on the subject of the study using textbooks, articles, magazines, research, and internet search to get a clear picture of all aspects related to the study.

Before the program took place, structured interviews were conducted with random nurses from all departments. The aim for the structured interview was to distill key information on all dependent variables and the control variables. This includes the current resources that are used, experienced job demands and overall attitude towards the job and organizational change. The structured interview has not been recorded as this may have created a respondent bias (Crowther & Lancaster, 2008). The main goal of the structured interview was to find best practices of nurses already crafting their job. Additionally, the aim was to find examples of what gave nurses energy in their work context and what resulted in energy depletion during their job. This could then be used to tailor the program to prevent a one-size-fits-all presentation. Furthermore, this was aimed at identifying influencers that could aid in stimulating other nurses to craft their job. Their congregated, anonymous input was to be used during the intervention, resulting in discussion points for all participants of the intervention. Additionally, the

head nurses of the departments were briefed on the upcoming research. This step was included as this may aid in the effectiveness of the intervention as they may stimulate and motivate the nurses to part-take in the intervention with motivation and enthusiasm. The pre-test forms have been given to nurses to determine their training needs regarding job crafting and job crafting behavior among Nurses. The data were gathered during morning and afternoon shifts for four days / week. The time each staff nurse needed to complete each sheet varied from 25 to 30 minutes. The learning needs of nurses were established based on pre-test results. Accordingly, the program's goals have been set out and the content developed.

Implementation phase: ((please insert in table with sessions name, objective, time, steps).

The training program designed for this study was implemented through twelve sessions, from which three theory and nine practical sessions were held in a room at the worksite. The sessions were conducted outside of working hours in the hospital These sessions lasted 21 hours; 3 theory hours (one hour for each theoretical session); and 9 practical sessions (two hours for each practical session). Having the whole number of nurses at the same time was difficult, so the nurses were classified into five groups each group consisting of about 16 nurses. All sessions were repeated to the five main groups until 80 nurses completed the entire 21-hours instruction period.

The program includes three main parts;

the first theoretical part covers knowledge of the job crafting, job crafting theory, Job Demands–Resources model, definition work environment, combine work environment and JD- R model. Then, based on examples from structured interviews conducted before the program, examples of job crafting are provided, as well as examples of a work analysis. Success stories of past job crafting behaviors of staff nurses were shared and discussed. This was helpful to reflect on the current work performance, and then made their own individual job crafting plans.

The second practical part was included to guide the employees on how to craft their daily activities and to give them suggestions on craft-able work-related activities as 1- increasing job Resources e.g. ask feedback, ask support, ask for help from colleagues or your leaders if you need help, participate committees, look for trainings, invest in

relationships, and clean your desk to work more efficiently. 2- increasing challenging job demands e.g. volunteer work for a committee, communication about emotional/serious issues to patients and families, offer to be responsible for making the nursing schedule in a certain month, share your head nurse in writing certain documents, and stay informed about current and recent research.3- decreasing hindering job demands e.g. simplify tasks, work more efficient, let go perfectionism, say 'no', make clear appointments, checking emails only at certain times during the day and make use of relationships. The staff nurses were then asked to conduct a personal work analysis, guided by questions in their personal action plan. They were also provided with a homework papers for a job crafting exercise. Each staff nurse reviewed his/her own job crafting plan individually (20 min); the nurses then shared their reflections as a group (30 min), discussed what job crafting would be feasible and sustainable to practice (35 min), and, finally, made a modified job crafting plan (35 min). Thereby aiming to increase
awareness for the utility of job crafting in their work environment.

The third and last part

consisted of setting personal goals. These goals were aimed at the three job crafting dimensions and had to be SMART5. Complementary, the participants had to formulate actions to attain their personal goals. Each staff nurse had one week to attain his or her goal with respect to the corresponding job craft dimension of that week. The researchers used different teaching approaches to attract the attention of nurses and to inspire them to participate, such as seminars, group discussion and brainstorm. The teaching media included: power point, white blackboard and a copy of the program which covered theoretical and practical information about job crafting, Job Demands–Resources model, combine work environment and JD- R model. All data were collected using a self-report questionnaire at baseline, post-intervention, and three-month follow-up.

Evaluation phase: The impact of the educational program was measured during this phase; it was carried out immediately after the program was introduced and followed up after 3 months of implementation using the same method formats used before the program was implemented.

Administrative and ethical considerations*:*

Before the research started, ethical approval was given by the Scientific Research Ethics Committee at the Faculty of Nursing-Zagazig University (NO: 056). Participants were

explained the study objective and protocol, and only those who provided informed consent were included. Voluntary participation, autonomy, and confidentiality of the information gathered were confirmed.

Statistical design:

All data were collected, tabulated, and statistically analyzed using version 20.0 of the Social Science Statistical Package (SPSS), quantitative data were expressed as mean ± SD and range, and qualitative data were expressed as absolute frequencies (number) & relative frequencies (percentage). Paired t-test was used to compare normally distributed variables between two dependent groups. P.

Pearson correlation coefficient has been determined to determine the relationship between different variables of the sample,(+) sign indicates direct correlation and-) (sign indicates reverse correlation, even values close to 1 indicate strong correlation and values close to 0 indicate weak correlation. All testing was two-sided. P-value < 0.05 was deemed statistically significant (S), and p-value < 0.001 was considered highly statistically significant (HS), and p-value ≥ 0.05 was considered statistically insignificant (NS).

References

1- Alshammari, M.H., Alenezi, A. Nursing workforce competencies and job satisfaction: the role of technology integration, self-efficacy, social support, and prior experience. BMC Nurs 22, 308 (2023). https://doi.org/10.1186/s12912-023-01474-8

2- Gottlieb LN, Gottlieb B, Bitzas V. Creating Empowering Conditions for Nurses with Workplace Autonomy and Agency: How Healthcare Leaders Could Be Guided by Strengths-Based Nursing and Healthcare Leadership (SBNH-L). J Healthc Leadersh. 2021 Jul 27;13:169-181. doi: 10.2147/JHL.S221141. PMID: 34349581; PMCID: PMC8326221.

3- Price S, Reichert C. The Importance of Continuing Professional Development to Career Satisfaction and Patient Care: Meeting the Needs of Novice to Mid- to Late-Career Nurses throughout Their Career Span. Administrative Sciences. 2017; 7(2):17. https://doi.org/10.3390/admsci7020017

4- Mlambo, M., Silén, C. & McGrath, C. Lifelong learning and nurses' continuing professional development, a metasynthesis of the literature. BMC Nurs 20, 62 (2021). https://doi.org/10.1186/s12912-021-00579-2

5- Saleh MO, Eshah NF, Rayan AH. Empowerment Predicting Nurses' Work Motivation and Occupational Mental Health. SAGE Open Nurs. 2022 Feb 23;8:23779608221076811. doi: 10.1177/23779608221076811. PMID: 35224187; PMCID: PMC8874176.

6- Topa G, Aranda-Carmena M. Job Crafting in Nursing: Mediation between Work Engagement and Job Performance in a Multisample Study. Int J Environ Res Public Health. 2022 Oct 5;19(19):12711. doi: 10.3390/ijerph191912711. PMID: 36232011; PMCID: PMC9566469.

7- Han, S. Nurses' job crafting, work engagement, and well-being: a path analysis. BMC Nurs 22, 405 (2023). https://doi.org/10.1186/s12912-023-01573-6

8- Alharthi N, Elseesy N, Aljohani W. The Relationship Between Job Crafting and Nurses' Happiness in Bisha Region, Kingdom of Saudi Arabia. Cureus. 2023 Mar 2;15(3):e35697. doi: 10.7759/cureus.35697. PMID: 36875253; PMCID: PMC9980842.

9- Herulf Scholander L, Vikström S, Mondaca M, Josephsson S. Stories under construction: Exploring meaning-making on a geriatric ward. J Aging Stud. 2021;58:100940. https://doi.org/10.1016/j.jaging.2021.100940.

10- Mudallal RH, Othman WM, Al Hassan NF. Nurses' Burnout: The Influence of Leader Empowering Behaviors, Work Conditions, and Demographic Traits. Inquiry. 2017 Jan 1;54:46958017724944. doi: 10.1177/0046958017724944. PMID: 28844166; PMCID: PMC5798741.

11- Pressley C, Garside J. Safeguarding the retention of nurses: A systematic review on determinants of nurse's intentions to stay. Nurs Open. 2023 May;10(5):2842-2858. doi: 10.1002/nop2.1588. Epub 2023 Jan 16. PMID: 36646646; PMCID: PMC10077373.

12- Chang PC, Rui H, Lee AYP. How Having a Calling Leads to Job Crafting: A Moderated Mediation Model. Front Psychol. 2020;11:552828. doi:10.3389/fpsyg.2020.552828.

13- El-Gazar HE, Abdelhafez S, Ibrahim N, Shawer M, Zoromba MA. Effect of Job Crafting Intervention Program on Harmonious Work Passion and Career Commitment among Nurses: A Randomized Controlled Trial. J Nurs Manag. 2023;Volume 2023:Article ID 9623866:14. doi:10.1155/2023/9623866.

14- Romeo M, Yepes-Baldó M, Nordin M, Westerberg K, Lundmark R, Morales P. The influence of job crafting on the quality of care provided by nursing home employees: The moderating effect of organizational identification. Curr Psychol. 2023;42:10613–10628. https://doi.org/10.1007/s12144-021-02317-y.

15- J. van Wingerden, A. B. Bakker, and D. Derks, "The longitudinal impact of a job crafting intervention," European Journal of Work & Organizational Psychology, vol. 26, pp. 107–19, 2017. View at: Google Scholar

16- A. Sakuraya, A. Shimazu, K. Imamura, K. Namba, and N. Kawakami, "Effects of a job crafting intervention program on work engagement among Japanese employees: a pretest-posttest study," BMC Psychology, vol. 4, pp. 49–9, 2016.

17- E. Kuijpers, D. T. A. M. Kooij, and M. van Woerkom, "Align your job with yourself: the relationship between a job crafting intervention and work engagement, and the role of workload," Journal of Occupational Health Psychology, vol. 25, pp. 1–16, 2020.

18- Thompson, S.K. (1987). Sample Size for Estimating Multinomial Proportions. The American Statistician, 41, 42-46.

19- Tims, M., Bakker, A., & Derks, D. (2012). Development and validation of the job crafting scale. Journal of Vocational Behavior , Manuscipt submitted for publication, 173-186.
20- Steger, M.F., Dik, B.J., & Duffy, R.D. (2012). Measuring meaningful work: The Work and Meaning Inventory (WAMI). Journal of Career Assessment, 20, 322–337. DOI: 10.1177/1069072711436160 http://jca.sagepub.com.

21- Dunham, R. B., Grube, J. a, Gardner, D. G., Cummings, L. ., & Pierce, J. L. (1989). The development of an Attitude toward Change Instrument. Organizational Development, (September 2014), 1–22.
22- Williams, L., & Anderson, S. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship behaviors. *Journal of Management, 17*, 601-617.
23- Elkerliek, E. h. (2012, 2 27). Problems at the Elkerliek. (J. v. Mersbergen, Interviewer).
24- Crowther, D., & Lancaster, G. (2008). Research Methods (second). London: Elsevier Butterworth-Heinemann.
25- Griffin,M., Neal,A., and Parker,S . (2007).Academy of Management Journal Vol. 50, No. 2, 327–347.
26- Goodman, S. A., & Svyantek, D. J. (1999). Person-organization fit and contextual performance: Do shared values matter? Journal of Vocational Behavior, 55(2), 254–275.
27- Metselaar, E. E. (1997). Assessing the willingness to change: Construction and validation of the DINAMO. NL: Free University of Amsterdam (Unpublished doctoral dissertation).

Theoretical Framework Job crafting intervention is a training program designed to encourage individuals to proactively redesign their jobs by optimizing available job resources, managing increased job demands, and adapting to new job challenges [34]. Job crafting intervention is based on two main approaches: (1) the Wrzesniewski and Dutton approach, which frames job crafting as proactive changes in task, relational, and cognitive job aspects [10], and (2) the Tims et al. approach, which is based on the Job Demands-Resources (JD-R) theory [7]. Te JD-R theory postulates that individuals require a sufcient amount of job resources to efectively cope withthe demands they encounter in their work. According to this theory, organizations play a

crucial role in providing optimal job demands and resources to their employees. However, individuals also possess the autonomy to proactively modify their job demands and resources, thereby contributing to a better alignment between individuals and their jobs. Consequently, this leads to enhanced optimal functioning within the workplace [35]. Job crafting, when framed within this context, refers to the ability of individuals to change three types of job characteristics: job resources, seeking challenge, and job demands [7]. Previous studies have explored the outcomes of job crafting intervention and demonstrated its positive efect on enhancing work engagement, job performance [29], career satisfaction [36], and well-being [12]. Job crafting intervention increases individuals' awareness of their own preferences and needs, empowering them to take action to make changes. Te job crafting intervention provides individuals with specifc techniques and tools they can use to identify areas where they can make changes to manage their job resources and demands. Moreover, job crafting intervention encourages them to formulate a job crafting plan, which increases their adherence to job crafting behaviors [37]. Hence, job crafting intervention leads to an increase in job crafting behaviors and all related dimensions. Terefore, the study hypothesized that

Subjects and Methods

3.1. Study Design. Tis study was a two-arm, parallel, openlabel randomized controlled trial (RCT) that conforms to the Consolidated Standards of Reporting Trials (CONSORT) guidelines [44]. Te study protocol was registered at ClinicalTrials.gov (Identifer code: NCT05329805; 15/04/2022). 3.2. Participants and Setting. Tis study recruited nurses working 12 hours per shift for 186–195 hours a month at one of the universal health insurance hospitals in Port Said Governorate, Egypt. Nurses who were licensed staf nurses, worked in a ward, and had at least 6 months of experience were included in the analysis. In contrast, nurses who were involved in any other intervention program within the last 12 months, working in clinics, or holding an administrative position were excluded. Of the 224 invited participants, 58 did not meet the inclusion criteria, 62 declined to participate, and 10 were piloted. Ultimately, 94 were included

and randomly allocated to the intervention group (n ◆ 47) or the control group (n ◆ 47). Overall, 79 (39 in the intervention group and 40 in the control group) completed the intervention up to T2 data collection. Te attrition rate from the baseline (T0) until T2 data collection was 15.95%. Figure 1 illustrates the consort fow diagram of the participants. 3.3. Sample Size Calculation. A prior sample size was estimated using the G∗Power 3.1.9.7 Software [45] for repeated measures analysis of variance (ANOVA) design (withinbetween interactions) with efect sizes of 0.26 and was obtained from the meta-analysis on job crafting intervention that included healthcare professionals [29] (α error ◆ 0.001, power ◆ 0.95). A sample of 72 participants (36 for each group) was estimated. Considering the possibility of a 30% attrition rate resulting from high dropout/loss to follow-up among Egyptian participants [46], the recruitment target was 94 participants (47 in each group). 3.4. Randomization and Blinding. An independent researcher randomly assigned the participants to the intervention or control group by using the "Research Randomizer" web-based program [47]. Te number of groups needed and the number of potential participants were input into the program, which generated two sets of 94 unique, sorted numbers arranged from the least to the greatest and allocated randomly to either Group 1 (representing the control group) or Group 2 (representing the intervention group) in a 1 :1 ratio. Te allocation sequence was concealed by using opaque sealed envelopes. Blinding was not feasible in this study because the intervention provided was an educational program, which made the blinding of the researcher or the participants to the group allocation difcult [48]. Nevertheless, to minimize the risk of bias, the data collection and analysis were performed by authors (SM, MS, and MZ) were not involved in providing the intervention program conducted. 3.5. Intervention. Te job crafting intervention program was developed according to the Michigan Job Crafting Exercise [37] and was operationalized on the basis of the JD-R theory principles [49]. Te intervention aimed to train the participants in maximizing their job resources, optimizing the increased job demands, and adapting new job challenges, which may be useful in enhancing their harmonious work passion and

career commitment. Prior to the intervention program, potential participants and nursing managers with diferent levels were interviewed to understand the work context, which included the following: what does good performance mean from their point of view, what hinders them from doing so, what helps them to provide high-quality care, what tasks represent challenges, and why they did not assume such challenges. Tis information was utilized to prepare a tailored intervention and customized examples in creating the intervention. Five-expert committee included two nursing administration professors, one nursing manager, and two staf nurses with master's degrees were asked for suggestions on the content and structure of the intervention materials. Te intervention materials were modifed based on their suggestions and sent back to the committee for approval. Ten the intervention materials were pilot tested to ensure their quality and clarity. Tereafter, the intervention was conducted, consisting of a 2-day workshop, 3 weeks of job crafting implementation, and a refection session. Te workshop consisted of four 60–90-minute sessions with 2 sessions per day and 30 min rest between sessions over 2 days. In session 1, the researcher introduced the theoretical background. In session 2, the JDR model was discussed in detail, and the participants were requested to share their personal job crafting experiences. In session 3, they were invited to participate in the Michigan Job Crafting Exercise [37], which included job analysis, personal analysis, and job-personal analysis. As a result ofcompleting the exercise, each participant was expected to be aware of the following: resources that could be increased, the idea that demands could be decreased without interrupting the work, and areas that represent a challenge to them. In the fourth session, the participants were invited to prepare their own "Personal Crafting Plan." Table 1 details the content of the workshop. At the end of the workshop, each participant received a booklet of the teaching material, which was developed according to an intensive literature review [8, 10, 37, 49–51] and the nurses' needs that were identifed through interviews. Furthermore, a list of job crafting activities was distributed. Tis list was developed by the researchers according to a previous job crafting study [31, 32, 52] and input from interviews. Tis list contained four sections. Te frst section included a set of points to increase job resources, such as "Asking for help from your colleague or your leaders if you need it" and "Clean your desk to work more efciently." Te second section included a set of points to increase challenging job demands, such as "Ofer to be responsible for making the nursing schedule in a certain month" and "Share your head nurse in writing certain documents e.g., lab-ray or sterilization." Te third section includes a set of points

to decrease hindering demands, such as “Checking emails only at certain times during the day” and “Encourage patient to perform daily morning care by himself.” Te fourth section included fve potential nursing situations with suggested job crafting activities. Each situation was accompanied by activities that can increase resources, increase challenging demands, and decrease hindering demands. Giving a list of job crafting activities makes it easier for nurses to practice job crafting [32]. After fnishing the workshop, the participants were asked to engage in job crafting activities for 3 weeks guided by the job crafting activity list and the plan developed by the researchers. Te participants were then asked to target activities related to increasing resources, optimizing job demands, and seeking challenges in weeks 1, 2, and 3, respectively. During this 3-week intervention period, the participants were invited to a WhatsApp group, which was formed to encourage, guide, share experiences, and send reminders twice weekly to engage in the assigned behaviors. After completing the 3-week intervention program, a refection session was held. In this session, participants were asked to evaluate their success, obstacles, solutions, and future plans for how they can craft their job. At the end of the session, the researcher expressed appreciation to each group member. 3.6. Control Group. In the control group, the participants received only the content provided in the frst and second sessions. Tey neither participate in the Michigan Job Crafting Exercise nor prepare the Personal Crafting Plan. Unlike the intervention group, the control group was not required to participate in the 3-week job crafting intervention or the refection session