



NCT06742047
A PROFESSIONAL DEVELOPMENT
PROGRAMME (PRODEVELOP)
FOR NEWLY GRADUATED NURSES 2023

Summary

Pre-specified study protocol and statistical analysis plan (SAP)
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Sustainable Professional Development – Introduction Program for Newly Graduated Nurses

1. Background

A newly graduated nurse (NGN) entering their first workplace may experience significant uncertainty and considerable stress. Common stressors include being exposed to challenges such as work overload and feeling alone and uncertain in the new situation (Duchscher, 2012). Studies show that one-fifth of NGN reported frequent symptoms of burnout, and an equal number had thoughts of leaving the profession (See et al., 2023). In Region Västmanland, 20% of newly hired nurses leave their first position after three years. After three years, 42% remain in their first position (Törnqvist, 2020).

To support NGN in their transition to practice, healthcare organizations offer introduction programs and other initiatives intended to promote learning and integration, thereby creating a sustainable start in the profession. Previous research shows that such introduction programs for NGN can contribute to competence development, but they are not always based on scientific evidence (Rush et al., 2019). Earlier research on introduction programs for several professional groups, including NGNs, showed positive effects on perceptions of uncertainty and stress. Implications for continued development include creating more targeted interventions that promote role clarity, action capacity, recovery, and social acceptance (Frögéli et al., 2023).

Sick leave among nurses in Region Västmanland is currently around 7.5% of approximately 1,000 registered nurses, potentially related to stress and uncertainty in the profession. Many choose to leave the profession, placing additional strain on those who remain. Supporting sustainable professional development is therefore crucial. Creating, implementing, and evaluating an evidence-based introduction program may contribute to increased job satisfaction.

2. Interventions of ProDeveloP

In this project, a professional development program (ProDeveloP) is developed and will be implemented based on existing research in the field, particularly results from earlier research on sustainable working life focusing on new professionals such as NGNs (Frögéli et al., 2022; Gustavsson et al., 2020), funded by AFA. Based on these findings, ProDeveloP will be developed with targeted components with a special focus on reflection and recovery, which were specifically highlighted as needed (Widarsson et al., 2020), to optimize its effect and support job satisfaction and health among NGN. The project will be conducted in collaboration with Region Västmanland and Mälardalen University (MDU).

ProDeveloP was developed based on the previous introduction programme and existing research. ProDeveloP will be implemented in 2023 through a collaboration between a university and a regional education centre and will be conducted in Swedish. It consisted of eight educational days delivered over the first four months (the same as in the previous introduction programme in 2022), however also incorporated simulation exercises for acute and trauma situations, as well as skills training in various clinical procedures. It also included additional components such as four focus areas—role clarity, task mastery, social acceptance,

and recovery—and integrated structured reflection facilitated through dialogue groups, addressing ethical and emotional challenges.

3. Purpose and Research questions

The purpose of the project is to develop, implement, and evaluate a digital professional development program aimed at strengthening newly graduated nurses' role clarity, capacity for action, social acceptance, reduction of stress, and improvement of recovery, thereby increasing job satisfaction.

1. What does the development of role clarity, task mastery, social acceptance, and stress look like during the first quarter of employment?
2. What are newly graduated nurses' experiences of recovery, and how does it develop during their first year when participating in ProDeveloP?
3. What are their experiences of reflection sessions, supervisors, and support for professional development?
4. To what extent are newly graduated nurses satisfied with their work, feel confident in their competence, and want to remain in their workplace after completing the ProDeveloP?
5. What are supervisors' and managers' experiences of ProDeveloP?

4. Method

Research participants

All newly hired NGN participating in ProDeveloP will be invited to participate in the studies. Two groups (January 2023 and June 2023), each with 40–50 participants. One control group of NGNs participating in the prior introduction programme will be invited to participate in November 2022, with approximately 40-50 participants.

Design and Data Collection

The project has a prospective, longitudinal design. Both qualitative and quantitative methods will be used to answer the research questions. The questionnaires used in the study are based on validated instruments (Frögéli et al., 2019), which helps ensure the reliability of the data collected. The questionnaires will be distributed digitally via Survey and Report. One control group measurement is planned before intervention starts. Self-assessments via questionnaire are planned to be completed by the NGNs. Thereafter, self-assessments are conducted once a week during the first quarter for the intervention group. Follow-up measurements are then carried out once per quarter for up to one year after graduation. The individual interviews with NGNs and managers, and the focus groups with NGNs and supervisors, are planned to be conducted after the program has been completed. The qualitative interviews will be audio-recorded and transcribed. An overview is presented in Table 1.

Table 1. A detailed table of data collection and data analysis

Research question	Data collection	Data analysis
1	Self-assessment instruments	Descriptive statistics, regression analyses
2	a) Individual interviews b) Self-assessment instruments	a) Phenomenology b) Descriptive statistics, ANOVA, χ^2
3	Focus group interviews	Content or thematic analysis
4	a) Self-assessment instruments b) Individual interviews	a) Descriptive statistics, ANOVA, χ^2 b) Content analysis or phenomenography
5.	Focus group interviews and individual interviews	Content or thematic analysis

Timeline

Once the analyses and results have been completed and the journal editors have approved the publication; the results will be made public. Publications will take place continuously, but the doctoral thesis work is planned to be completed with a defence at the end of 2027.

Ethical Considerations

All NGN entering the introduction year will receive written and oral information about the project. Participation is voluntary and can be withdrawn at any time. A consent form will be provided. Data will be handled confidentially, and a data management plan will be prepared. An application is approved by to the Swedish Ethical Review Board (Dnr.2022-05682-01).

5. Pre-specified statistical analysis plan

The plan comprehends a statistical analysis plan for self-assessment instruments.

Study design and study population

A quantitative intervention design with a non-randomised design with a two-arm structure is planned. The study's first arm (control group) is all eligible NGNs who participates in the previous introduction programme in September 2022. The survey for this group will be administered in late November 2022. The second arm (intervention group) comprise all eligible NGNs participating in the ProDeveloP starting either in February or in September 2023, depending on their graduation date. The surveys for group comparison will be distributed digitally in early May or December, aligned with the same time frame as the control group. Longitudinal surveys will also be collected during the intervention group's first year in ProDeveloP however this is not possible for the control group.

Inclusion criteria were newly employed NGNs who participated either in the previous introduction programme in 2022 or in ProDeveloP in 2023. Specifically, all eligible NGNs employed in 2022 who participated in the September introduction programme were included in the control group. All eligible NGNs employed in 2023 who participated in ProDeveloP,

starting in either February or September, were included to the intervention group. No explicit exclusion criteria were applied.

Outcome measures

Primary outcomes include perceived stress, role clarity, task mastery, and social acceptance. These outcomes will be measured during the first 13 weeks for the intervention group and at week 13 for the control group. All instruments use five-point Likert scales in Swedish, based on questionnaires previously validated in the Swedish context. Secondary outcomes include recovery, intentions to stay, and job satisfaction. These will be measured at months 4, 8, and 12 for the intervention group. The instruments use five- or seven-point Likert scales in Swedish, based on measures previously validated in the Swedish context.

Covariates

Covariates will include variables related to the outcomes such as role clarity, task mastery, social acceptance and demographic factors, such as prior clinical experience before participation in the programme.

Definition of combined measures

Scale scores will be computed by summing items response format (0 - 4 or 0- 6 depending on the instrument).

Missing Data

The extent and pattern of missingness will be described. If indicated, sensitivity analyses may be performed.

Plan of statistical analyses

Statistical analyses will be conducted using SPSS Statistics, with support from experienced researchers and statisticians. All procedures and results will be verified for accuracy. The data will be checked for deviations from normality. The plan is to analyse and report data with descriptive statistics, ANOVA, and χ^2 . This to compare the mean scores of the study variables, including CI and p-values, to determine differences between control and intervention groups. A two-sided significance level of $p = .01$ will be applied. Bonferroni correction to control the family-wise error rate (FWER) will be used, adjusting the conventional threshold of $p = .05$ by dividing it by the number of tests. The effect size of mean differences could be included. To further examine differences between the control and intervention groups, linear regression analysis will be conducted. The models will include covariates. Consort guidelines will be used to support the analysis process.

6. Utilization, Dissemination, and Communication Plan

The interventions are expected to contribute to a sustainable working life for nurses by strengthening competence, reducing stress, and promoting retention. Results will be utilized to inform healthcare policy and organizational practices aimed at improving nurse retention and well-being. Results will be disseminated regionally, nationally, and internationally

through peer-reviewed scientific articles, conference presentations and to stakeholders and health care professionals. The project will result in the production of a doctoral thesis, where findings from all study components will be synthesized. To ensure broader communication, key outcomes will also be shared via media and networks.

References

- Duchscher, J. (2012). *From surviving to thriving. Navigating the first year of professional nursing practice*. Nursing the future, the voice of the new graduates.
- Frögéli, E., Annell, S., Rudman, A., Inzunza, M., & Gustavsson, P. (2022). The Importance of Effective Organizational Socialization for Preventing Stress, Strain, and Early Career Burnout: An Intensive Longitudinal Study of New Professionals. *International Journal of Environmental Research and Public Health*, 19(12). <https://doi.org/10.3390/ijerph19127356>
- Frögéli, E., Jenner, B., & Gustavsson, P. (2023). Effectiveness of formal onboarding for facilitating organizational socialization: A systematic review. *PLOS ONE*, 18(2), e0281823. <https://doi.org/10.1371/journal.pone.0281823>
- Frögéli, E., Rudman, A., & Gustavsson, P. (2019). The relationship between task mastery, role clarity, social acceptance, and stress: An intensive longitudinal study with a sample of newly registered nurses. *International Journal of Nursing Studies*, 91, 60-69. <https://doi.org/10.1016/j.ijnurstu.2018.10.007>
- Gustavsson, P., Agrenius, B., Frögéli, E., & Rudman, A. (2020). *Nya professionella: Organisatoriska strategier för att stödja vitalitet och lärande under första anställningstiden i yrken med höga emotionella krav. AFA försäkring, Hållbart Arbetsliv, Slutrapport nya professionella dnr 150596. (New professionals: Organisational strategies to support vitality and learning during the first period of employment in professions with high emotional demands)*. https://afa-forskning.cdn.prismic.io/afa-forskning/541e1c5b-649c-4959-adc5-a284fd86b6c8_Petter+Gustavsson+slutrapport.pdf
- Rush, K. L., Janke, R., Duchscher, J. E., Phillips, R., & Kaur, S. (2019). Best practices of formal new graduate transition programs: An integrative review. *International Journal of Nursing Studies*, 94, 139-158. <https://doi.org/10.1016/j.ijnurstu.2019.02.010>
- See, E. C. W., Koh, S. S. L., Baladram, S., & Shorey, S. (2023). Role transition of newly graduated nurses from nursing students to registered nurses: A qualitative systematic review. *Nurse Education Today*, 121, 105702. <https://doi.org/10.1016/j.nedt.2022.105702>
- Törnqvist, C. (2020). *Staff turnover among newly qualified nurses. A report of the first four years in Region Västmanland*.
- Widarsson, M., Asp, M., Letterstal, A., & Södersved Källestedt, M. L. (2020). Newly Graduated Swedish Nurses' Inadequacy in Developing Professional Competence. *Journal of Continuing Education in Nursing*, 51(2), 65-74. <https://doi.org/10.3928/00220124-20200115-05>