Strengthening Perceptions of Ethical Competence among Nursing Students and Graduates

**Abstract**

Ethical competence is part of healthcare professionals’ competence. It relates to moral issues and is based on the professional's knowledge, attitudes and skills of coping with ethical dilemmas. Ethics education aims to raise perceptions of ethical self-confidence and ethical competency. Previous research found many gaps in ethical education content and poor understanding of how it affects graduates. The current study aims to evaluate an advanced ethics education workshop. The workshop aimed to raise nursing students ethics competany to cope with ethical dellimas at three points of time, among nursing students’ before and after the workshop and among graduates 'using of the generalized self-efficacy scale.

Results: statistically significant differences were found in overall self-efficacy between the three-time points (before, after and after graduate) (mean 2.42 before, 2.13 after and 1.58 for graduates, p<0.000 on a scale ranging from 1-5, 1 means high self-efficacy). High mean scores reported regarding the evaluation of the advanced workshop among students after, and among graduates (mean 7.8 and 7.25, on a scale ranging from 1-10, 10 means high self-efficacy). Graduates reported on a high mean score, regarding their ability to cope with ethical dilemmas compared to other nurses working with them (mean 7.4, on a scale ranging from 1-10). Conclusion: levels of self-efficacy with regard to coping with ethical dilemmas increase over time, suggesting that the advanced workshop strengthens the perceptions of ethical competence among nursing students and graduates.

**Key words**: Ethics education, Nursing students, Self-efficacy, Ethical dilemma, Graduates

**Introduction**

Nurses frequently cope with ethical dilemmas in daily care. They are expected to make ethical decisions and demonstrate high ethical competence. Ethical competence can be achieved when nurses have ethical perceptions and gain knowledge that leads them to ethical reactions and behaviors (Gallagher, 2006). Previous studies have emphasized the importance of ethics education in order to achieve ethical competence(Bahrieni, Azodi, Hajivandi, & Jahanpour, 2017; Calder, 2015; Yoshikawa, Shiba, and Tawara, 2010; Numminen & Leino-Kilpi, 2007; Park, Kjervik, Crandell, & Oermann, 2012; Yoshioka & Kaneko, 2019).

Despite the positive relationship between ethics education and high levels of ethical competence, Hoskins, Grady, and Ulrich's (2018) literature review found many gaps remain in nursing ethical education content and in the impact of ethics educational programs on graduates. Moreover, in the field of micro-ethics, which was defined by the authors as “the everyday ethical decisions that practicing nurses make in the context of common or routine clinical situations” (Kalaitzidis & Schmitz, 2012), ethics-educated nurses failed to recall the knowledge they had obtained prior to making ethical decisions (Erdil & Korkmaz, 2009; Hoskins, Grady, & Ulrich, 2018).

The nursing department in Emek Yesrael College initiated an advanced ethics workshop in order to raise nursing student's ethical competenceand trying to close the described gaps.

**Literature Review**

Studies from the last year described educational programs using deffirent teaching and learning startegies that aim to raise the ethical competence of nursing students. DeSimone (2019) for example, found that adding teaching-learning activities designed to build moral courage values in its classroom and clinical settings, promoted nursing students ethical competence. Polczynski, Rozmus & Carlin (2019) also found that students ethical decision-making skills were higher after the implementation of the campus-wide ethics program. Kim, & Park (2019) examined the effect of debate-based ethics education and lecture-style ethics education on the moral sensitivity and moral judgment of nursing students. They found that the program was effective in raising the ability of ethical decision making and moral jadgment.

Ethics education found to be effective when it is based on the contemporary pedagogical approach (Trobec & Starcic, 2015), including analyzing cases (Kalaitzidis & Schmitz, 2012),discussions in sub groups (Dinç & Görgülü, 2002; Lin, Lu, Chung, & Yang, 2010),and simulations (Gropelli, 2010; Tuxbury, Wall Mccauley, & Lement, 2012; Vanlaere, Coucke, & Gastmans, 2010), all integrated with lectures. These approaches allow students to make ethical decisions in indirect ways (Davis, Tschudin, & De Raeve, 2006). Moreover, the ethical case studies from the nursing clinical fields help practitioners to analyse ethical dilemmas and acquire tools for decision-making (Hsu, 2011).

**Purpose**

The current study aims to evaluate an advanced ethics education workshop and to conduct a follow-up evaluation of nursing students and graduates’ competency in coping with ethical dilemmas, at three points of time through the use of the using the **self-efficacy** theory. Self-efficacy was measured at three points of time: (1) before the advanced workshop; when all students had completed a course on the fundamentals of ethics, (2) at fourth year, at the end of the advanced workshop and (3) among graduates who had participated in the advanced workshop as students. Coping with ethical dilemmas means that students and graduates can conduct an analysis of ethical dilemmas, find solutions to problems, and make an ethical decision.

**Methods**

Description of the Advance Workshop

1. The ethical axis – dealing with the principles of ethical thinking, values, and the guiding principles of ethical thinking.

2. The theoretical axis – theories that explore ethical dilemmas, a model for the resolution of ethical dilemmas.

3. The personal axis – emotional positions and a sense of the ability to cope with ethical dilemmas.

4. Professional experience – the encounter with an ethical issue that raises a dilemma.

The following ethical principles and values constituted the theoretical foundation and framework for discussion in the group:

Key values in nursing

* Safeguarding human dignity and rights
* Integrity and truthfulness
* Benevolence and not causing harm
* Maintaining autonomy
* Taking responsibility
* Equality, justice, and decency
* Preserving privacy and secrecy
* Non-discrimination and non-labeling, respecting diversity

These ethical principles are supplemented by additional practice facilitated by a model for resolving ethical dilemmas. **Workshop program:**

Two meetings: The ethical story. The students submitted texts in writing to the lecturer and received feedback.

One meeting: Theoretical background

Two meetings: Individual consultations

Nine meetings in which students presented ethical dilemmas.

The factual basis used by the students included The Nurses’ Code of Ethics, Patient’s Rights Law, and the Physician’s Code of Ethics.

Students and graduates were expected to use the ethical principles referring to the Nursing Ethical Code and the Patients’ Right Law, together with the ethical decision-making models and tools learned and practiced at the advance workshop (for example the tool of Wagner, 1985).

**Presentation and Discussion on Ethical Dilemmas:**

In class, groups of four students each presented an ethical dilemma using practical demonstrations such as film, role play, simulation, and narratives.

Each meeting was divided into five parts:

1. Presenting the story
2. Analysing the story and identifying the dilemmas
3. Theoretical-factual background
4. Proposed solutions, costs, and benefits
5. What the student takes away from the meeting for coping with the next dilemma.

Open-mindness, acceptance, and non-judgmental reception of the story were emphasized. This enabled exposure and sharing without fear of critique.

At the end of the workshop, each student was asked to write a personal paper on the story they presented and to analyze it according to the principles acquired in the workshop.

Story, identification of the dilemma/s, suggestions for solutions, choosing the solution, benefits and cost of the chosen solution.

During the workshop:

1. Students shared personal stories they had experienced during their clinical training in hospital departments or community clinics. Each story needed to present an ethical problem.
2. Some of the stories were analyzed in the group, and ethical dilemmas were identified and classified thematically. For identifying the dilemmas, the students used the list of guiding values and principles in ethical dilemma resolution.
3. The students were asked to choose one dilemma and examine it based on the factual basis available to them.
4. The students were asked to propose solutions while considering the provision of an ethical response vis-à-vis cost.
5. The workshop ended with a round of sharing insights (“check-out”) in which students summarized the insights and sense of competency that they had gained in the meeting. Emphasis was put on the level of generalization beyond the concrete event.

The workshop’s structure, which involves construction on the one hand, and provides space and openness in which complex content can be raised, on the other, formed a progressive and active framework for dealing with ethical dilemmas. This was reflected in the rise in the students and graduates’ feeling of capability to cope with ethical issues, which are so common in the healthcare system.

**Theoretical Foundation**

The theoretical rationale of the advanced workshop is the constructivist theory (Reeves & Hedberg, 2003), which states that knowledge is “temporary, non-objective, developmental, internally constructed, and socially and culturally mediated”. In order to construct opinions, values, and beliefs, individuals use their knowledge and any new information they have gained.

The advanced workshop aimed to strengthen perceptions of ethical competence by raising the students' self-efficacy in coping with ethical dilemmas**.** Bandura (1977) defined **self-efficacy** as a person’s belief that someone can carry out behaviors and it will result in certain outcomes. According to the theory, high self-efficacy beliefs enable people to cope with complicated situations. In other words, ***"beliefs people hold about their*** ***own capabilities***" can predict their behaviours in a particular domain.

The generalized self-efficacy scale is an important tool for evaluating the impact of education on the improvement of behavior and competence of health care workers (Doyle et al., 2011). The working hypothesis of this study is that students’ and graduates’ self-efficacy can predict their competency in the ethics domain.

The authors suggest that after the advanced workshop, nursing students’ and graduates’ beliefs about their own capabilities to cope with ethical dilemmas will predict their ethical reactions and behaviors. Bandura (1986) found that self-efficacy is a predictor for students’ achievements across academic areas and levels. Previous research in the field of ethics also found that nursing student' choices, efforts, and determination to solve and cope with ethical dilemmas, depend on their ethical self-efficacy (Pajares & Urdan, 2006; Laabs, 2012). Moreover, previous studies found that high levels of self-efficacy are correlated with years of experience in nursing (Pajares & Urdan, 2006; Soudagar, Rambod, & Beheshtipour, 2015).

**Survey Process**

***Design and sample***: In this cross-sectional study, a Google Docs anonymous self-administered online software questionnaire was distributed via the course website. The study was initially intended to be a paired study, however after fewer than ten students agreed to be assigned a personal identifier, it was decided to analyze data independently. The questionnaire (before) was distributed on the first day of the advanced workshop to all fourth-year students who studied during 2014-2016, and one month after they completed the workshop. In 2019, graduates received the same questionnaire via email addresses. Student response rates were 31 percent prior, 20 percent after completing the advanced workshop and 62 percent for graduates.

The questionnaire was based on the Generalized Self-Efficacy scale (Chen, Gully, & Eden, 2001). Self-efficacy assessment included three dimensions: magnitude, strength, and generality (Bandura, 1977). Magnitude referred to the difficulties people face in changing their behaviors. Strength related to their certainty in their ability to take an action, and generality asked about levels of self-efficacy beliefs and positive relationships towards these behaviors over time. In order to modify the research questionnaire to the original topics of the Generalized Self-Efficacy scale**,** the investigatorsused previous research instrument of Sulmasy and colleagues (1990). They developed a perceived confidence scale and use it to evaluate medical residents ethical confedence based on the Generalized Self-Efficacy scale. Moreover, Sulmasy and colleagues (1990, 1993, 1995, 1997, 2005), reported on high and consistent internal reliability of the instrument; more than 0.80 in different studies. Other various prior studies also tested this questionnaire and found a Cronbach Alpha of 0.87 and the content was found to be valid with high predictability (Chen et al., 2001). The Hebrew translation has been used since 1998.The aouthers received content validity for the questionnaire by counaslting additional scholars experts from the collage.

The questionnaire consisted of 17 statements on two main topics, first - personal ability – behaviors (magnitude and strength), for example: "Usually, when I face an ethical problem related to work, I do not leave it until I reach a solution", or "Usually, I give up and do not complete steps or moves related to dealing with an ethical dilemma at work".

Second - belief in one's general ability to cope with ethical dilemmas (generality), statements for example included: "I trust myself when dealing with ethical dilemma", or "I believe there is nothing to do when the task of dealing with ethical dilemma is too complex".

. Respondents were requested to rate their agreement on a scale of 1 to 5 [1= totally disagree (high self-efficacy), 5 = fully agree (low self-efficacy)]. Aggregated mean variables represented the overall self-efficacy of students before and after the advanced workshop, and that of graduates.

Two questions were added to the questionnaire distributed to students after the advanced workshop and graduates that evaluated general self-efficacy in relation to the workshop; "In your opinion, to what degree on a scale of 1-10 (1 means very little and 10 very much) did the workshop contribute to your ability to generally cope with ethical dilemmas?” Moreover, "On a scale of 1-10, to what degree, after the workshop, do you feel more comfortable coping with ethical dilemmas?" The authors added four additional items to the graduates' questionnaire. It included: (1) frequency of encountering situations involving ethical dilemmas; (2) duration of working as a nurse; (3) field of work (hospital/community); and (4) a question related to nurses working with them: "compared to other nurses, on a scale of 1-10, to what degree do you feel that you are able to cope with ethical dilemmas?". All questionnaires queried socio-demographic variables, including gender, age, marital status, religiosity, ethnicity (Jews/Arabs) and working status.

***Ethical Considerations***

The Max Stern Yezreel Valley College Committee approved the study. In order to ensure confidentiality and evaluation reliability, students and graduates received information about the fact that participation was voluntary and anonymous, and were asked to sign a consent form. The instructor informed students about the advanced workshop evaluation process before answering the questionnaire. Subsequently, on the last day of the semester, they met again to talk about the aims and educational values of the advanced workshop evaluation.

***Statistical analysis***

T-tests and ANOVA determine the differences between self-efficacy before and after the advanced workshop, and among graduates. ANOVA test assessed the factors associated with self-efficacy. SPSS (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp) was used for the data analyses and p < 0.05 was considered to be significant.

**Results**

***Nursing students*** – 127 students answered the questionnaire, 79 percent before the advanced workshop and 52 percent after. Most were female, their age ranged between 31and 40 and were single. Students belonged to two ethnic groups, Arabs and Jews; more Arab students answered the questionnaire before and after the advanced workshop. Few participants in the before and after advanced workshop groups were religious, and 45 percent of students worked in the health system (Table 2).

***Graduates*** -152 nurses answered the questionnaire, most were female. The majority was in the 21-30 years age group and was married. Fifty three percent of them were Jews. Only 15 percent were religious, and the remainders were traditional and secular. All participants reported they were working as nurses, and most worked in hospitals. On average, graduates had been working for 3.4 years. Table 2 presents the demographic characteristics.

A combined mean score was computed for the questions representing the overall self-efficacy variable; and the two dimensions of self-efficacy; personal ability - behaviors and beliefs in their ability to deal with the ethical dilemma. The data analysis revealed higher levels of overall self-efficacy after the advanced workshop, compared to before the advanced workshop. The mean score was even higher for the graduates; differences between the three groups (before, after and graduated) were statistically significant. Table 3 presents results.

Significant differences were found between the two dimensions of self-efficacy (personal ability - behaviours and ability to cope with ethical dilemmas), and among the three groups (before, after and graduated). Table 4 presents results.

Mean scores were higher for students after the advanced workshop compared to graduates regarding their ability to cope with ethical dilemmas. In addition, asking about their comfort level in coping with ethical dilemmas, students after the workshop and graduates reported on higher mean scores compared to students before. Table 5 presents results for these and other questions.

Among the three groups, no significant relationship was found between overall self-efficacy and personal self-efficacy behaviors, and beliefs in respondents' abilities to cope with ethical dilemmas relative to socio demographic variables, except for marital status. Married graduates reported higher levels of overall self-efficacy (r -.203, p<0.012).

**Discussion**

**Self-Efficacy and Coping with Ethical Dilemmas**

The current study aimed to conduct a follow-up evaluation of nursing students’ and graduates’ competency in coping with ethical dilemmas, through the use of the generalized self-efficacy scale.

The results indicate that students' self-efficacy in coping with ethical dilemmas increased after the advanced workshop and among graduates. While graduates reported lower scores regarding the contribution of the advanced workshop on their ability to cope with ethical dilemmas compared to scores after the workshop, they still felt comfortable and were more able to cope with ethical dilemmas compared to other nurses who worked with them.

The results positively contribute to students’ and graduates’ personal ability to "bring out the ethical practice (behaviors)", as mentioned by Gallagher (2006), and to strengthen their competence perception and ability to cope with ethical dilemmas, "ethical perception". As noted, according to Bandura (1977), self-efficacy is a person’s confidence that brings him to a certain behavior and results in a certain outcome. Students’ and graduates’ self-efficacy made them feel more confident to cope with ethical dilemmas. Coping with ethical dilemmas refers to the ability to conduct an analysis of ethical dilemmas, find solutions to the problem, and make an ethical decision.

**Ethics Education**

The described advanced workshop is part of the ethics education curriculum of the nursing department in (name) College. It aims to provide an additional opportunity to practice the knowledge and tools they had acquired through their clinical experiences. Previous research has emphasized the importance of ethics education in achieving ethical competence, increasing nurses’ confidence (Grady et al., 2008; Wocial, 2008), and helping to reduce the number of moral stress incidents (Lang, 2008).

Previous studies found that the increasingly complex nature of healthcare systems has increased exposure of nursing students to ethical dilemmas in clinical practice in various ways (for example Erdil & Korkmaz, 2009). In addition, facing an ethical dilemma results in moral distress feelings among nurses, negatively affecting them and their patients (Godfrey & Smith, 2002; Laabs, 2005; Laabs, 2007). The addition of ethical education in the nursing curriculum is important, not just for students but also for educators. Epstein & Carlin (2012) documented that ethics education enables educators to better understand their students' perspectives of ethical issues. The current research focuses on students and graduates, more research is recommended among educators.

**Contemporary Pedagogical Approach**

Nursing education has used narrative pedagogy for over ten years (Brown, Kirkpatrick, Mangum, & Avery, 2008; Swenson & Sims, 2000). Narrative pedagogy includes reflecting on everyday practices and context, and it can bring students to a better understanding of the policies and structures of the healthcare system (Doane, Pauly, Brown, & McPherson, 2004). The integration of clinical narrative stories must be conducted in an effective way, as close to reality as possible. Additionally, using real clinical narrative stories, as described in the ‘ethics-in-the-round’ approach (Hutchinson et al., 2014); can give learners an opportunity to discuss situations based on clinical experiences, thus improving their ethics education and competence. The described advanced workshop is based on the contemporary pedagogical approach in ethics education and includes analyzing cases,discussions in subgroups,and simulations, all integrated with lectures as recommended by previous researches (Kalaitzidis & Schmitz, 2012; Dinç & Görgülü, 2002; Lin, Lu, Chung, & Yang, 2010; Gropelli, 2010; Tuxbury, Wall Mccauley, & Lement, 2012; Vanlaere, Coucke, & Gastmans, 2010). Relying on the contemporary pedagogical approach apparently contributes to the raising of self-efficacy among students and graduates.

**Israeli Nurses Association Code of Ethicsand Israeli Patients' Rights Law**

The Israeli Nurses Association Code of Ethics(2004)and the Israeli Patients' Rights Law (1996) present a set of ethics, values, and guidelines for students and professionals. Practicing the code and law principles can provide additional value to the advanced workshop, and may contribute to raising levels of self-efficacy. Beckett, Gilbertson, and Greenwood (2007) found that, although codes guide professionals toward ethical behaviors, in fact, they do not always follow it. For that, researchers suggest that educators have a crucial role in educating nursing students about ethical values and principles (Calhoun & Strasser, 2005; Leners, Roehrs, & Piccone, 2006).

**Professional Experience and Self-Efficacy Coping with Ethical Dilemmas**

Professional experience in the field of nursing raises the levels of self-efficacy in coping with ethical dilemmas (Pajares & Urdan, 2006; Soudagar, Rambod, & Beheshtipour, 2015). The graduates in the study reported that they had been already working for two to six years, and they reported high levels of self-efficacy coping with ethical dilemmas. However, the data analysis did not find any relationship between self-efficacy and duration of work as a nurse. The fact that most of the graduates have a little experience and had worked for two to three years, can explain this result. Further research is needed.

**Limitations**

The research has some limitations. It measured perceptions of ethical competence using the standardised self-efficacy questionnaire when other research reported different instruments. Koskenvuori et al (2019) for example reviewed 17 published studies on healthcare professionals’ ethical competence and found that all authors of quantitative studies developed self-instruments. The use of the standardised self-efficacy questionnaire may not be appropriate for measuring competency and perhaps another one might be more appropriate. Moreover, this study serves as a case study for one nursing department at (name) College. It is recommended to expand the research to other nursing schools in Israel and elsewhere. On the other hand, the fact that the research compared between students and graduates who had completed the advanced workshop could perhaps reinforce our findings. Another problem may be acquiescence bias, defined as providing affirmative answers regardless of the question (Rammstedt, Goldberg, & Borg, 2010). One of the methods used to overcome this bias was presenting items in a bipolar way, with explanations at both ends of the scale (Hinz, Michalski, Schwarz, & Herzberg, 2007). Furthermore, the questionnaire was delivered to the students before they were invited to the advanced workshop evaluation and one month after the end of the semester, when the instructor provided students with information about the aims and educational values of the workshop evaluation.

To conclude, the advanced workshop is likely to promote the effectiveness of nursing students' ethics education and enhance their self-efficacy in coping with ethical issues as students and nurses in the healthcare system.

It can be suggested that this type of advanced workshop is essential to strengthen students’ and graduates’ competence perceptions. It can provide an additional educational tool that complements the basic ethics educational courses in nursing schools.

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**Tables**

Table 1: Advanced workshop content description

|  |  |  |  |
| --- | --- | --- | --- |
| Mission | Written Text | Discussion | Analysis |
| Students were asked to tell an ethical story to a colleague who listened and asked specific questions. The focus was on the characters in the story, the plot, and feelings that came up. | Every student had to write a transcript of their ethical story. | In group work, students presented their ethical stories for discussion and group processing. The story could be presented in creative ways such as acting, film, etc. | The student analyzed their ethical story based on the Israeli Nurses Association Code of Ethics" and "The Israeli Patient's Rights" law. |
| Students` stories are analyzed as follows:   1. What did the student know: Information needed for the ethical story, available to the student or lacking, and where students could obtain the missing data. 2. Theoretical analysis: What were the conflicting values? Students were asked to analyze the ethical story in light of Utilitarianism theory (greatest happiness for the most people) and Deontology theory (moral duty). 3. What were the dominant values in which the story took place?  * Social values. * Professional values according to the Israeli Nurses Association Code of Ethics. * Organizational values (hospital or healthcare clinics). * Personal values.  1. What were the chosen solutions? What was done? What "price" was paid in each solution? What would you do if faced with a similar ethical dilemma again? | | | |

Table 2: Demographic characteristics of the students and graduates

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Category | Before N (%) | After N (%) | Graduates N (%) |
| Gender | Female | 61 (84) | 38 (76) | 115 (76) |
| Male | 12 (16) | 12 (24) | 37 (24) |
| Total | 73 (100) | 50 (100) | 152 (100) |
| Age | 21-30 | 1 (3) | - | 104 (68) |
| 31-40 | 73(97) | 40 (80) | 41 (27) |
| 41-50+ | - | 10 (20) | 7 (5) |
| Total | 74 (100) | 50 (100) | 152 (100) |
| Marital status | Married/lives with partner | 26 (36) | 24 (50) | 108 (71) |
| Single | 48(64) | 24 (50) | 44 (29) |
| Total | 74 (100) | 50 (100) | 152 (100) |
| Ethnicity | Jews | 27 (39) | 18 (36) | 79 (53) |
| Arabs | 41 (59) | 31 (62) | 71 (47) |
| Others | 2 (2) | 1 (2) | - |
| Total | 100 (71) | 100 (50) | 100 (150) |
| Religiosity | Secular | 32 (46) | 27 (56) | 62 (41) |
| Conservative | 33 (48) | 13 (27) | 66 (44) |
| Religious/high observance | 4 (6) | 8 (17) | 23 (15) |
| Total | 69 (100) | 48 (100) | 151(100) |
| Working as a nurse | Yes | 30 (45) | 22 (45) | 152 (100) |
| No | 37 (55) | 27(55) | - |
| Total | 67 (100) | 49 (100) | 152(100) |
| Duration of work in years | 2 |  |  | 39(26) |
| 3 |  |  | 48 (32) |
| 4 |  |  | 33 (22) |
| 5 |  |  | 28 (18) |
| 6 |  |  | 4 (3) |
| Total |  |  | 152 (100) |
| Work location | Community |  |  | 27 (18) |
| Hospital |  |  | 149 (82) |
| Total |  |  | 149 (100) |

Table 3: ANOVA result on significant differences in overall self-efficacy in coping with an ethical dilemma - before (first time point) and after (second time point) the advanced workshop, and among graduates (third time point)

|  |  |  |  |
| --- | --- | --- | --- |
| Groups | Mean (STD) | F | Sig |
| Before (N-75) | 2.42 (0.34) | 141.3 | 0.000 |
| After (N-50) | 2.13 (0.24) |
| Graduated (N-152) | 1.58 (0.40) |
|  | Mean Difference\* |  |  |
| Before - After | 0.28 |  | 0.000 |
| Before - Graduated | 0.84 |  | 0.000 |
| After - Graduated | 0.55 |  | 0.000 |

\* PostHoc - Scheffe

Table 4: ANOVA Results of each dimension of self-efficacy - personal ability – behaviors and believes in ability before (1st time point) and after (2nd time point) the advanced workshop, and of graduated nurses (third time point)

|  |  |  |  |
| --- | --- | --- | --- |
| **Ability measure**/group | Mean (STD) | F | Sig |
| **Personal ability - behaviors** | | | |
| Before (N-75) | 2.47 (0.39) | 78.77 | 0.000 |
| After (N-50) | 2.01 (0.33) |
| Graduated (N-152) | 1.55 (0.450) |
|  | Mean Difference\* |  |  |
| Before - After | 0.26 |  | 0.003 |
| Before - Graduated | 0.71 |  | 0.000 |
| After - Graduated | 0.45 |  | 0.000 |
| **Beliefs in your ability** | | | |
| Before (N-75) | 2.66 (0.49) | 133.13 | 0.000 |
| After (N-50) | 2.37 (0.27) |
| Graduated (N-152) | 1.66 (0.48) |
|  | Mean Difference\* |  |  |
| Before - After | 0.29 |  | 0.003 |
| Before - Graduated | 0.99 |  | 0.000 |
| After - Graduated | 0.70 |  | 0.000 |

\* PostHoc - Scheffe

Table 5: Means, Standard Deviations and T test - evaluation of the advanced workshop among students (after) and graduates

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | On a scale of 1-10 how much did the advanced workshop contribute to your ability coping better with ethical dilemmas? | | | On a scale of 1-10, to what degree do you feel more comfortable coping with ethical dilemmas after the advanced workshop? | | | Compared to other nurses, on a scale of 1-10, to what degree to do you feel that you are able to cope with ethical dilemmas? | | |
| **Group** | Min | Max | Mean (STD) | Min | Max | Mean (STD) | Min | Max | Mean  (STD) |
| After  (N-50) | 4 | 10 | 8.04 (1.89) | 3 | 10 | 7.82 (1.92) | - | - | - |
| Graduated (N - 151) | 1 | 10 | 5.71 (2.68) | 1 | 10 | 7.25 (1.84) | 1 | 10 | 7.39  (1.75) |
| **T - Test** | T(199) = 5.66  Sig – 0.000 | | | T(199) = 1.95  Sig – 0.059 | | | - | - | - |