Nursing students' attitudes regarding euthanasia due to unbearable mental suffering

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Nursing Students' Attitudes Regarding Euthanasia Due to Unbearable Mental Suffering: Cross-sectional Study using the adapted and validated Euthanasia Attitude Scale

ABSTRACT

Aim: To explore final year nursing students' attitudes towards euthanasia due to unbearable mental suffering by using the adapted and validated Euthanasia Attitude Scale.

Design: Cross-sectional survey.

Methods: Explorative, descriptive cross-sectional study conducted using an e-mail survey between October 2020 and March 2021 by a sample of final-year baccalaureate nursing students (n=273) from eight of the eleven Flemish university colleges. The actual questionnaire contains 21 questions and was developed based on a consensus reached following independent translations. The psychometric properties of the Euthanasia Attitude Scale were assessed, including reliability and validity. Independent-Samples Mann-Whitney U Test was used to investigate relation between demographic and education-related data, and domain and total score of the UMS-EAS-NL. This study received ethical approval from the Ethical Committee of the University Hospital Brussels, Belgium.

Results: McDonald's Omega was 0.838 for the total Euthanasia Attitude Scale scores, supporting the validity of the questionnaire. A statistically significant difference in 'Naturalistic beliefs' score was found relating to year of birth. There are clinically important results between those students who have been involved in euthanasia and those who have not.

Conclusions: Most of the final-year nursing students supported the possibility of patients' access to euthanasia due to unbearable mental suffering. In order to monitor adequate care, it is necessary to prepare nursing students adequately for this complex matter.

Impact: To date, no large-scale study has examined nursing students' attitudes toward euthanasia because of unbearable mental suffering. It is expected that nursing students may be confronted with such a euthanasia request during an internship, or later in their professional career, in countries where euthanasia is legal. Students showed a high acceptability towards UMS-euthanasia. Clinically significant differences were found for students who had ever been involved in euthanasia.

No Patient or Public Contribution.

Keywords: End of Life; Nursing Students; Mental Health; Attitudes.

INTRODUCTION

In euthanasia, drugs are administered to the patient who suffers unbearably due to an incurable disease, with the explicit intention of ending the patient's life at their explicit request (Bellon et al., 2022). To date, euthanasia is legal in Colombia, Canada, the Australian states of Victoria and Western Australia, New Zealand, Austria, Belgium, the Netherlands, Luxembourg, and Spain (Mroz et al., 2021; Rada, 2021). Switzerland and ten states within the United States of America (California, Colorado, District of Columbia, Hawaii, Maine, Montana, New Jersey, Oregon, Vermont, Washington) rely on legalised physician-assisted suicide which means that a patient is assisted to end their life by supplied life-ending drugs, but the patient has to take these drugs themselves (Mroz et al., 2021). Both euthanasia and assisted suicide are medical-assisted dying practices. In all countries, the unbearable suffering of the involved patients must be of a kind that cannot be alleviated anymore by drugs or alternative therapies (Calati et al., 2021). Most countries in which medical-assisted dying is legal further impose that the unbearable suffering must be caused by a terminal disease. This is not the case in Switzerland, Spain, Belgium, the Netherlands, or Luxembourg. The constitution of these countries clearly states that medical-assisted death can also be requested by patients unbearably suffering due to a non-terminal disease. Such disease may be of a physical and/or mental nature (Calati et al., 2021). This paper specifically focuses on euthanasia because of unbearable mental suffering due to a mental disease (UMS-euthanasia).

Background

Over the years, an increasing body of scientific literature on the topic of euthanasia has been developed. It is notable that, even though studies regarding nurses' attitudes towards and involvement in euthanasia have increased, they still remain relatively scarce. These nursing studies reveal that, in general, nurses' opinions regarding the acceptability of euthanasia substantially differ between countries. In countries where euthanasia is legal, a higher degree of acceptance towards euthanasia can be observed than in countries where euthanasia is illegal (Naseh et al., 2015; Cayetano-Penman et al., 2021). When we examine nursing students and their attitudes towards euthanasia for terminal patients, similar results emerge as for working nurses (Malary et al., 2019; Yildirim, 2020). When focusing exclusively on UMS-euthanasia, only two nursing studies could be identified (De Hert et al., 2015; Demedts et al., 2018). Both studies reveal a high degree of acceptability of psychiatric nurses towards UMS-euthanasia, be it under strict conditions, and only for certain types of patients. For example, there is a greater degree of acceptability towards UMS-euthanasia in patients with psychotic disorder,

personality disorder, or mood disorder, than those with addiction or dissociative disorder (De Hert et al., 2015; Demedts et al., 2018). Since UMS-euthanasia is legal in Belgium, The Netherlands, and Luxemburg, it is expected that also nursing students may be confronted with an UMS-euthanasia request during an internship, and later in their professional career. During their internship, Belgian nursing students can carry out all the techniques taught to them, provided that they are supervised by the nurse, including an in-depth conversation. Therefore, it is important to explore their attitudes towards this form of euthanasia so that targeted actions can be taken to better support them during their training. A pilot study by Demedts et al. (2022) has provided an initial impetus to see what findings are found among nursing students. However, this was a monocentric pilot study with a limited response rate and number of respondents. This study is therefore the first large-scale study to examine nursing students' attitudes toward UMS-euthanasia by using an adaptation of the existing Euthanasia Attitude Scale, whose use for this type of euthanasia will also be validated.

THE STUDY

Aims. The aim of this study was to explore Flemish (Belgium) final year nursing students' attitudes towards euthanasia due to unbearable mental suffering by using an adaptation of the Euthanasia Attitude Scale. The Euthanasia Attitude Scale needed to be validated for this type of euthanasia as well as for its Dutch translation.

Design. Cross-sectional survey.

Sample/Participants. A total of eleven Belgian Dutch-speaking university colleges providing nursing studies exist in Belgium. All final-year bachelor nursing students at these university colleges were invited by the researchers to participate in this study that took place between October 2020 and March 2021. Eight university colleges were willing to distribute the link to the questionnaire of this study to their 670 final-year students by e-mail. The other three university colleges refused to participate in the study. For two of these universities, no reason was stated; for the third one, their students were already involved in other research studies, and the management declined participation. All participants gave their informed consent before participating in the study. This study ensured total anonymity of the participants by using an anonymous survey link to the online questionnaire in the mail (Qualtrics^{xm}). Three reminders to participate in this questionnaire were sent to all students (after 1 week, after 2 weeks and after 4 weeks). The students who had already participated were thanked for their participation and could ignore the reminders.

Data collection. Nursing faculties were physically closed at the time of data collection because of Covid-19 restrictions, we decided to transform our survey into an online questionnaire instead of a paper survey as previously envisaged. The questions in our study are based on the Euthanasia Attitude Scale questionnaire (Tordella & Neutens, 1979). From their original pool of 74 statements, they eventually selected 21 questions after a group of 19 judges, all experts in the area of thanatology, rated the statements. These 21 questions statistically represented the greatest consensus of the group of judges. Tordella and Neutens (1979) reported an internal consistency index of 0.84 (Cronbach alpha) after a one-week test-retest analysis. Rogers (1996) adjusted the questionnaire by editing the items for gender-biased language and reported an internal consistency of 0.85. Another important addition was made by Chong and Fok (2004). Using factor analysis, they grouped the questions into four domains: ethical considerations (eleven questions), practical considerations (four questions), treasuring life (four questions), and naturalistic beliefs (two questions). Additionally, Chong and Fok (2004) modified the original dichotomous response to a 5-point Likert scale option

for each statement, including such categories as: ‘strongly agree’, ‘agree’, ‘neutral’, ‘disagree’ and ‘strongly disagree’. Thus, since there are 21 questions with item scores in between 1 and 5, the total sum of scores could range from 21 to 105, with higher scores indicating higher acceptability of euthanasia. The scores of negatively formulated questions are reversed, including questions 1b, 1d, 1g, 1i, 2c, 3a, 3b, 3c, 3d, and 4b (see Table 2). Each domain contains at least one negatively formulated question. Besides the Euthanasia Attitude Scale questions, also *demographic and education-related data* were gathered: gender, year of birth, previous experience in a mental health placement and whether the student had ever been involved in a euthanasia procedure.

Ethical considerations. This study was submitted to and approved by the ethics committee of the University Hospital Brussels (B.U.N. 1432020000138/I/U). All participants were informed in advance of the purpose of this study, what was expected of them, its voluntary nature, that anonymity was guaranteed, and no remuneration would be received. Completing and returning the questionnaire constituted informed consent. To emphasize the voluntary nature, the questionnaire was distributed by the structural researcher of the program, not by the program director or any of their teachers.

Data analysis. The reliability of the questionnaire was estimated, both using the Cronbach's alpha as well as the McDonald's Omega. Cronbach's alpha (α) was chosen since it was used in the previous studies and thus allows for comparison. However, because the implied assumption of tau-equivalence is highly questionable, following Hayes and Coutts (2020), the McDonald's Omega (ω) is also included as a measure of reliability. Missing values do not exist and therefore do not affect the analyses. Attitudes were described by calculating scores of respondents responding affirmative on a 5-point Likert scale (from 1. strongly disagree to 5. strongly agree) with regard to all 21 statements of the UMS-EAS-NL. Further also the total score, mean, and standard deviation were calculated. Independent-Samples Mann-Whitney U Test was used to investigate relation between demographic and education-related data on the one hand, and domain and total score of the UMS-EAS-NL on the other hand. Statistical analyses were performed using SPSS® 27.0. The dataset can be consulted at Mendeley.

Validity, reliability, and rigour. The Euthanasia Attitude Scale was translated to Dutch, while considering that the main aim of this study was to investigate attitudes towards UMS-euthanasia instead of towards euthanasia in general, originally focused on by Euthanasia Attitude Scale. This was done, independently by three experts from different fields, each contributing their own expertise. The first one, a translation expert is a native English speaker

who has completed his education in Dutch. He has a Master of Arts degree in translation and is currently employed as a sworn translator in Dutch to English. The second one, a healthcare education expert, obtained a Master of Sciences in nursing and midwifery, and has been employed as a senior lecturer at a university college, teaching the target group, for decades. The third expert is a PhD in Health Sciences with a dissertation in end-of-life care. After these experts submitted their Dutch translations, they were reviewed by three authors of this study who combined the questions into a first proposal questionnaire. Next, the questionnaire was resubmitted again to the three experts for feedback. Their feedback was then revised again by the authors. After four revisions, a final consensus was reached. A final fifth round was necessary after feedback of the ethics committee of the University Hospital Brussels whereby one question was adjusted (question 2a). The final version is named the UMS-EAS-NL questionnaire and consist of 21 questions in four domains: ethical considerations (eleven questions), practical considerations (four questions), treasuring life (four questions), and naturalistic beliefs (two questions). The UMS-EAS-NL can be found in the appendices.

RESULTS/FINDINGS

After three reminders, 273 of the 670 students completed the questionnaire (response rate of 41%). Ninety-five percent of the participants (n=162) were born between 1997 and 1999 (md=1998, mo=1999). The vast majority of respondents are women (n=237, 87%). Eight out of ten students (n=224, 82%) had already completed a mental health internship, and 154 students (56%) had already been involved in euthanasia (not specified to UMS-euthanasia). This could be either the request, the preparation, the act, and/or the aftercare in the role of a nursing trainee or as a relative.

Regarding the validation of the EAS-UMS-NL, the homogeneity index ranged between 0.090 and 0.721. There were two items with very low corrected item-total correlation scores: item 1h “UMS-euthanasia should be applied when a mentally ill person is out of treatment.” (Corrected Item-Total Correlation: 0.090, Cronbach's Alpha if Item Deleted: 0.822) and item 4a “A person should not be kept alive by machines.” (Corrected Item-Total Correlation: 0.108, Cronbach's Alpha if Item Deleted: 0.818). The Cronbach’s alpha was 0.812 and the McDonald's Omega was 0.838 for the total EAS scores.

Please insert Table 1. *Means (M), Corrected Item-Total Correlation, and Cronbach's Alpha if item is deleted, of the total EAS scores. (N=273)*

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was .898 and the Bartlett's Test of Sphericity 2180.787 ($p<.001$). Six factors were initially presented in the factor analysis. These six factors explained 63.733% of the total variance. Varimax rotation and eigenvalue greater than 1 were entered. Factor 5 (4b) and factor 6 (4a) contain only one item and both factors had an eigenvalue close to 1 (factor 5: 1.051; factor 6: 1.003). The scree plot suggests a 2-factor model with 18 items who load on factor 1 and three items who load on factor 2 (1h, 1j, 2b), explaining 41.894% of the total variance. Thus, we end up with four factors explaining 53.953% of the total variance.

The answers for the individual items of the UMS-EAS-NL are described in detail (Table 2). Most nursing students were supportive towards the acceptability of UMS-euthanasia. Nursing students indicate that euthanasia should not only be limited to these patients with unbearable suffering due to a terminal illness (89%). A great majority of nursing students stated that a person with a mental illness has the right to decide to die (85%), as well as UMS-euthanasia should be accepted in today’s society (84%). They believed that UMS-euthanasia can be helpful at the right time and place (80%). Regarding the legal status of UMS-euthanasia,

students indicated that UMS-euthanasia may be legal (88%), but that taking away a human life is wrong regardless of the circumstances (85%). However, UMS-euthanasia can be an opportunity to die with dignity (88%), and you do not have to be over 75 years old to do so (92%).

Please insert Table 2. *Attitude towards UMS-euthanasia of final-year nursing students in Flanders, 2021. (N=273)*

Independent-Samples Mann-Whitney U Test found a statistically significant difference in scores for 'Naturalistic beliefs' according to year of birth, $U(N_{born \leq 1999}=181, N_{born>1999}=92,) = 7104.500$, $z = -2.055$, $p=.040$. No statistically significant difference in total questionnaire score or domains was found for gender differences, year of birth, ever involved in euthanasia or for those who had a previous experience in a mental health placement. Clinically important differences were found in between those ever involved in euthanasia and those not.

Please insert Table 3. *Independent-Samples Mann-Whitney U test between dimension of EAS and demographic, education-related data. (N=273)*

DISCUSSION

The objective of this study was to explore final-year nursing students in Flanders (Belgium) attitudes towards UMS-euthanasia. Consequently, we had to adapt and validate the Euthanasia Attitude Scale (EAS) towards euthanasia because of unbearable mental suffering due to a mental disease (UMS-euthanasia). Validation of this questionnaire is essential because, to our knowledge, no validated instruments exist that specifically measures attitudes towards UMS-euthanasia. Since UMS-euthanasia is legal and practised in Belgium, it is important to explore the attitudes of nursing students because they will be confronted with UMS-euthanasia during their internships and their professional career as a nurse. Most of the nursing students supported the possibility of UMS-euthanasia. Clinically important differences were found between those students who had ever been involved in euthanasia and those who had not. So targeted actions must be taken to better support them during their training.

In addition to their usual online classes and internships, a total of 273 students were willing to participate in our survey, which accounts for a 41% response rate. This is considered reasonably good for an online survey (Saleh & Bista, 2017) and particularly amidst the Covid-19 pandemic. Our a priori defined sample was estimated on 245 responses, considering the total population of 670 students. A ratio of 13% - 87% by gender (m/f) is equally in line with the general ratios in Belgian nursing programmes (14% - 86%). The age is also in line with what can be expected according to the year of birth of the final-year student since this study was conducted in 2020 and 2021. A majority of the students (82%) had already done an internship in mental health care, which is explained by the obligation for students to come into contact with psychiatric patients during their first three years of training. Most schools opt for an internship, but some university colleges choose a project week. Taking all these data together, we can conclude that our sample is representative of the nursing students in Flanders. There are university colleges represented from both networks (catholic or laic origin) and at least one university college is represented from each Flemish province. We have no reason to assume that the non-participation of three college universities would have a different outcome.

As previously indicated in the methods section, the questions of this tool were independently translated by three experts from different fields: A native English speaker, a healthcare education expert and an end-of-life care specialist. Both the healthcare education expert and end-of-life care specialist confirmed the face-validity of the proposed items. The translation

was obtained by consensus after five rounds. Looking at the internal consistency of the UMS-EAS-NL, we obtain a Cronbach's alpha of 0.812. This score is in line with the original study (Tordella & Neutens, 1979) (α=.84), as well as the one obtained previously by authors in the Chinese version (Tang et al., 2010) (α=.84), and in the Spanish version (Onieva-Zafra et al., 2020) (α=.87). A Cronbach's alpha of 0.812 is generally acceptable, adequate, and robust, and indicates that the adopted scale is fit for purpose. McDonald's Omega is another reliability coefficient which is similar to Cronbach's alpha and has the same interpretation and reporting (Hayes & Coutts, 2020). However, McDonald's Omega remains unbiased with congeneric items with uncorrelated errors because it considers the strength of the association between items and constructs, as well as item-specific measurement errors. This is because factor loadings are allowed to vary, in contrast to Cronbach's alpha, where item factor loadings on a single target factor are equal (Watkins, 2017). As a result, McDonald's Omega provides more realistic estimates of true reliability when items vary in their relation to the underlying dimension. In our case, McDonald's Omega was 0.838 and therefore indicates a high internal consistency. There are two items with very low corrected item-total correlation scores: item 1h (0.090) and item 4a (0.108). A low corrected item-total correlation score indicates that this question is not really related to the construct it is assumed to measure (Zijlmans et al., 2019). It should therefore be considered whether this question should be kept. Extensive analyses have already been carried out on the EAS and these have kept the existing 21 questions despite a lower corrected item-total correlation score on a question (Onieva-Zafra et al., 2020). While we propose to keep these items despite their poor psychometric properties, for the purpose of comparison with the translations in other languages, our analysis clearly indicates that they are not informative. In terms of factor analysis, six factors were initially presented. After analysis, we end up with the same number of factors as in the previous studies, namely four (Chong et al., 2004; Onieva-Zafra et al., 2020). These four factors explain 53.953% of the total variance which is comparable to previous studies where percentages were found between 52.79% and 56.74%. However, the items that load on the different factors are different than those reported in those studies. This can possibly be explained by the fact that the translation into Dutch involves different wording, but also that euthanasia was defined as UMS euthanasia. This means that, in addition to the language differences, there are also differences in terms of content because some questions were given a different context. However, the validity of the questionnaire was not compromised. When this study can be conducted with larger numbers, we may notice a shift in the factors. Furthermore, the previous studies were conducted in a country where euthanasia is not legal,

whereas it is in Belgium. This may also change the content of the factors. Using this information, a new model might be constructed which's properties will be examined by means of a new confirmatory factor analysis, but this was not the ultimate aim of this study.

As indicated earlier, Belgium is one of the countries in which euthanasia has been legalised (Mroz et al., 2021). Besides euthanasia because of unbearable suffering due to a terminal disease, euthanasia for unbearable suffering due to a non-terminal disease is also permitted under strict conditions, and as such UMS-euthanasia falls under the regulation for unbearable suffering due to a non-terminal disease. The figures regarding the number of euthanasia carried out in Belgium in 2020 (n=2444) show that 0.9% (n= 21) were considered UMS (Belgian Ministry of Justice. Euthanasia – Numbers of the year 2020, 2022 March 31). This indicates that despite the legal option, UMS-euthanasia is still rare. This may be explained by the strict regulation as well as the caution that must be exercised in the case of unbearable suffering due to a non-terminal disease. Although legally possible, specific problems arise in assessing the suitability of patients requesting euthanasia due to psychological suffering caused by a psychiatric disorder. The level of unbearability is less comprehensible than in the case of a terminal illness. In addition, clarifying the competence of the patient is complex because the wish to die can be part of the psychiatric pathology. Finally, assessing mental pain has a shorter tradition than measuring pain in physical illness (De Hert et al., 2015). A descriptive study of 100 Belgian patients who requested UMS-euthanasia indicates that thirty-five patients were granted euthanasia. It is therefore not the case that a request is automatically approved despite its legality (Thienpont et al., 2015).

Looking at the results of our study, it is notable that the majority of final-year nursing students are supportive of the possibility of UMS-euthanasia. They indicated that euthanasia should be possible both for patients with unbearable suffering due to a terminal illness and for those with unbearable mental suffering (mostly not due to terminal illness). What is striking about these results is that a large majority (82%) states that UMS-euthanasia should be accepted by society. However, this is not yet the case in Belgian society. This could be illustrated by the Tine Nys case (a local lawsuit) whereby three doctors where accused of murder by poisoning in the case of a UMS-euthanasia procedure but were not subsequently condemned (Day, 2018). Nevertheless, this case has caused a stir in the national politics and media. UMS-euthanasia should be approached with caution due to the difficulties of unbearable mental suffering, such as remaining therapeutic options, capacity to act, awareness, and estimating the degree of pain. This is also reflected in two studies on attitudes

of working psychiatric nurses towards UMS-euthanasia (De Hert et al., 2015; Demedts et al., 2018). Despite the complexities involved in unbearable mental suffering, final-year students show a high degree of acceptability towards UMS-euthanasia, showing clinically important, but no significant differences between those students who had ever been involved in euthanasia and those who had not. This finding is important because it suggests that a previous experience with euthanasia does not influence the attitudes towards UMS-euthanasia. This can be explained by the fact that generations change behaviours, attitudes, and reasoning through their own experiences (Onieva-Zafra et al., 2020.) Furthermore, the law in Belgium has existed for 20 years, which makes euthanasia more established (Mroz et al., 2021). We cannot compare with previous or current generations because there are no studies about UMS-euthanasia and nursing students.

Some students do show some caution. There are less pronounced results when UMS-euthanasia becomes compulsory or whether or not they will support a request. They do not believe that the legislation will lead to abuse (58%) but that it will be implemented correctly (57%). UMS-euthanasia should be limited to a few cases (53%). A slight majority indicates that their job does not necessarily involve sustaining and preserving life (56%), nor prolonging it (61%). Finally, there are less pronounced results regarding natural death as a cure for suffering, nor for mechanical life-support.

In order to monitor adequate care, it is necessary to prepare nursing students adequately for this complex matter. Given that 154 students (56%) in this study had been involved in euthanasia procedures (not specified to UMS-euthanasia) as nursing trainees or as family members, the results suggest that there is a real chance that, as a nurse, one may be involved in euthanasia at some point. It does not matter whether an individual becomes involved in the process as a nurse or as a family member, as one cannot disregard the role of a nurse. In countries where UMS-euthanasia is legal, it is therefore the task of education to prepare nursing students optimally for their future role as a healthcare expert. Especially since differences in attitudes are found between students who were involved in euthanasia and those who were not. The students who had already come into contact with euthanasia had higher averages and thus showed a higher degree of acceptance. De Hert et al. (2015) and Demedts et al. (2018) indicate that psychiatric nurses feel insufficiently prepared for their future task, theoretically and practically. Whereas we can state that some of these nurses had already graduated when the Belgian euthanasia law came into force, this is not the case for the current nursing students. However, Demedts et al. (2022) indicate that current nursing students also

feel inadequately prepared. This instrument and results are only one strand of a larger awareness-raising package. In addition to becoming aware of their own attitudes, students should also be educated in psychopathology, ethics, law, and communication skills. Theoretical education is only part of the solution. The integration of theories, and philosophy behind such a procedure as well as the personal attitude seems essential. Discussion groups are also a way of achieving integration. Depending on the phase of their education, these can be mono or multidisciplinary. Selter et al. (2022) suggest that it may be useful for general practitioners and palliative care providers to talk to professionals from small animal practices. Even though there is a vast difference between euthanasia in humans and in animals, the experience may be somehow similar. After all, small pets are increasingly seen as family members, which makes the experience somehow related. Thus, there is considerable emotional and psychological distress in both cases. Discussion groups in which opinions and experiences are shared can be an added value for both student groups. In addition to discussion groups, simulation training gives students the opportunity to practice in a safe but authentic environment where they are encouraged to learn from mistakes but also to combine all their knowledge and skills. This increases the students' confidence, competence, and knowledge (Vermeulen et al., 2017).

Limitations

This study indicates that more than half of the respondents have already been confronted with euthanasia. It is possible that those students who have already had contact with euthanasia were more inclined to participate than students for whom this topic is less familiar. Therefore, the indicated percentage may give a distorted picture of reality. In order to reach these students, we would have liked to visit the university colleges ourselves to explain the study and distribute the questionnaires. By doing so, we might have obtained a higher response rate with possibly more nuanced figures because the results showed that there were clinically significant differences between students who had already experienced euthanasia and those who had not. However, this was not possible due to the coronation measures in place at the time.

CONCLUSION

The translation of the Euthanasia Attitude Scale into Dutch, as well as its adaptation to UMS-euthanasia, proved that UMS-EAS-NL is a valid and reliable tool with similar psychometric aspects to those found previously. Students showed a high acceptability towards UMS-euthanasia. Clinically important differences were found for students who had ever been

involved in euthanasia. The UMS-EAS-NL questionnaire can be used to assess the attitude towards UMS-euthanasia and can be an added value to the overall education which should focus more on the integration of knowledge and skills regarding UMS-euthanasia.

Conflict of Interest statement

No conflict of interest has been declared by the authors.

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Table 1. *Means (M), Corrected Item-Total Correlation, and Cronbach's Alpha if item is deleted, of the total EAS scores. (N=273)*

		M	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1a	A person with a mental illness has the right to decide to die.	4.15	0.721	0.788
1b	Inducing death for merciful reason is wrong.	3.04	0.340	0.806
1c	UMS euthanasia should be accepted in today's society.	4.14	0.682	0.789
1d	There are never cases when UMS euthanasia is appropriate.	4.11	0.599	0.793
1e	UMS euthanasia is helpful at the right time and place.	4.00	0.604	0.793
1f	UMS euthanasia is a human act.	3.82	0.559	0.795
1g	UMS euthanasia should be against the law.	4.37	0.637	0.793
1h	UMS euthanasia should be applied when a mentally ill person is out of treatment.	3.18	0.090	0.822
1i	The taking of human life is wrong no matter what the circumstances.	4.31	0.686	0.788
1j	UMS euthanasia is acceptable in cases when all hope of recovery is gone.	2.15	-0.486	0.849
1k	UMS euthanasia gives a person a chance to die with dignity.	4.32	0.661	0.790
2a	UMS euthanasia is acceptable if the person is 75 years or older.	1.56	-0.469	0.836
2b	If a mentally incurable person is increasingly concerned about the burden that his or her deterioration of health has placed on his or her family, I will support his or her request for euthanasia.	3.18	0.309	0.808
2c	UMS euthanasia will lead to abuses	3.55	0.502	0.798
2d	I have faith in the Belgian medical system to implement UMS euthanasia properly.	3.48	0.333	0.807
3a	There are very few cases when UMS euthanasia is acceptable.	3.47	0.373	0.805
3b	UMS euthanasia should be practiced only to eliminate physical pain and not mental suffering.	4.37	0.552	0.798
3c	One's job is to sustain and preserve life, not to end it.	3.52	0.583	0.792
3d	One of the key professional ethics of physicians is to prolong lives, not to end lives.	3.66	0.488	0.798
4a	A person should not be kept alive by machines.	3.42	0.108	0.818
4b	Natural death is a cure for suffering.	3.14	0.272	0.810

Table 2. *Attitude towards UMS-euthanasia of final-year nursing students in Flanders, 2021 (N=273).*

		Mdn	IQR	strongly agree N (%)	agree N (%)	neutral N (%)	disagree N (%)	strongly disagree N (%)
Ethical considerations								
1a	A person with a mental illness has the right to decide to die.	4	4-5	101 (37)	132 (48)	22 (8)	15 (5)	3 (1)
1b	Inducing death for merciful reason is wrong.	3	2-4	25 (9)	53 (19)	101 (37)	73 (27)	21 (8)
1c	UMS-euthanasia should be accepted in today's society.	4	4-5	104 (38)	126 (46)	25 (9)	13 (5)	5 (2)
1d	There are never cases when UMS-euthanasia is appropriate.	4	4-5	5 (2)	15 (5)	31 (11)	117 (43)	105 (38)
1e	UMS-euthanasia is helpful at the right time and place.	4	4-5	85 (31)	133 (49)	28 (10)	25 (9)	2 (1)
1f	UMS-euthanasia is a human act.	4	3-4	67 (25)	122 (45)	55 (20)	25 (9)	4 (1)
1g	UMS-euthanasia should be against the law.	5	4-5	3 (1)	9 (3)	20 (7)	93 (34)	148 (54)
1h	UMS-euthanasia should be applied when a mentally ill person is out of treatment.	3	2-4	25 (9)	53 (19)	76 (28)	87 (32)	32 (12)
1i	The taking of human life is wrong no matter what the circumstances.	5	4-5	148 (54)	85 (31)	25 (9)	7 (3)	8 (3)
1j	UMS-euthanasia is acceptable in cases when all hope of recovery is gone.	2	1-3	7 (3)	13 (5)	40 (15)	112 (41)	83 (30)
1k	UMS-euthanasia gives a person a chance to die with dignity.	5	4-5	141 (52)	99 (36)	16 (6)	12 (4)	5 (2)
Treasuring life								
2a	UMS-euthanasia is only acceptable if the person is 75 years or older.	1	1-2	2 (1)	4 (1)	16 (6)	102 (37)	149 (55)
2b	If a mentally incurable person is increasingly concerned about the burden that his or her deterioration of health has placed on his or her family, I will support his or her request for euthanasia.	3	2-4	27 (10)	87 (32)	88 (32)	51 (19)	20 (7)
2c	UMS-euthanasia will lead to abuses.	4	3-4	7 (3)	36 (13)	72 (26)	115 (42)	43 (16)
2d	I have faith in the Belgian medical system to implement UMS-euthanasia properly.	4	3-4	31 (11)	126 (46)	70 (26)	36 (13)	10 (4)
Practical considerations								
3a	There are very few cases when UMS-euthanasia is acceptable.	4	3-4	8 (3)	45 (16)	74 (27)	102 (37)	44 (16)
3b	UMS-euthanasia should be practiced only to eliminate physical pain and not mental suffering.	5	4-5	1 (1)	8 (3)	20 (7)	105 (38)	139 (51)
3c	One's job is to sustain and preserve life, not to end it.	4	3-4	14 (5)	32 (12)	74 (27)	104 (38)	49 (18)
3d	One of the key professional ethics of physicians is to prolong lives, not to end lives.	4	3-4	7 (3)	34 (12)	65 (24)	107 (39)	60 (22)
Naturalistic beliefs								

4a	A person should not be kept alive by machines.	3	3-4	41 (15)	88 (32)	98 (36)	37 (14)	9 (3)
4b	Natural death is a cure for suffering.	3	2-4	10 (4)	63 (23)	108 (40)	63 (23)	29 (11)

Mdn: median; IQR: interquartile range

Table 3. *Independent-samples Mann-Whitney U test between total UMS-EAS-NL and demographic, education-related data. (N=273)*

		U	Z	p
	Gender (n)			
Total UMS-EAS-NL	Male (36) Female (237)	4036.500	-.520	.603
	Year of birth (n)			
Total UMS-EAS-NL	≤1999 (181) >1999 (92)	7700.000	-1.016	.310
	Mental health placement (n)			
Total UMS-EAS-NL	Yes (224) No (49)	5443.500	-1.001	.929
	Ever involved in euthanasia (n)			
Total UMS-EAS-NL	Yes (154) No (119)	8256.500	-1.403	.161
Ethical Considerations	Yes No	7983.500	-1.828	.068
Practical Considerations	Yes No	9115.500	-.074	.941
Treasuring Life	Yes No	8090.500	-1.669	.095
Naturalistic Beliefs	Yes No	8142.000	-1.637	.102