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The Role of the General Practitioner in the Dutch System of Post-Mortem Investigations

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Abstract

Objective: General Practitioners (GPs) have an important role in the Dutch system of external post-mortem examination (E-PM). They perform at least 50% of the E-PMs. This research aims to study the competence of the GPs in the Netherlands in performing E-PMs. To achieve this, a survey was performed amongst GPs. The study analysed if GPs felt competent to perform E-PMs, if they had knowledge of and acted according to the Dutch Burial Act and if they were consistent in their acts and thoughts.

Methods: An online survey conducted amongst GPs resulted in 225 datasets, after excluding 36 surveys for various reasons.

Results: There was no significant difference in the feeling of competence between GPs (79.47%) and GP registrars (86.49%). Of all the respondents 40.89% were consistent in their acts and thoughts on the matter of E-PMs and 33.78% of respondents scored a 100% on legal knowledge? Of all the respondents that felt competent 47.28% showed inconsistency in acts and thoughts as well as lack of legal knowledge.

Conclusion: Although every physician in the Netherlands is qualified to perform E-PMs, this research shows this does not automatically imply they are competent to do so. The inconsistency in acts and thoughts and/or the lack of legal knowledge in the matter of E-PMs undermines the current Dutch system of death investigations.

Keywords: Death • Forensic medicine • External post-mortem examination • General practitioners • Competence • Consistency • Legal knowledge

Introduction

In the last decade, in the Netherlands, several reports have been written on the subject of external post-mortem examination (E-PM), and its quality. The conclusion of all these reports was that improvements are imperative in almost every step of the process of post-mortem examination [1-4]. Examples of these steps are the training of forensic physicians in E-PM and the ability of forensic physicians to use more and different investigation methods besides strictly the E-PM. Most of these reports focus on the E-PM from the moment the forensic physician is involved. The importance of the role of the attending physician, who conducts the initial post-mortem examination in at least 85% of the deceased, seems to be ignored in these reports. Furthermore, research has shown that though attending physicians state they feel competent to do an E-PM, they do not feel competent to recognize injuries during such an examination [5].

In the published papers in the Dutch literature, the subject of competence in E-PMs and the assessment of that competence have both been underexposed. The aim of this research is to study the competence of attending physicians in the Netherlands, performing E-PMs. This competence is of great importance, as the attending physician has a key role in the whole process of post-mortem examination by reporting not being convinced of a natural death. Within the group of attending physicians the two largest groups to be distinguished are the clinicians and the general practitioners (GPs). This research focused on the GPs, performing at least 50% of all E-PMs [6].

The present study analyzed whether GPs had knowledge of and would act in line with the Dutch Burial Act, whether they felt competent to do an E-PM and whether they acted consistently in following procedures around the E-PM.

Dutch legal system

As described in a similar study on clinicians [7] when a person dies in the Netherlands, the attending physical should perform an external examination E-PMs as soon as possible, according to article 3 of the Burial Act. An external post-mortem examination E-PMs is not only comprised of the external post-mortem examination E-PMs of the body but also extends to the investigation of the medical history and of the circumstances that led up to a death.

According to the law (article 7 p.1 and article 12a p.1 of the Burial Act, Wet op de lijkbezorging), if convinced of a natural death, the attending physician must complete all relevant forms. These forms are the so-called A and B forms. With the A form the attending physician states to be convinced of a natural death. The B form concerns the actual cause of death and consists of several sections. According to the Dutch law, it is mandatory both forms be filled out by the same physician [8].

Also according to the law (article 7 p. 3 of the Burial Act) if not convinced of a natural death or convinced of an unnatural death, an attending physician must notify a forensic physician immediately. The forensic physician will then take over the E-PMs. If the forensic physician comes to the conclusion that the death is unnatural, he must report this immediately to the prosecutor (article 10 of the Burial Act) [8].

Education of Dutch physicians on the matter of external post-mortem examination E-PMs should take place in the undergraduate curriculum. This teaching usually consists of no more than an hour's lecture and is mostly combined with the subject of forensic medicine. The same is seen in the medical specialist training. Since 2016, Dutch GP's have been working with a guideline on external post-mortem examinations E-PMs [9].

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Judicially, in the Netherlands, there is a significant difference between being qualified as a medical doctor and being competent as such. Being qualified means a physician has the right documents, i.e. a medical licence (article 18 and 19 of the Act on Professions in Individual Healthcare, Wet Beroepen in de Individuele Gezondheidszorg, BIG-Act). In order to be competent to perform certain procedures a physician needs to be qualified and needs to have the medical knowledge, skills and experience with said procedure [10].

On the subject of competence, the Royal Dutch Medical Association took the following position: "a broad interpretation of the term competence means that it is not just a matter of being technically able to perform a procedure, but it also means that the purpose of the procedure is known, that the consequences of the procedure can be assessed, that one knows how to handle complications, etc."[10].

When it comes to the question of competence, the physician has to decide for himself whether he is competent to perform a procedure. Therefore, a physician that does not feel competent can, and should, refrain from performing said procedure.

When it comes to post-mortem examination, competence is shown, amongst other things, by acting consequently and by having knowledge of the relevant acts and laws.

Materials and Methods

Methods

An online survey was developed by a forensic physician and a professor in forensic medicine. Feedback on comprehensibility and clarity of the questionnaire was asked of four forensic physicians and two medical students after which the questionnaire was adapted. The survey consisted of questions on:

- The position of the physician (GP or GP registrar);
- Their experience in performing E-PMs;
- Their feeling of competence in performing E-PMs; and
- Five GP related case-descriptions with three questions per case (see Appendix). In four cases (cases 1 to 4), the physicians were asked whether the death was natural or unnatural, whether they would ask a forensic physician to take over the case and whether they thought that doing this was mandatory by law. In the fifth case (case 5) the physicians were asked whether or not they would fill out the applicable forms and if so, what part of the form they would fill out.

Distribution of the survey was done by so-called snowball sampling, where the contacts of the researchers were asked to fill out the survey and disseminate it in their network. In the end, the survey was completed by 261 GPs. A predefined matrix was used to evaluate the filled out questionnaires and consensus was found on unclear answers after discussion by the research-group.

The answers were scored on consistency in cases 1 to 4. When acts and thoughts following a conclusion of natural or unnatural death were reasoned logically, this was deemed as consistent. In this scoring system, the maximum amount of points was eight, two points per case, four cases in total. Each physician started with eight points and for each inconsistency one point was subtracted. Table 1 shows which answers were considered as (in) consistent.

The answers were scored on knowledge of the Dutch Burial act (legal knowledge) in cases 1 to 5. In this scoring system, the maximum amount of points was 13. Cases 1 to 4 represented three points per case, case 5 represented one point. For each answer showing lack of legal knowledge, one point was subtracted from the total. Table 2 shows which answers represented (lack of) legal knowledge.

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Table 1. Consistency scoring system.

Case regarded as	Action chosen	Points subtracted
Natural cause of death	Calls forensic physician	0
	Won't call forensic physician	0
Unnatural cause of death	Calls forensic physician	0
	Won't call forensic physician	**-1**
Did not answer question		Not counted
Action chosen	**Perception of action**	**Points subtracted**
Calls forensic physician	Calling is mandatory by law	0
	Calling is not mandatory by law	0
Won't call forensic physician	**Calling is mandatory by law**	**-1**
	Calling is not mandatory by law	0
Did not answer question		Not counted

Table 2. Legal knowledge scoring system.

Case regarded as	Perception of action	Points subtracted
Natural cause of death	**Calling forensic physician is mandatory by law**	**-1**
	Calling a forensic physician is not mandatory by law	0
Unnatural cause of death	Calling a forensic physician is mandatory by law	0
	Calling a forensic physician is not mandatory by law	**-1**
Open answer reflecting lack of legal knowledge		**-1**
Form A	**Form B**	**Points subtracted**
Fills out form A	Fills out form B	0
	Does not fill out form B	**-1**
Does not fill out form A	**Fills out form B**	**-1**
	Does not fill out form B	0

The Independent Samples T-test or the Chi-square test (Pearson Chi-Square) in IBM SPSS version 26, were used for analysis. The consistency-scores and the scores on legal knowledge were compared between GP's and GP registrars. The consistency-scores and the scores on legal knowledge were compared between the group that feels competent and the group that does not feel competent.

Results

A portion of the 12500 general practitioners (GPs) and the approximately 2500 GP registrars (approximately 750 new training places per year for a 3 year fulltime training period) in the Netherlands was attempted to be reached through the snowball sampling. Eventually 261 surveys came back. Of those 261 surveys, three were removed because they were not filled out by GPs or GP registrars but by geriatric specialists. Furthermore not all respondents gave a scorable answer to all questions. As one of the inclusion-criteria was a 75% scorable answers for all the case-based questions, a further 33 surveys were excluded. Of these, 28 were surveys from GPs and 5 were from GP registrars. In total 225 datasets were included in this research. The results will be presented as percentages of answered questions.

Of all respondents 54% (122/225) gave scorable answers to all the questions. Of all respondents 23.11% (52/225) gave scorable answers to all the questions and were consistent in their answers. This could be separated in 21.85% (33/151) of the GPs and 25.67% (19/74) of the GP registrars.

Of the 225 respondents 67% were GPs and 33% were GP registrars. Of all the GP registrars 86.49% (64/74) felt competent to perform an E-PM compared to 79.47% (120/151) of the GPs (Table 3). No significant difference was found between the GPs and the GP registrars on the matter of feeling competent to perform an E-PM (p=0.191).

Looking at the consistency, regardless of the amount of scorable answers, 40.89% of respondents scored 100%. This was represented by 36.42% of the GPs and 50% of the GP registrars (Table 4).

Of all the respondents 33.78% (76/225) scored 100% on legal knowledge. This could be divided in 29.14% (44/151) of GPs and 43.24% (32/74) of the GP registrars (Table 5).

Of all 225 respondents 35 (15.55%) had scorable answers to all the questions, felt competent to perform E-PMs, were consequent in all their answers and scored 100% on legal knowledge.

To investigate if the feeling of competence is backed by consistent acting and by legal knowledge, these scores were compared between the group that feel competent to perform an E-PM and the group that does not feel competent. There was no significant difference between the two groups when it came to consist acting (*p=0,412*). There was a significant difference between the two groups when it came to legal knowledge (*p=0,048*) where the group that felt competent scored significantly better on legal knowledge than the group that did not feel competent.

This research also examined whether there was a difference between the GPs and the GP registrars. Comparing the scores of consistent acting, no significant difference was seen between the two groups (p=0,080). The two groups were comparable in their consistency in acts and thoughts. Neither was there a significant difference in legal knowledge between the GPs and the GP registrars (p=0,060). Both groups had comparable legal knowledge.

In this research it was also noticed that 15.55% (35/225) of the respondents indicated that they would, incorrectly, fill out the unnatural cause of death part of the B-form which is reserved for the forensic physician.

Discussion and Conclusion

With this research, it was investigated if GPs and GP registrars felt competent to perform an external investigation, if they acted consistently and if they had knowledge of the Dutch Burial Act. Respondents were asked to assess whether the presented relevant cases were natural or unnatural death. Their answers were not scored as being right or wrong. The reason for this decision is that with the use of a survey and cases, the respondents indicate that they don't feel like they have enough information in the case to make a decision. Furthermore whether a case is a natural or unnatural cause of death is food for discussion amongst doctors and forensic physicians. The researchers did not want to mix their own opinion in a continuing debate on the subject or be seen as the Golden Standard. This research focused on the taken actions once the physician reached the conclusion on the manner of death (natural or unnatural).

Research showed that of all the respondents 81,78% felt competent to do an external post-mortem examination, 33,78% scored 100% on legal

Table 3. Respondents.

	Total (n=225)	General Practitioners (GP) (n=151)	General Practitioner registrar (GPr) (n=74)
Years of experience in present function			
0 to 2 years	73 (32.44%)	14 (9.27%)	59 (79.73%)
2 to 5 years	38 (16.90%)	23 (15.23%)	15 (20.27%)
5 to 10 years	37 (16.44%)	37 (24.50%)	0 (0%)
More than 10 years	77 (34.22%)	77 (50.99%)	0 (0%)
Competence			
Feels competent	184 (81.78%)	120 (79.47%)	64 (86.49%)
Does not feel competent	41 (18.22%)	31 (20.53%)	10 (13.51%)

Table 4. Consistency results.

Scoring Percentage on Consistency	Total (n=225)	General Practitioners (GP) (n=151)	General Practitioner registrar (GPr) (n=74)
100%	92 (40.89%)	55 (36.42%)	37 (50%)
99%-75%	86 (38.22%)	61 (40.40%)	25 (33.78%)
74%-50%	43 (19.11%)	31 (20.53%)	12 (16.22%)
49%-25%	4 (1.78%)	4 (2.65%)	0 (0%)

Table 5. Legal knowledge.

Scoring Percentage on legal Knowledge	Total (n=225)	General Practitioners (GP) (n=151)	General Practitioner registrar (GPr) (n=74)
100%	76 (33.78%)	44 (29.14%)	32 (43.24%)
99%-75%	147 (65.33%)	105 (69.54%)	42 (56.76%)
74%-50%	2 (0.89%)	2 (1.32%)	0 (0%)

knowledge and 40,89% was consistent in their acts and thoughts about the post-mortem examination. This is comparable to the results of the similar research done in clinicians [7]. When the legal knowledge and the consistency of acts and thoughts were combined with the feeling of competence, it showed that 15,55% of the respondents felt competent, gave scorable answers to all the questions, showed no inconsistency in acts or thoughts *and* scored 100% on legal knowledge.

None of the performed analyses showed any significant difference between the GPs and the GP registrars. In the current Dutch system the GP registrars learn doing the E-PM and how to make related decisions from the GPs. This is of concern for the future as the latter group doesn't have more legal knowledge and is as (in) consistent in their acts and thoughts as the GP registrar group. From the principle that the master shares his knowledge with the pupil, as long as the master lacks crucial knowledge, that specific knowledge will never be passed on to the pupil.

One of the limitations of this research is that respondents were given the opportunity to give open answers to some of the questions. Due to the vagueness of certain answers it was not always possible to score those answers. Therefore, in certain datasets, it was not possible to score points out of the maximum of 8. When using percentages this meant that a physician scoring 8 out of the maximum 8 (eight consistent answers on eight scorable answers), received that same 100% as the physician scoring 6 out of 6 (six consistent answers on only six scorable answers). Another limitation, albeit chosen deliberately, is that this research focused only on the knowledge and reasoning of the physician and not their skills and abilities in this matter.

Every physician in the Netherlands is qualified to do an external post-mortem examination. Even so, that doesn't mean that they are all competent to do so. Being, or feeling, competent is still something a physician needs to self-assess. As mentioned earlier, this assessment should be based on one's own judgement of knowledge, skills and expertise. In the case of the E-PM, when a physician doesn't feel competent he should refrain from performing E-PMs. Disciplinary accusations can be made by the Medical Board and, in the near future, by the Dutch Healthcare Inspectorate.

The fact that this research found no significant difference between the group that feels competent and the group that does not feel competent when it comes to (in) consistency in acts and thoughts, shows that in this case the sense of competence is not a good indicator of the quality of the external post-mortem examination. Particularly worrisome is that 47.28% (87/184) of the respondents that felt competent were inconsistent in their acts and thoughts and lacked the legal knowledge. As mentioned earlier, the Royal Dutch Medical Association took a clear position on the subject of competence [10] the fact that competence, besides qualification, is the key feature of the Act on Professions in Individual Healthcare, makes the above-mentioned problematic. There seems to be a situation of unconscious incompetence on the subject of external post-mortem examination.

A physician is expected to be able to perform an external post-mortem examination after finishing his medical training and certainly after finishing his specialist training. But if during both training programs one is sparsely educated on the subject, one could wonder how competent one is on the matter of external post-mortem examination. And even if the applicable forms are self-explanatory and the A-form mentions that a physician may only sign if they are convinced of a natural death, practice has shown that physician fill out and sign the forms automatically without reading. It is seen as an administrative box-ticking exercise part of the death-procedure. The judicial and societal relevance of this action is disappearing into the background.

It could be that sufficient legal knowledge contributes to the feeling of competence, as there was a significant difference between the group that feels competent and the group that doesn't in the matter of legal knowledge. Considering the fact that the Dutch system of external post-mortem examination gives the GP a crucial and pivotal role, it is essential that the GP is competent to perform this task. The Dutch system of external post-mortem examination can be improved on several points as the education in the subject is almost non-existent and the only guideline on the matter [9] is not very specific. It is also not helpful that the law, especially the Dutch Burial Act, is not clear about what a physician is required to do when performing an external post-mortem examination. All the above leads to GPs not knowing how to adequately perform external post-mortem examinations and not receiving the exact indications from the legislator as to what is expected of them, but still teaching GP registrars. The same issue was seen with clinicians [7] and even though the whole system could be improved, proper educations and training on the subject could give significant benefits. This would give physicians who performs external post-mortem examinations more clarity on their tasks and make them actually competent in this matter.

Declaration of Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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