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Nursing workload in hospitals: Does it have an impact on the health of patients?



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The reputation of a hospital is often determined by its nursing care. It has been suggested that the burden of work on nurses, depending on their qualifications and task or specialty, might have an impact on the quality of a hospital's patient care. Or, to put it another way: if a hospital has too few nurses, this could theoretically have health consequences for the patients. This is why one of the basic questions for planning hospital staffing is whether or not there is a minimum number of nurses needed per patient to avoid patients being disadvantaged.

This question is important in Germany too. There are around 2,150 hospitals in Germany, and in recent years they have been reducing the number of nurses. Between 1995 and 2004 the number of people working in nursing full-time fell from over 350,000 to 309,000. Meanwhile the number of patients admitted to hospital rose. Altogether, the number of patients being cared for on average per nurse rose by almost 20% between 1995 and 2004. It is not possible to draw conclusions about the actual workload, though, because the tasks of a nurse can vary a lot depending on where they work. The staffing levels are different between intensive care units or a ward in a psychiatric hospital, for example.

With these considerations in mind, researchers from the German Institute for Quality and Efficiency in Health Care (IQWiG) gathered evidence on this question to see if nursing workload has been shown to have an impact on the quality of care in hospitals. They did not look at community nursing or aged care. The result: there is no established point to show when nurses are so overloaded that the quality of care begins to suffer. The researchers found 17 studies altogether that looked at this question. All of the studies were done in the USA, which means that there had not been reliable research in Germany on this question.

The US studies also had contradictory results. One of the problems is that there are many different ways that nursing workload can be measured. In many studies ratios such as "nurses per patient" were calculated, while others chose "nurses per occupied hospital bed". This means that it is not really possible to compare the results of different studies directly with each other. That makes it impossible to explain the reasons for the differing conclusions between

studies with any certainty.

Some of the studies in US hospitals, for example, showed an association (or link) between the workload of nurses and the mortality rate of patients: the hospitals where each nurse had to look after higher average numbers of patients had higher mortality rates, too. However other studies that included larger numbers of hospitals did not show this result.

There were similar contradictions in the findings of studies where complications typical for hospital patients were studied. There was no association between nursing workload and various infections, pneumonia (lung infection) or bed sores. This could be because hospitals with extremely heavy workloads for nurses did not participate in the US studies.

In any event the results from these US hospitals would not necessarily have applied to the situation in Germany. There could be too many differences between the roles of nurses and their working situations.

The IQWiG researchers came to the conclusion that some studies in the USA suggest that when nurse workloads are too high, it can have consequences for the health of a hospital's patients. However research cannot pinpoint a specific nursing workload where this would begin. The most important finding of this research is that there is a need to study the relationship between nursing workload and the quality of hospital care in Germany.

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Note

This health information is a summary of a scientific report published by IQWiG. It is not an assessment of the right to have health care services reimbursed by statutory health insurance funds in Germany. By law, decisions about the reimbursement of diagnostic and therapeutic procedures can only be made by the German Federal Joint Committee (G-BA). The Federal Joint Committee takes IQWiG reports into consideration in its decision-making process. You can find information about the decisions of the German Federal Joint Committee on its English-language website, www.english.g-ba.de (URL: <http://www.english.g-ba.de/>).

Glossary

evidence

Evidence is what we call scientific proof from well-conducted, good-quality scientific trials that have been carefully designed to answer specific questions. Depending on the types of questions, different scientific research methods (types of study) are most appropriate to find reliable answers to these questions. Randomized controlled trials (RCTs), for example, are the best way to get reliable evidence on the effectiveness of medical treatments (interventions). This type of study, however, is not the best form of evidence for all possible questions, and does not provide the best answers to all kinds of questions, either. Epidemiological studies, for example, are very suitable for establishing well-founded proof for the spreading of a disease in the population.

infection

In medicine, we speak of an infection when a person has caught a germ (an infectious agent). This germ can be a bacterium, a virus, a fungus or a worm. The germ multiplies and then either spreads throughout the body or only attacks one particular organ. As long as there are no signs of a disease, this is called an asymptomatic infection. When the body shows a reaction to the germ in the form of symptoms, this is called a symptomatic infection (an infectious disease). The period between the moment the germs enter the body and the moment the first symptoms of the disease appear, is called the incubation period. It may last a few hours or days, or even many years. An infection does not necessarily have to lead to the onset of a disease.

bed sore

The word decubitus comes from the Latin word "decumbere", which means to lie down. It is usually called a bed sore, pressure sore or pressure ulcer. Bed sores develop from unrelieved pressure on the skin, causing damage to the skin and the underlying skin tissue. The continuous pressure compresses small blood vessels, which cannot supply the surrounding tissue with enough oxygen and nutrients. The skin changes and becomes necrotic (dies). Bed sores mainly affect people who have to lie in bed for long periods. The most vulnerable areas are those where the skin lies directly over the bone, and include the heels, ankles, knees, hips, base of the spine, spine, and elbows. Elderly people or people with chronic diseases such as diabetes or circulation problems have a high risk of

developing bed sores.

pneumonia

Pneumonia ("pneu" is of Greek origin and means "breeze") is the medical term for an inflammation of the lung. It can be caused by viruses, bacteria or fungi that pass through the upper airways to get into the lung. It is a disease that more commonly affects old and very young people and other persons with a weak immune system. The symptoms include coughing up sputum, breathlessness, chest pain and fever. Breathing is rapid and can be accompanied by crackling or rattling noises.

Sources

German Institute for Quality and Efficiency in Health Care (IQWiG). *Association between nursing capacity and quality of outcome in inpatient care. Working paper. Version 1.0.* Cologne: IQWiG. August 2006. [Full text (URL: http://www.iqwig.de/download/Arbeitspapier_Zusammenhang_zwischen_Pflegekapazitaet_und_Ergebnisqualitaet_in_der_stationaere - in German]

The German Institute for Quality and Efficiency in Health Care (IQWiG)

The German Institute for Quality and Efficiency in Health Care (IQWiG) was established by legislation to provide evaluations of the effectiveness, quality and efficiency of healthcare services. This includes the assessment of medicines as well as the publication of health information for consumers and patients.

Evidence basis of our health information

Our information is based primarily on systematic reviews of the effects of health care. Systematic reviews are necessary to gain an objective picture of health care. In order to do this, a clear question is formulated. Researchers then find all the relevant studies that could answer this question. They then evaluate those studies.

You can find a list of the evidence and other scientific literature on which this information is based at **www.informedhealthonline.org**

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