Does pre-operative education of patients improve outcomes? The impact of pre-operative education on recovery following coronary artery bypass surgery: a randomized controlled clinical trial

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One of the major challenges facing most health care systems remains the limited evidence base upon which to configure service provisions. Only in the field of surgical and therapeutic interventions do reliable and substantial data often exist to justify utilization, and determine most appropriate indications. However, for the best way of structuring overall packages of care, in the context of inpatients, outpatients, or community follow-up of chronic disorders, evidence remains patchy. The emerging importance of health service research should ensure that these gaps in our knowledge base gradually become less evident. Indeed, because reliable methodologies for conducting health service research have been well elucidated, it is now as inappropriate to implement major new patterns of health care delivery without proper evaluation, as it would be to introduce a new drug without the evidence to support a licensed indication.

Naturally, the focus for much health services research relates to inpatient care\(^1\), because in most health care systems, hospital costs drive the overwhelming majority of total system costs. The study on the impact of pre-operative education on recovery following coronary artery bypass surgery in this issue\(^2\) provides a useful contribution to the evidence base. This moderate sized study, using reliable methods, randomized 356 people to a day of education from members of a multidisciplinary team, prior to admission for bypass surgery, with the control group receiving usual care. Essentially, the results showed no difference between the groups in the primary outcomes, namely anxiety and pain, depression, or well being. Further, there was a significant difference in the length of hospital stay favouring the control populations, although this result was not explicable and represented less than one extra day in the intervention group compared to the mean 9 days seen in the control population. Clearly, therefore, this particular health service intervention would appear to rule out the utility of pre-operative education, at least for bypass surgery amongst white working males (the subjects for this particular trial).

These data are, however, in conflict with much earlier research into the value of pre-operative education on the basis of meta-analyses of studies\(^3,4\) which concluded that such education was beneficial. However, these earlier studies are old (largely conducted in the pre-1990s), used less reliable methods, and suffered from short-term follow-up. More recent and reliable studies have also demonstrated positive patient outcomes from personal education to patients and their carers, but have been conducted in select patient populations in situations other than pre-operatively. For example, a number of studies have demonstrated the benefits of nurse-led interventions to educate patients regarding heart failure care post discharge from hospital. Much of the positive effect seen in these varied studies appears to relate to the educational component of the intervention, particularly relating to recognition of worsening heart failure and the importance of concordance with medication\(^5\). Other studies have demonstrated the benefits of tailored education on self-management in discreet patient cohorts, such as in children admitted to hospital with asthma\(^6\), primary care asthma and diabetes follow-up\(^7\) or in improved cytology screening\(^8\). Intuitively, we would expect better patient education to result in beneficial outcomes.

So why might this trial have produced negative results? Perhaps the most important factor relates to the site of the intervention. The hospital where the study was conducted operates a longstanding programme of educating patients at the point of admission for bypass surgery. The control population were not therefore a placebo group since they received education, but at a later date than that provided to the intervention group and possibly of lower intensity. One possible explanation for the negative results is therefore that there is only so much education that is likely to be beneficial. However, it is also noteworthy that, of the 1018 eligible patients approached

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to take part in the study, only 374 agreed to randomization. Clearly, therefore, two-thirds of patients did not feel able or interested in devoting an extra day to education on their forthcoming surgery. This is a very important negative finding in terms of the feasibility of the intervention.

Overall, this is an important study since it comprehensively demonstrates the futility of providing pre-operative education to patients awaiting CABG surgery, at least in hospitals providing education at the point of admission. As with any health service intervention, it is important to have sufficient positive data from reliably designed single centre studies before even considering the design of larger studies in generalizeable settings. Both of these stages are essential prerequisites to even contemplating the dissemination of complex interventions as a routine element of care. This particular educational intervention appears to have failed at the first hurdle and continued research should concentrate on what has proved positive to date, namely patient education on their surgery at the point of admission.

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References