Medicine is Changing: Systemic Issues Pertaining to Bloodless Medicine

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Abstract

One of modern medicine’s most dominant staples is blood transfusion, a technique that has been evolving for over the last two to three centuries, saving hundreds of millions of lives along the way. However, it might soon be overpowered by a relatively new technology that was in the works over the past several decades: bloodless medicine; medical attention practices that can replace almost all procedures that formerly used stored blood. This study looks at bloodless medicine through many different aspects, from its usages to its impacts on modern healthcare and mainstream society. An informational campaign was launched in Stephen Lewis Secondary School in Mississauga due to the fact that, as shown by the results of a survey that was conducted by some of its students, there is a lack of awareness of the situation surrounding bloodless medicine.

Introduction

‘Bloodless medicine’ is a term that can apply to techniques like autologous transfusions or minimally invasive surgical procedures, as well as blood growth factors and substitutes in the form of pills and solutions that can be consumed; treating a wide range of blood diseases and illnesses and assisting with almost every surgery imaginable (“Alternatives to Blood Transfusions”; “Blood Cell Growth Factors”, 2014; Johns Hopkins Medicine ,2016).

Bloodless medicine ensures patient safety, further reducing the chances of organ dysfunctions, blood-borne infections, and immune reactions; helping with increasing the 5-year survival rate after major treatments or surgeries (Williams, 2013).

This is also beneficial for hospital logistics, too. If the UK relied on bloodless medicine more often, they would be able to save over £105 million spent annually over blood units, which can surely be redistributed for other purposes, improving the quality of healthcare (“Reducing Blood Transfusions”, 2016).

Since 2012, the American Association of Blood Banks (AABB) and the American Board of Internal Medicine (ABIM) have led an international campaign called ‘Choosing Wisely’, aimed at healthcare providers to combat the overuse of blood transfusions (“Choosing Wisely®”, n.d.). New guidelines were created in many hospitals. One prominent success is that of the Stanford Medical Centres, where due to the new guidelines, over 40% of blood unit orders were cancelled (Williams, 2013). However, this issue is arising at a time that is already very critical to the blood bank industry: the
number of donors shrinked by 30% between 2006-2016 across 21 countries ("Missing Type", 2015). This resulted in many jobs being at risk, with 25% jobs in the US blood bank industry being lost by 2019 (Wald, 2014). Is the popularity of bloodless medicine being reinforced by the blood bank industry falling apart? What might society's view on the situation be?

**Study**

A survey was conducted, asking 55 participants, mainly high school students, about their knowledge of bloodless medicine, how likely they were to donate blood, and any motivators that might urge them to donate blood (or not). There were two different focuses: to find a correlation between the likelihood of donating blood (asked on a scale from 1-5, with 5 being most likely) and knowledge on any negative side effects of either donating or transfusing blood (asked on a scale from 1-4, with 4 being most likely), while the other focus to find a correlation between a person’s awareness on bloodless medicine (asked on a scale from 1-4, with 4 being most likely) and how knowledgeable they are about any potential negative side effects of donating blood or receiving a transfusion (See figures 1 and 2).

![Graph 1: Likelihood of Donating Blood VS Knowledge of Negative Side Effects of Blood Donations/Transfusions](image)

*Figure 1: Likelihood of donating blood vs knowledge on side effects from donating or receiving blood*
Results Summary

Out of the 55 participants, 17 people replied with a 3, and 17 others replied with a 5 when asked about their likelihood of donating blood. 31 students responded with a 1 when asked about their knowledge on bloodless medicine. 15 answered with a 1 when asked about their knowledge on any possible side effects when donating or transfusing blood.

Such results have resulted in a weak, positive correlation; meaning that, surprisingly, there’s a slight chance that people would still donate blood or know about bloodless medicine if they already knew about any potential side effects of transfusing or donating blood.

Additionally, 39 participants said that they would consider donating blood to help save lives, and 21 participants said that their fear of needles or blood would prevent them from donating blood.
Discussion

Although the study probably was not fully representative of the participants’ views on the situation discussed in the introduction of the article, it was nevertheless evident that participants had no idea about what bloodless medicine is. Bloodless medicine is not publicized in society as much as blood banks. Despite Choosing Wisely being a successful campaign so far, it has only been targeted towards healthcare providers exclusively, and not to the general public; unlike blood banks, who are relatively more influential. They simultaneously supply stored blood to hospitals and spend a lot of effort in attracting donors. The Canadian Blood Services, for instance, is known for its ‘heroic narrative’ marketing campaigns that attract donors on humanitarian grounds; using the phrase ‘giving life’ and stories of real-life people in most of their media.

The other correlations found in the data might existed as a result of people taking a mere precaution before considering to donate or receive blood by being informed about side effects of donating or receiving blood, by doing research or by being directly informed before donating or transfusing blood.

Taking Action

Bloodless medicine has a great potential in leading our healthcare systems towards better efficiency. However, more people need to know about it as apparent from the study's results. Consequently, an informational campaign was created, with a tagline, #medicineischanging, consisting of an animation that was uploaded onto YouTube (https://youtu.be/IZLV2zFlvA4) and Twitter in order to raise awareness through as many facets as possible by creating informational material (since availability of material directly related is extremely limited). Additionally, an installation was hanged in the back atrium of the school to motivate people to research the topic for themselves.

References


