



## Major Article

## Sickness presenteeism in clinical clerks: Negatively reinforced behavior or an issue of patient safety?



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## Key Words:

Presenteeism  
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**Background:** The purpose of this study was to investigate sickness presenteeism in medical students and to understand the factors that may promote this behavior.

**Methods:** All 178 final year medical students (clinical clerks) at the University of Calgary, Class of 2014 were invited to complete an online, anonymous, cross-sectional survey. After completing each mandatory rotation, students were sent a link to the online survey. Students were asked to report days of illness and whether they attended clinical or educational activities while ill. Students were also asked about consequences of missed days and reasons for attending while ill.

**Results:** Out of a possible 1,068 surveys, 549 surveys were returned, reflecting a 51% response rate. Overall, 37.0% ± 11.8% of the respondents reported attending while experiencing symptoms suggestive of a contagious illness. Overall, the odds of presenteeism (ie, attending while ill/absent while ill) for all clerkship rotations were 4.92. The most frequent reasons (56%) were concerns regarding evaluation or the impact that missing time from the rotation would have on their learning.

**Conclusions:** Sickness presenteeism is common among medical students. Relevant factors may be different for students than other health care workers. Medical educators should be aware of these factors when developing policies to help promote professionalism and patient safety.

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Sickness presenteeism (SP) can be defined as the act of coming to work when ill. Several studies have explored the prevalence of SP and factors associated with this behavior in non-health care-related occupations.<sup>1-6</sup> SP has been linked to decreased productivity,<sup>7</sup> the development of depression,<sup>8</sup> and poor general health.<sup>9</sup> Unlike other fields, loss of productivity may not be the most negative acute outcome of SP. Health care personnel working while ill may transmit infections to their patients, potentially leading to disability and death.<sup>10-12</sup> This understanding is not clear among most physicians, and it is doubtful that this message is promoted in educating future physicians.

Medical education is largely based on mentorship. Medical students gain knowledge from many sources but the practices they observe from physician preceptors are an integral part of their education. In addition to service requirements, medical students have the unique challenge of fulfilling their learning requirements. When illnesses are experienced by medical students it is not clear that students are trained to put patients and coworkers first by avoiding the opportunity to spread an infectious illness. Physicians and other health care providers with contagious illnesses who have close contact with patients may transmit infections to these vulnerable individuals. Health care-associated infections such as viral respiratory or gastrointestinal infections acquired from health care staff clearly jeopardize patient safety. The magnitude of this problem is not known because surveillance for these infections is not routinely conducted in most hospitals.

There are currently no data on SP among medical students in Canada. The aim of this study was to investigate SP in medical students in the final year of training at the University of Calgary and to understand the factors that may promote this behavior.

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Conflicts of Interest: None to report.

## METHODS

### Participants

All final year medical students (N = 178) at the University of Calgary, Class of 2014 were invited to participate. During the year, students complete elective and mandatory rotations in various disciplines. The mandatory rotations are in 8 disciplines: anesthesia, emergency medicine, family medicine, internal medicine, obstetrics and gynecology, pediatrics, psychiatry, and surgery. Most are 6 weeks in duration, with the exception of internal medicine (10 weeks), anesthesia (2 weeks), and emergency medicine (2 weeks). Because of the short duration of the rotations, data from anesthesia and emergency medicine are not reported.

### Procedure

Ethics approval was obtained from the Conjoint Health Research Ethics Board. At the end of each mandatory rotation, all students were sent a link to the Clerkship Illness Survey using the One45 online evaluation system (One45, Vancouver, BC, Canada). Completion of the survey was voluntary and anonymous. The information was collected separately from clerkship feedback questionnaires to ensure there were no negative implications for rotation evaluations. Students received the survey link 8 times over the academic year corresponding to their 8 mandatory rotations.

### Survey

The survey was a self-report of student illness during the rotation. Students were asked to report days of illness and whether they attended clinical or educational activities while ill. Symptoms were broken down to identify clusters typically associated with infectious illness. For example, students were asked specifically about fever, sore throat, cough, runny nose, malaise, headache, myalgia, vomiting, diarrhea, rash, open or draining wound, and pink eye. Students were also asked about consequences of missed days and why they chose to attend clinical or educational activities while ill.

### Data collection and analysis

Because the internal medicine rotation was 10 weeks, rates for this rotation were adjusted by multiplying by 0.6 to allow comparison with rotations of 6-week duration. We used Fisher exact tests to compare rates of reported illness for different rotations and reported differences as odds ratios. We used an independent sample *t* test to compare means between rotations. We calculated potential days of exposure by using the number of students reporting infectious symptoms while attending work. To estimate the odds of presenteeism for each rotation, we calculated the ratio of the number of students attending while ill to the number of students absent while ill and used the odds ratio to compare odds for different rotations. In other words, this represented the likelihood of a student attending while ill compared with staying home while ill. We performed our statistical analyses using STATA version 11.0 (StataCorp, College Station, TX).

## RESULTS

Out of a possible 1,068 surveys, 549 surveys were returned over the academic year, which translates into a 51% overall response rate. The mean number of survey responses per rotation was  $91.5 \pm 13.1$ , ranging from 67 (internal medicine) to 102 (surgery).

For rotations  $\geq 6$  weeks, the mean percentage of students reporting illness during the rotation was  $32\% \pm 10\%$ . This varied by

rotation from a low of 24% during internal medicine to a high of 51% during pediatrics. The odds of students reporting illness were significantly higher for the pediatrics rotation than for all other rotations (odds ratio, 2.32; 95% confidence interval [CI], 1.45-3.69;  $P = .001$ ).

When asked about whether they experienced specific symptoms during their clerkship rotation,  $37.0\% \pm 11.8\%$  of all respondents reported working while experiencing symptoms suggestive of an infectious disease. This proportion varied from 0.2 during surgery to 0.56 during pediatrics. These data are shown in Figure 1. Again the odds of students reporting infectious symptoms were significantly higher for the pediatrics rotation than for all other rotations (OR, 2.32; 95% CI, 1.45-3.69;  $P = .001$ ).

Over the course of the year, 212 students reported attending clinical or educational activities with symptoms suggestive of an infectious respiratory illness, 42 with symptoms suggestive of gastrointestinal infection, and 11 with  $\geq 1$  of rash, open or draining wound, or pink eye. This represents 265 potential days of exposure to patients and coworkers.

On average, students missed 0.65 days per 30 days (range, 0.37 days [family medicine] to 0.96 days [pediatrics]), with the number of missed days being higher for the pediatric rotation than for other rotations ( $P < .001$ ).

Overall, the odds of presenteeism (ie, attending while ill or absent while ill) for all clerkship rotations was 4.92, ranging from 2.65 (pediatrics) to 13.22 (family medicine). These data are shown in Figure 2. The odds of presenteeism were significantly lower for pediatrics than for other rotations (odds ratio, 0.47; 95% CI, 0.35-0.62;  $P < .001$ ).

Although most students did not seek medical care for the reported illness, 28% reported seeking medical care because of the severity or nature of acute symptoms. A further 3% of students reported seeking medical care to obtain a note for excused absence.

Most students (73%) did not perceive negative consequences for missing clinical or educational activities while ill (Table 1). However, 10% reported feeling pressured to attend despite illness, and 3% believed their absence contributed to a negative evaluation. A further 13% reported a requirement to make up work or extend the duration of the rotation.

Students reported a variety of reasons for attending while ill. The most common were did not want to have to make up the time (26%) and did not want to get a poor evaluation (20%).

Of the reasons offered by students for attending while ill (Table 2), the most frequent reasons (56%) were concerns regarding evaluation or the impact that missing time from the rotation would have on their learning. These included a requirement to make up missed time, missing out on a valuable learning experience, or fearing a negative impact on the evaluation for the rotation. The next most common justification for presenteeism was uncertainty about what to do when feeling ill, either because they did not perceive the illness as too serious or transmissible or simply not knowing that they should stay home when ill (21%). Less frequent reasons for presenteeism included having no one to cover duties (9%) and observing residents and staff attending while ill (9%). These data are shown in Figure 3.

## DISCUSSION

Research on SP has become more prevalent within the last decade. To our knowledge, our study is unique in that presenteeism has not been studied in medical students. Of all of the respondents, 37% reported working while experiencing symptoms suggestive of an infectious disease. Our survey indicates that this behavior in the medical students studied may be less common than other published studies.<sup>13-19</sup> There may be a number of reasons for this difference. First, at the University of Calgary's affiliated health care

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