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Title: Nurses' illness perceptions during presenteeism and absenteeism

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Abstract:

Background: Presenteeism, defined as attending work while ill, is linked with lost productivity, impaired health and sickness absence. Whilst much research has focused on types of diseases associated with presenteeism and absenteeism, there has been little investigation into how individuals' illness perceptions vary between these episodes.

Aims: To assess how illness perceptions varied between presenteeism and absenteeism episodes.

Methods: A cross-sectional questionnaire was distributed to ward-based nurses working with older adults. Data on illness perceptions during presenteeism and absenteeism episodes were collected. Data were analysed via the Paired-Samples *t* Test, Wilcoxon test, and McNemar test.

Results: 270 cases were analysed (88% response rate). Compared with presenteeism, illnesses during absenteeism affected lives more ($p < .001$), had more serious symptoms ($p < .001$), were more concerning ($p = .003$), were more likely to be treated ($p = .009$), were more contagious ($p < .001$), and a more legitimate reason to engage in absenteeism ($p < .001$). Treatment was considered more effective during absenteeism ($p < .001$), whilst workability better during presenteeism ($p < .001$). Presenteeism was perceived as harmful and absenteeism beneficial for illness ($p < .001$); individuals attended work when presenteeism was expected to be less harmful ($p < .001$) and avoided work when absenteeism was expected to be more beneficial for illness ($p < .001$).

Conclusions: Illness perceptions varied significantly between presenteeism and absenteeism episodes and should be included within relevant models of illness behaviour. Findings also highlight that nurses attend work despite concerning levels of illness and workability.

Key words: Absenteeism, sick leave, presenteeism, nurses, illness behaviour

Introduction

Definitions of presenteeism vary throughout the literature. Most often, presenteeism refers to situations where individuals attend work despite feeling sufficiently unwell to take sickness absence [1]. Much research has attempted to identify the factors that influence presenteeism and absenteeism decisions; several health-related, attitudinal, organisational, and individual factors appear to be implicated [2]. Despite this, a lack of clarity regarding the aetiological factors associated with these behaviours remains.

As presenteeism and absenteeism choices are usually instigated by sickness, research has often focused on the role of health and disease. Often, less healthy workers report more absenteeism and presenteeism [2, 3]. Disease-specific factors have also been studied, with the most consistent finding being that greater symptom severity often results in absenteeism [4]. Conversely, some categories of disorders, such as musculoskeletal disorders (MSDs) and common mental disorders (CMDs) appear to result in presenteeism more frequently than absenteeism [5], as do diseases classified as chronic compared to more acute conditions [5, 6]. Conflicting findings, however, have also been reported [7]. The impact of treatment on presenteeism and absenteeism choices is also unclear from findings to date [7, 8].

Presenteeism and absenteeism decisions may also be informed by individuals' own illness appraisals [9]. Despite their potential relevance, presenteeism studies that include illness perceptions have been limited and findings have been mixed.

Longer lasting illness has been described as both an illegitimate reason for absenteeism [10] and one that often necessitates it [11]. Perceived contagion can encourage absenteeism [12]; however, workers may attend work with such conditions [13]. More disabling symptoms [14] and believing one is too poorly to cope with work tasks is associated with absenteeism [15]. However, reduced workability has also been linked with more frequent presenteeism [16]. Finally, believing that presenteeism was dangerous for ones' health increased absenteeism and reduced presenteeism [17]. Despite this, attendance requirements can result in presenteeism even when considered negative for health [15].

The existing knowledge base is derived from qualitative studies that explored reasons for illness behaviour choices, or quantitative studies that identified the correlates of presenteeism and absenteeism frequency. Individuals' illness perceptions during specific presenteeism and absenteeism episodes have not previously been compared quantitatively; this may foster a better understanding of what drives such decisions and is the aim of the current study. Such findings would also provide a better understanding of individuals' health state when attending work ill.

Methods

A paper-based questionnaire was distributed to ward-based nurses in two hospitals that specialised in the care of older adults. To boost response rate, questionnaires were distributed by hand to on-duty nurses. The questionnaire asked individuals to reflect upon the

most recent presenteeism and absenteeism episode that they had experienced over a period of 12 months. The questionnaire contained two identical sections; one section referred to participants' illness perceptions during their last episode of presenteeism, and the other to the last episode of absenteeism.

Participants were first asked to identify the categories of illness experienced during these episodes. Categories mirrored those identified by the Department for Work and Pensions (UK) [18]. Two types of variables were derived from this section: if the individual experienced a specific category of illness (1) or not (0); and the number of illnesses reported during each illness episode.

Perceptions were measured via the Brief Illness Perception Questionnaire (B-IPQ) [19]. The B-IPQ has good psychometric properties [20] and contains eight single-item questions, all of which are measured on an eleven-point scale (0 – 10). Six items measure cognitive illness representations: identity (symptoms severity); timeline (length of illness); consequences (impact of illness on life); personal control (ability to control illness); treatment control (control of illness via treatment); and coherence (ability to make sense of illness). Two items measure emotional representations: emotional response (experience of negative emotions); and concern (concern about illness). Finally, illness cause is measured by an open-ended question that asks participants to list up to three perceived causes of their illness in order of importance. The first cause was categorised as being an organisational cause (1), or as a cause unrelated to one's work (2). A second variable, overall cause, was based on all the reasons given. The categories included: contains organisational factors (1); and contains no organisational factors (2). The B-IPQ item on treatment control was modified and included a section where participants could indicate if they had not received treatment.

Additional illness perceptions included contagion, which was measured via a single item measure, "How contagious was your illness?" and rated on an eleven-point scale ranging from "absolutely not contagious (0)" to "extremely contagious (10)". Absence legitimacy was rated via the question, "Do you believe that your co-workers would have considered your illness as a valid reason for you to take sick leave?" Possible responses ranged from "absolutely not (0)" to "definitely (10)". Workability was rated via the following question: "How would you rate your workability when attending with this health issue/s compared with your life-time best?" [21]. Responses ranged from "completely unable to work (0)" to "workability at life-time best (10)".

Participants were asked to reflect upon how they had expected that attending and avoiding work could have affected their illnesses during their last episodes of presenteeism and absenteeism. Examples of the questions posed included, "What impact did you expect attending work when unwell would have on your illness?" and "had you instead chosen to stay home, what impact did you expect this would have had on your illness?" Similar questions were posed for absenteeism episodes. All questions were measured on a five-point scale: very harmful (1); harmful (2); no effect (3); beneficial (4); very beneficial (5).

Demographic information including age, gender, grade (charge nurse or nurse), employment (full time or part-time / reduced hours) and position (relief staff or fixed on a ward) were collected. Data were analysed using IBM SPSS Statistics 22. Questionnaires that contained large amounts of missing data, or an empty section, were discarded. For small amounts of missing information, mean substitution, was applied.

Presenteeism and absenteeism data from the B-IPQ, as well as the measures of contagion, illness legitimacy, and workability, were analysed for significant difference ($p<$ 0.05) via the Paired-Samples *t* Test. Differences in the expected health impacts of absenteeism and presenteeism were analysed via the Wilcoxon test. Finally, the presence or absence of common categories of illness, the taking of treatment, and the cause of illness were analysed with the McNemar test [22].

The study received ethical approval from the Research Ethics Committee of the Faculty of Medicine & Health Sciences, University of Nottingham.

Results

Out of a total population of 410 nurses, the researcher contacted and invited 321 to participate in the study; 283 questionnaires were returned (88% response rate). 13 questionnaires were not analysed due to issues such as great amounts of missing data. Analyses were thus conducted on a total of 270 cases (66% of the population). Most participants were female (72%) with a mean age of 38.4 (SD = 12.9). Most worked full-time (97%), had a fixed position on a ward (90%) and did not hold a charge position (77%).

McNemar tests (N = 270) indicated that MSDs ($p < .05$), CMDs ($p < .05$), and headaches and migraines ($p < .05$) were more prevalent during presenteeism (Table 1). Digestive illnesses ($p = .001$), infectious diseases ($p < .05$) and post-operative recovery ($p < .05$) were more frequent during absenteeism. During presenteeism, individuals reported a mean of 1.88 illnesses (SD = 1.22), and during absenteeism a mean of 1.80 (SD = 1.28). A paired-samples *t*-test indicated that the number of illnesses during these two episodes were not significantly different, $t(269) = 1.05$, p= NS, d= .06.

Insert Table 1 here

Paired samples *t* tests indicated that of the measured illness perceptions, only workability ($p < .001$) was significantly higher during presenteeism than absenteeism (Table 2). Conversely, during absenteeism, B-IPQ consequences ($p < .001$), identity ($p < .001$) and concern ($p < .01$) scales were significantly higher, indicating that illnesses affected lives more, had greater symptoms and were of more concern, respectively. Illnesses were also significantly more contagious ($p < .001$) and presented a more legitimate reason for absenteeism ($p < .001$) during absenteeism than presenteeism.

Insert Table 2 here

Whilst 74% individuals received treatment during presenteeism, 82% did so during absenteeism. A McNemar test demonstrated that this difference was significant ($p < .01$). A

paired sample *t* test was conducted to compare the extent to which individuals who took treatment during both presenteeism and absenteeism felt this would help their illness (B-IPQ treatment control). Significantly lower mean scores of 5.98 (SD = 2.49) during presenteeism versus 6.67 (SD = 2.47) during absenteeism episodes, indicated that treatment was more helpful during absenteeism, $t(183) = -3.67$, $p < .001$, $d = -.28$.

During both types of illness episodes, most participants expected that attending work whilst ill would have a negative impact upon illness (Table 3). Attending work, however, was expected to be more harmful when individuals instead chose to engage in absenteeism: Wilcoxon signed ranks tests indicated that 44% rated the expected impact of attending work on their illness during presenteeism and absenteeism equally; 43% expected that attending work during absenteeism would have been more negative for their illness; whilst 12% expected attending during their last episode of presenteeism to be worse for their illness, $z = -5.18$, $p < .001$, $r = -.31$.

Conversely, it was expected that avoiding work could have had a positive impact upon illness during both types of illness episodes, but this positive impact was expected to be greater during absenteeism episodes. Out of 270 participants, 13% expected that avoiding work during presenteeism would have been most beneficial for their illness, 41% expected avoiding work during absenteeism would have been most beneficial, whilst 46% rated them as equally beneficial, $z = -5.31$, $p < .001$, $r = .32$.

Insert Table 3 here

During periods of presenteeism, 75% reported that the primary cause of this episode was an organisational one, whilst 25% reported a non-organisational reason. Overall, 90% reported at least one organisational cause, whilst 10% did not. During periods of absenteeism, 79% reported that the main cause of their illness was organisational, whilst 21% gave a non-organisational reason. Overall, 91% reported at least one organisational cause during absenteeism, 9% did not. McNemar explored the difference in frequency of organisational versus non-organisational causes during periods of presenteeism and absenteeism. No significant difference was found between the main cause or the overall causes of presenteeism and absenteeism episodes.

Discussion

Several illness perceptions varied between presenteeism and absenteeism episodes. Whilst workability was believed to be better during presenteeism, illness during absenteeism was characterised by greater consequences, symptoms, concern, contagion, and absence legitimacy. Disease types also varied between the studied episodes, and whilst individuals engaged in presenteeism when this was believed to be less harmful for illness, absenteeism occurred when this was expected to be more beneficial.

The study is the first to use a quantitative research methodology to compare illness perceptions between presenteeism and absenteeism episodes. This is useful as quantitative studies typically analyse the correlates of presenteeism frequency and provide limited information on the state of nurses during these episodes. Presenteeism is known to be prevalent in nurses [26] and this study is the first to analyse this behaviour via a quantitative research approach in a healthcare setting in Malta. Despite this, it also had several limitations. Illness perceptions were measured retrospectively and in a cross-sectional manner. Qualitative studies often investigate illness retrospectively [12] and such data have also been collected via quantitative retrospective methods [20]. Future studies might consider using a diary approach to record illness perceptions when they occur. Perceptions were measured via single-item scales; it is possible that their lower levels of reliability influenced the findings [27]. However, these enabled a more concise questionnaire which may have improved response rates. The studied population was also limited to nurses working with older adults in Malta, limiting generalisability. Finally, workers away from work due to long-term illness were excluded.

Studies have previously highlighted that certain types of illness may be more commonly associated with either presenteeism or absenteeism. The identified link between presenteeism, MSDs and CMDs in the present study mirrors previous findings [5]. It has been suggested that such findings may reflect the often recurrent and chronic nature of these disorders [6]. The current findings do not support this, with the timeline of conditions not significantly different between presenteeism and absenteeism episodes. Rather, findings suggest that factors such as reduced symptom severity, greater workability and reduced absence legitimacy may be more important in fostering presenteeism. Workability [15] and beliefs that illness was less severe or less visible [23], have previously been linked with driving presenteeism. As previously highlighted, greater contagion [12] appeared to encourage absenteeism rather than presenteeism, and in conjunction with the aforementioned factors may have contributed to digestive and infectious diseases being more prevalent during absenteeism.

The study highlighted that during presenteeism, workers were less concerned about their illnesses and reported that illness had less of an impact upon their lives than when they avoided work. Such factors do not appear to have attracted much previous research. However, experiencing a greater number of symptoms has previously been linked with experiencing greater illness-related concerns and consequences [19]. Furthermore, those less concerned by illness are more likely to return to work following absenteeism [24].

Presenteeism was largely considered harmful to illness, whereas absenteeism was believed to be beneficial. As individuals traditionally avoid work to foster recovery, the finding was not surprising, however instances of presenteeism being considered as beneficial for health have also been reported [10]. The study revealed that most participants attended unwell when this was expected to be less harmful and avoided work when this was expected to be more beneficial. It has previously been reported that those who believed presenteeism to be a harmful also engaged in less frequent presenteeism and more absenteeism [17]. The current finding supports this.

Individuals were less likely to take treatment during presenteeism, and of those who took treatment during both types of episodes, this was considered more effective during

absenteeism. Whilst treatment may aid attendance when ill [9], the greater frequency of treatment during absence is likely related to the greater experienced symptoms and concerns during these periods. Treatment was also considered less effective during presenteeism, which may also have affected uptake. This may be due to the high percentage of reported organisational causative agents and the perception that presenteeism was harmful. In fact, whilst symptoms were lower during presenteeism than absenteeism, personal control and workability were still quite low during presenteeism whilst illness-related emotion was high. Nurses also had to obtain certification from a doctor in order to avail of absenteeism; this may have led to better treatment options during these periods.

The findings highlight that individuals' illness appraisals may be relevant in determining the studied illness behaviours. This has implications for presenteeism theory that rarely directly addresses such perceptions. Practitioners need to be aware that nurses may base their illness behaviours on their own illness appraisals and should take proactive measures to identify poorly nurses. The study also highlights the high prevalence of conditions such as MSDs and the high level of some perceptions during presenteeism in the studied population. Preventative steps are required to tackle the high frequency of organisational causative agents. Nurses should also be dissuaded from attending work when workability is perceived to be poor. In fact, presenteeism in nurses has previously been linked with increased patient falls, medication errors and lower quality of care [25]. Finally, limited occupational health services were available for the studied population; treatment options for nurses attending when unwell may lead to better clinical outcomes, improved perceptions of illness-related control and fewer future presenteeism and absenteeism episodes.

The study thus highlights the relevance of illness perceptions when making presenteeism and absenteeism decisions, whilst providing an insight into the state of those who attend unwell. Perceptions including the poor levels of workability and personal control, high degrees of illness-related emotion, and belief that presenteeism was harmful to health highlight the importance of tackling this phenomenon.

Key points:

<u>What is already known:</u>

- The influence of illness perceptions on presenteeism and absenteeism decisions has attracted limited attention.

<u>What this study adds:</u>

- Illness perceptions varied between presenteeism and absenteeism episodes. These include perceived illness type, symptom severity, levels of concern, consequences on life, contagion, absence legitimacy, workability, treatment control, perceived impact of presenteeism and absenteeism on illness.
- Participants generally considered presenteeism as a negative state, and attended work when this was considered less harmful, rather than beneficial.

Impact on practice and policy:

- As presenteeism decisions may be informed by illness appraisals, and as perceived illness control was poor and negative organisational causative agents were prevalent, proactive and preventative health measures are important to tackle presenteeism.

Competing interests

None

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Table 1: Illness prevalence during last presenteeism and absenteeism episodes.

Illness	Never experienced illness (%)	Experienced only during SP (%)	Experienced only during SA (%)	Experienced during both SP and SA (%)	*p*-value
MSDs	94 (35)	55 (20)	31 (12)	90 (33)	*
Respiratory disease	166 (61)	32 (12)	40 (15)	32 (12)	NS
CMDs	195 (72)	31(12)	14 (5)	30 (11)	*
Fatigue	199 (73)	30 (11)	18 (7)	23 (9)	NS
Headache	200 (74)	32 (12)	15 (6)	23 (9)	*
Menstrual symptoms	218 (81)	21 (8)	15 (6)	16 (6)	NS
Digestive disease	219 (81)	4 (1)	34 (13)	13 (5)	***
Injury	244 (90)	9 (3)	9 (3)	8 (3)	NS
Infectious disease	250 (93)	3 (1)	12 (4)	5 (2)	*
Post-operative	255 (94)	2 (1)	10 (4)	3 (1)	*

*p< .05; **p < .01; *** p< .001; N = 270; SP, sickness presenteeism; SA, sickness absenteeism; MSDs, Musculoskeletal Disorders; CMDs, Common Mental Disorders.

Percentages do not always amount to 100 due to rounding of figures

Table 2: Illness perceptions during last presenteeism and absenteeism episodes.

Variable	Presenteeism			Absenteeism					
	M	*SD*	Skew	*M*	*SD*	Skew	*t*	*p*	*d*
Consequences[1]	5.13	2.22	.08	6.27	2.49	-.71	-7.15,	***	-.43
Timeline[1]	4.72	2.88	.20	4.84	2.98	.10	-.66	NS	-.04
Personal control[1]	4.39	2.26	.04	4.70	2.71	-.00	-1.87	NS	-.11
Identity[1]	5.11	2.41	-.09	5.87	2.35	-.45	-5.17	***	-.32
Concern[1]	5.88	2.89	-.39	6.39	2.78	-.60	-.2.97	**	-.18
Coherence[1]	7.14	2.40	-.93	7.43	2.25	-1.21	-1.81	NS	-.11
Emotion response[1]	6.07	2.84	-.66	6.32	2.81	-.68	-1.36	NS	-.08
Contagion	1.62	2.42	1.63	2.87	3.22	.72	-6.13,	***	-.37
Legitimacy	6.51	3.15	-.60	7.71	2.78	-1.34	-6.04	***	-.37
Workability	5.03	2.13	-.05	3.46	2.52	.55	8.46	***	.51

**p< .05; **p < .01; *** p< .001; N* = 270; *M*, Mean; *SD*, Standard Deviation, *t*, test value; *p*, significance value; *d*, effect size

[1] Brief Illness Perceptions Questionnaire (B-IPQ) scales

Table 3: Expected impact of presenteeism and absenteeism on illness

	Expected impact of attending work on illness				Expected impact of staying home on illness			
	During presenteeism		During absenteeism		During presenteeism		During absenteeism	
	N	%	N	%	N	%	N	%
Very beneficial	1	0	4	1	55	20	120	44
Beneficial	10	4	14	5	156	58	117	43
No effect	63	23	19	7	41	15	11	4
Harmful	180	67	157	58	17	6	21	8
Very harmful	16	6	76	28	1	0	1	0

Percentages do not always amount to 100 due to rounding of figures