

**Technology infiltration: permeable boundaries and work-life spillover experiences among academics in the United Kingdom during the COVID-19 Pandemic**

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**Technology Infiltration: Permeable Boundaries and Work-Life Spillover Experiences among Academics in the United Kingdom During the COVID-19 Pandemic**

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**Technology Infiltration: Permeable Boundaries and Work-Life Spillover Experiences  
among Academics in the United Kingdom During the COVID-19 Pandemic**

**Abstract**

**Purpose** – This study explored the challenges academics faced with work structures during the COVID-19 pandemic and their implications for their work-life balance (WLB).

**Design** – Relying on the interpretative paradigm and the qualitative research method, the dataset consists of semi-structured interviews with 43 academics in the United Kingdom.

**Findings** – Our findings indicate that academics in the UK experience issues around increased boundary permeability between work and nonwork domains and role overlap, which engender the transfer of negative rather than positive spillover experiences and exacerbate negative consequences to the well-being of academics. ICTs also reinforced gendered work-family boundaries and generated more negative work-life/family spillover for women than for men.

**Practical implications** – Higher Education Institutions (HEIs) need to address ICT-related health issues through better work designs and HR initiatives that respond to the health requirements of academics. Policymakers should be futuristic and ensure comprehensive work-life policies for academics, which are necessary for humanising overall organisational well-being.

**Originality** – Although COVID-19 challenges are common to all workers, the experiences and effects on specific workers (in this case, UK academics) within specific national jurisdictions play out differentially, and they are often experienced with different levels of depth and intensity.

**Keywords:** ICT, work-life spillover, higher education institutions, academics, United Kingdom

## Introduction

The spread of the novel coronavirus (COVID-19) pandemic to over 150 countries, leading to a global crisis and forcing many economies to shut down (World Health Organisation, 2020), led to many organisations adopting teleworking and remote working practices, particularly working from home (Nash and Churchill, 2020). In a sense, this formed part of the global cost and impact of the crisis, which clearly has implications for academics' work and family life and the broad literature on employee well-being. The emphasis on UK academics is due to their familiar experiences with remote work (and telework), even though the COVID-19 pandemic altered the dynamics of remote work. According to the Office for National Statistics (ONS; 2020a), remote/homeworking increased from approximately 5% pre-pandemic to 46.6% at the beginning of the lockdown and remained high, at least until the pandemic's peak. While there are currently no official statistics for UK academics who worked from home during the pandemic, most universities in the UK were reported to have closed their physical doors and transitioned to online delivery (ONS, 2020b).

The work-from-home debates have oscillated around the degree, type and levels of role involvement, competence needed, and activities undertaken (Cottingham et al., 2020; Akanji et al., 2022). The whole idea of managing and controlling workers beyond the traditional occupational environment or in workers' homes raises several personal, organisational and societal concerns (Nash and Churchill, 2020), such as the decreased perception of employees' flexibility-ability, lower levels of productivity, loss of managerial control and social isolation (Adisa et al., 2022). Now that the pandemic appears to have passed its toughest phase, with academics beginning to engage in more in-person interactions on campus, at least for their teaching roles, it is important to reflect and examine their experiences of managing their work and nonwork lives during the crisis. Therefore, this study explores a fundamental question: what challenges did academics face with work structures during the pandemic and its

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implications for their work-life balance? Therefore, we consider academics’ work structures, including the intensified use of technology and the increased regularity of working from home during the COVID-19 pandemic. The COVID-19 crisis offers a unique opportunity to examine these work structures and the experiences of work-life spillover as the subjective, role-based component that taps the degree to which academics experienced intrusion between their work and nonwork life. We locate our work broadly within spillover theory and work-life balance.

Undertaking a study such as this is valuable since it could reflexively furnish organisations with rich insights into remote/teleworking experiences and their implications for work-life balance. Hence, it would stimulate organisations to intensify their efforts in facilitating human resource management strategies that could improve academic career experiences. Specifically, this paper contributes in two ways. First, we contribute to theorising work-life spillover by advancing our knowledge of academics’ experiences with work-life spillover by demonstrating how technology infiltration may increase border permeability and intensify negative spillover experiences, especially during crises. Second, we call attention to the need to avoid counterproductive behaviours caused by ICTs in the workplace by creating reasonable structures, processes and employee-compassionate and supportive WLB policies, particularly during times of crisis. We argue that the routine invasion of academics’ nonwork time by work time through technologies structured to manage workers away from the workplace has weighty implications for perceptions of job satisfaction or discontent and feelings of detachment. This, in turn, nurtures hostile workers’ responses and behaviours with potential disadvantageous effects, resulting in organisational inefficiency, loss of quality and continuous production and profit. Essentially, comprehensive work-life policies for households are necessary for humanising overall organisational well-being.

The paper is structured as follows. In the next section, we review the salient literature on work-life balance/spillover and then provide an overview of our empirical research focus. Next, we

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3 explain our research methodology. In the penultimate section, we present the findings from our  
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5 empirical inquiry. We conclude the paper by discussing our findings and research implications  
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7 for theory and practice.  
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### 10 11 **Work-Life Balance, Spillover and ICT** 12 13

14 Work-life balance equates to an individual's ability to successfully integrate work and nonwork  
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16 roles with little or no role conflicts (Barber et al., 2019). The concept of WLB is  
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18 organisationally targeted at facilitating the individual worker's well-being without adversely  
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20 affecting organisational productivity (Beauregard, 2014; Boiarintseva and Richardson, 2019).  
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22 It should invariably promote employee flexibility regarding when, how, and where work can  
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24 be performed (Adisa et al., 2022; Akanji et al., 2022). Many conceptualisations and theories  
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26 have been espoused on work-life/family balance. Guest (2002) and Naithani (2010) include  
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28 segmentation, spillover, compensation, instrumental and conflict theories. Several academics  
29  
30 (e.g., Dilworth 2004) within the work-family literature have pointed out the mix-up created by  
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32 the use of multiple concepts such as spillover, role strain, role permeability, stress crossover,  
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34 stress contagion, compensation, segmentation, conflict, congruence, instrumental, integrative  
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36 and work-to-family and family-to-work conflict. Dilworth (2004) has called for better lucidity  
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38 of the terminology used in the literature.  
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44 One useful way of conceptualising the relationship between work-life and personal-life is  
45  
46 through the notion of spillovers. In contrast to the underlying assumptions of segmentation  
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48 theory, where work and life are regarded as two distinct spheres of an individual's life and do  
49  
50 not influence one another (Kreiner et al., 2009), spillover theory suggests that work and life are  
51  
52 integrated and cannot be separated (Schnettler et al., 2020). However, work and family domains  
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54 are distinct settings with varied features and tasks. Moreover, sometimes, work-home  
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56 boundaries become blurred, permeable, and infused in each other (Adisa et al., 2022), with  
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spillover occurring as individuals operate as conduits emitting and transferring negative and positive feelings within both milieus (Schnettler et al., 2020).

The concept of spillover occurs where the worker is highly involved within work and nonwork roles or when there are pressures and overlap between issues that border on “integration (of time, place, people and activities within the work), personality (behaviour, mood), skills, and cultural pressures at work or home” (Staines 1980). For (Googins, 1991, p. 9), “spillover refers to positive and negative feelings, attitudes, and behaviours that might emerge in one domain and are carried over into the other”. Spillover theory suggests that individuals transmit their feelings, attitudinal approaches, skills and behaviours from the work domain into their personal life and vice versa (Sok et al., 2014). These role experiences can positively or negatively impact an individual’s experience or role satisfaction within the work and nonwork domains (Catano et al., 2010).

In the context of the COVID-19 pandemic, separating the working environment from the home/living environment and blending work and family time was one of the difficulties of working from home (Geraghty et al., 2022). Therefore, given that the majority of those who worked from home experienced imposed integration of the work and home domains, it raises a concern regarding the deliberate awareness of preventing negative work-to-home spillover (Adisa et al., 2022; Syrek et al., 2022). Furthermore, studies such as Wang et al. (2021) have reported that the reduced social support from coworkers during the pandemic was another challenge for employees working from home. This is because working from home may result in isolation, prevent employees from collaborating with their coworkers, and limit their access to supervisors and managers, thus making it more challenging to feel like a team member and receive help when necessary, exacerbating negative spillovers. However, this is not to say that the pandemic only resulted in negative spillover experiences, as a few studies have also identified that employees who employ effective boundary management (crisis) strategies tend

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3 to experience positive spillovers (Metselaar et al., 2022) or reduce excessive negative spillovers  
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5 (Adisa et al., 2022).  
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8 Spillover is often segmented into work-to-family and family-to-work categories (Dilworth,  
9 2004). Numerous studies utilising the work-to-family and family-to-work categories  
10 (Dilworth, 2004; Cottingham et al., 2020) have found, among many other findings, that gender-  
11 based divisions still exist, both in time obligations and gender-segmented tasks in the division  
12 of housework and childcare chores. Studies such as Sok et al. (2014) have identified that  
13 families could suffer negative spillover if they have several young children, which could drain  
14 working parents/caretakers. More specifically, in a crisis such as the COVID-19 pandemic,  
15 studies such as Adisa et al. (2022) have demonstrated that academics working from home may  
16 suffer from inflexible rather than flexible boundaries, which may result in experiences of  
17 negative spillovers. In a different study, Akanji et al. (2022) argued that the COVID-19 crisis'  
18 increasing blurring of the lines separating work and family life also contributed to the finite  
19 nature of resources (physical, mental and emotional), which means that repeated demands in  
20 one domain reduce the availability of resources and limit what is left for optimal functioning  
21 in the other domain, leading to negative work-to-home and home-to-work spillover effects.  
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41 Although spillover theory is well known in the WLB subfield, there are criticisms of this model.  
42 According to Guest (2002), spillover theory is generally referred to as the generalisation  
43 model/theory. However, this generalisation allows the model to be useful for this exploratory  
44 study (Staines, 1980; Schnettler et al., 2020). Spillover theory is also instrumental when  
45 detailed propositions about nature, causes, and spillover consequences are identified for the  
46 specific study (Guest, 2002). Although spillover is usually seen in either positive or negative  
47 light, they can coexist to some extent (Li et al., 2021). For instance, a job that provides a high  
48 degree of negative spillover due to long hours and stress generated by long working hours can  
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transfer or spill over to the home life domain. At the same time, the positivity of a high salary paid job could enhance positive family experiences (Schnettler et al., 2020).

Furthermore, since the advent of technology, the work environment has become more dynamic, generating implications for the future of work (Barber et al., 2019). Several ICTs have emerged to enhance flexible working (e.g., telework) that promotes work-life balance (Boell et al., 2016). Technology has successfully created hybrid workspaces that promote work respatialisation and changed organisations' structural design and managerial practices (Holtgrewe, 2014). Technology continues to engender the creation of virtual offices and promotes remote/teleworking among employees (Boell et al., 2016). In a sense, employees can control and manage how they combine their work responsibilities and personal commitments (Schnettler et al., 2020). Sok et al. (2014) argue that ICTs can boost the psychological well-being of employees absent from home and family.

Despite the benefits of using technology at work to enhance work-life balance, extant research also highlights its adverse effect. Note that there is an increasing concern that technology usage after regular work hours engenders significant implications for WLB (Barber et al., 2019; Siegert and Löwstedt, 2019). Many studies have argued that ICTs increase the level of work interference in the domestic space and increase permeability between the two domains, making it difficult to maintain boundaries (Ladkin et al., 2016; Fernandez and Shaw, 2020; Nash and Churchill, 2020). Moreover, in the context of the COVID-19 pandemic, studies have revealed that the rising reliance on ICTs has the potential to increase technostress, a form of stress that can be brought on by using technology (Ma et al., 2021). For instance, Califf and Brooks (2020) noted how technostress resulting from information overload, technology malfunctions, an unbalanced work-life schedule, and cyberbullying could contribute to burnout among teachers. In another study, Mushtaque et al. (2022) found a negative correlation between technostress and readiness to employ online learning among academics during the pandemic. Their research

emphasised how technostress brought on by a mismatch between academics and other university-related factors can negatively affect academics' performance, resulting in job burnout and even escalating the perception of job insecurity. Against this backdrop, we examine academics' work structures, including the intensified use of technology and the increased regularity of working from home due to the COVID-19 pandemic.

### **Work-Life Balance in Academia**

Extant literature has moved forward the debate on the work-life balance of academics, especially in the Western hemisphere, where technology usage is well-versed (Catano et al., 2010; Husin et al., 2018). Generally, academics are characterised as having large amounts of work autonomy and flexibility; they are often their own supervisors despite being employees (Rafnsdóttir and Heijstra, 2013). Regardless of the high level of work flexibility, academics also battle with work intensity and long working hours, resulting in severe burnout symptoms, low levels of job satisfaction, high stress levels, sleeplessness, and struggles with achieving WLB (Husin et al., 2018). More often than their men counterparts, women academics face these challenges to the detriment of their physical and psychological well-being, given that they take up more domestic work than men (Rafnsdóttir and Heijstra, 2013).

Specifically, the focus on UK academics relates to their familiarity with working remotely, although the COVID-19 pandemic has changed the dynamics of remote/teleworking, particularly for academics (Adisa et al., 2022). This is because remote working may be problematic for academics who often find their jobs mentally taxing and sometimes physically and emotionally exhausting due to the need to "possess a superhero ability to multitask" (Times Higher Education, 2016), among several commitments besides teaching that needs to be fulfilled. Accordingly, it may be challenging for academics to cope, particularly in the home environment where the freedom to engage productively may be lacking due to the perceived

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blurring of boundaries, as was the case during the COVID-19 crisis (Adisa et al., 2022). For academics working from home with children’s presence, finding a suitable workspace poses a different challenge. In addition, fostering a positive attitude toward work and personal life amidst the constant usage of ICTs to perform work-related tasks may also engender significant threats to their WLB. Thus, the higher education (HE) sector as the research context was deemed appropriate to examine academics’ work-life spillover experiences during the COVID-19 lockdown. Even though this study focused on academics, we recognise that not all HE staff had the choice to work remotely, as some nonacademics (especially essential workers) were required to work on campus.

More broadly, academics appear to have weaker boundaries between their work and life domains, which makes them prone to work-home boundary violation, where a total mental disconnection from work proves abortive (Ashforth et al., 2000; Kreiner et al., 2009). For Santos (2015), academics’ WLB experiences can be grouped into two categories. On the one hand, they experience complementarity between work and family; on the other hand, work and family are subordinates of each other. Furthermore, work and family complementarity, which was most evident in their study, was based on the assumption that work and family/personal life are two distinct roles. Thus, based on the differences in the nature of the two roles, academics find it arduous to prioritise rather, they make them complementary to each other (Santos, 2015). The subordination between work and life depends on the academic’s personal identity, values and career ambitions. Research suggests that older academics are often family-oriented; hence, they slow their work pace to make themselves available for other nonwork-related activities (Toffoletti and Starr, 2016). Conversely, younger academics tend to be career-oriented, and with technological advancement, they allocate a significant amount of time to work over their personal commitments. In addition, studies such as Santos (2015) have also noted that the effects of work-family complementarity and boundary-crossing in relation to

work-life strategies vary and depend on academics' career stage. The study suggests that early-career academics may more likely encounter work-life conflict since they frequently juggle personal obligations with new teaching and research commitments. Conversely, mid-career academics may find it easier to achieve work-life balance since they are more likely to have more time to establish work-home routines. However, late-career academics may be more likely to enjoy work-family flexibility due to their potential greater control over their workload and obligations.

Therefore, it will be interesting to examine the challenges academics encountered with work structures during the pandemic and their effects on their WLB in light of the difficulties surrounding the COVID-19 crisis and the new strategies being debated or implemented by employers to ingrain the hybridity of current work designs, which permit academics to work from the traditional workplace and increasingly at home.

## Methods

This study adopted a qualitative method deemed fit to explore in-depth academics' lived experiences to provide rich insights into the researched phenomenon and allow academics to provide a detailed account of their experiences with work structures during the COVID-19 crisis. This study was guided by interpretivism, allowing the researchers to discover rich narratives from individuals' lived experiences (Saunders et al., 2019). This approach was used following the authors' interest in obtaining an in-depth understanding of the researched phenomenon by drawing inferences from the patterns that occurred during the event (Creswell and Creswell, 2018).

Our study adopted purposive and snowball sampling. Given the decision to focus on the HE sector – where the researchers belong – we began searching for participants starting with some of our friends and acquaintances who further nominated some of theirs that fit our research

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enquiry. While this may come with some ethical considerations, such as selection bias towards social groups and power imbalances (Saunders et al., 2019), we ensured that fieldwork interactions were established in accordance with the research project by providing participants with an information sheet to ensure that they were well informed of the research purpose and promoting transparency throughout the process. Moreover, these sampling techniques were cost and time effective for our kind of research that does not rely on funds from major grant-awarding bodies. Participants were solicited across the four geopolitical regions in the UK – Wales, Scotland, Northern Ireland and England. After completing 38 interviews, we reached data saturation, where no new information was recorded, but we conducted 5 more interviews to substantiate the existing themes. Overall, 43 academics across 12 universities were recruited as our study participants and comprised academics from all university ranks (see Table I for detailed demographic details).

*Please insert Table I about here*

Data were collected using video conferencing platforms, including Zoom, Skype and Microsoft Teams. This communication medium was deemed appropriate to reach a wider demographic of academics in the UK. Furthermore, semi-structured interviews using open-ended questions were considered suitable for allowing the participants to express their views on the subject in a detailed manner (Creswell and Creswell, 2018). The interviews, lasting an average of 40 minutes, were audio and video recorded and stored on an encrypted storage device for security purposes. In addition, following standard research ethical procedures, pseudonyms (e.g., Participant 1, 2...43) were used to conceal the participants’ real identities (Saunders et al., 2019), as promised to the participants in the consent form.

To address our main research question, we created an interview protocol (see Appendix I) based on the research objective and literature review, consisting of leading questions

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3 complemented by follow-up and probing questions based on the interviewee's replies. The  
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5 interviews began with open-ended questions. For instance, the participants were asked to  
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7 describe the nature of their work during the COVID-19 crisis, the challenges (if any) of using  
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9 ICTs while working from home, and the implications or consequences of these challenges for  
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11 their work and nonwork lives. These questions enabled the researchers to investigate if and  
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13 how the academics experienced work-life spillover. It propelled the participants to describe  
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15 their perceived ability to manage their work-related and nonwork-related roles while working  
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17 from home. It also enabled the researchers to examine the impact of ICTs on increasing border  
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19 permeability, leading to work-life spillover. It brings to our understanding the relationship  
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21 between ICT and work-life spillover in the context of the changes to work conditions as a result  
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23 of the pandemic. Along with building a strong rapport with the interviewees, we also ensured  
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25 that the interview questions were objective, non-threatening and non-embarrassing to reduce  
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27 social desirability bias throughout the interviews.  
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34 Following the interviews, data were transcribed by the second and third authors, after which  
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36 the first author carefully reviewed the recordings to ensure that the information gathered was  
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38 captured and recorded verbatim. Furthermore, the first and second authors adopted the thematic  
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40 analysis procedure (TAP) to manually uncover the main themes and sub-themes that emerged  
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42 from the interview extracts. TAP enables researchers to discover key themes arising from data  
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44 by focusing on the similarities and differences within the data (Braun and Clarke, 2006). To do  
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46 this, we developed a coding frame (see Table II). Starting with the open-order coding  
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48 technique, we created several thematic categories and used axial coding to further categorise  
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50 the data into higher-order themes (Strauss and Corbin, 1998). Following the infusion of work  
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52 into the academics' domestic space, we also uncovered evidence of the spillover effect, where  
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54 negative and positive feelings, attitudes, and behaviours were transferred within both milieus.  
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56 After uncovering the key themes, the third author carefully compared the notes to reflect  
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critically on the information gathered. Finally, all authors revisited the themes to ensure that the patterns were consistent with the research questions. The patterns revealed the experiences and understanding of academics relating to their work-life balance.

*Please insert Table II about here*

**Findings and Discussion**

**Experiences of academics’ work-life spillover during the COVID-19 pandemic**

Our findings were divided into five key themes: (1) technostress-induced spillover, (2) work demand and intensification, (3) intrusion of work and nonwork roles, (4) gender role strain and spousal support, and (5) health and emotional challenges.

*Technostress-induced spillover*

A dominant spillover factor raised by all the participants is using ICTs to perform their work-related responsibilities. The use of ICT in UK higher education institutions (HEIs) is not novel, as academics utilise them for teaching and nonteaching (e.g., meetings and administration) responsibilities (Nash and Churchill, 2020; Adisa et al., 2022). In our study, the common ICTs identified and used by the participants included Zoom, Microsoft Teams, Skype, Blackboard Collaborate, Panopto, Moodle, Canvas, Padlet and Kahoot. However, our findings show that the difficulties with using ICTs for many academics (particularly those who were less tech-savvy) were having such a vast array of ICTs that it became overwhelming to learn and interact with them, especially within a short timeframe due to the sudden advent of the pandemic. Our participants claimed to have found it challenging to deal with such issues, especially given that new technologies not necessarily popularised within academia pre-pandemic were developed to cater to the transition to online delivery during the pandemic. With the crisis leading to changes in academics’ work structures, a significant finding is that ICTs led to stress-related spillover experiences for most participants (at least 70%), regardless of their age or career

stage. The prevalence of ‘technostress’ – an adaptive deficiency and stress-inducing situation caused by the inability to cope with new technologies (Ma et al., 2021) – triggered negative spillover experiences among most academics. The following quotations typify some of the shared views of the respondents:

*Some of these virtual platforms are unfamiliar to me because they are just too many; I’m learning about them as I go. I encounter several technical difficulties, especially when using them during the pandemic. For example, when students were unable to see the lecture slides that I thought were displayed on the screen, I had to spend time speaking to the technical team [from home] for assistance. This was extremely difficult for me because it was mentally and physically draining, let alone embarrassment. (Participant 19)*

*It is annoying and frustrating that although working from home should, in theory, bring me closer to my family, I discovered that having a constant online presence [during the pandemic] is equivalent to working in an office away from home. It’s worse if you are a module leader or take up administrative responsibilities because the university requested us to respond to students’ issues within 48 working hours. When you have to perform other things besides administrative work, such as teaching and research, how do you accomplish this aim by responding to a tonne of emails during regular business hours? (Participant 1)*

The above quotes, like many others, revealed that ICTs contributed to technostress. The participants implied that the unpreparedness of their universities for the pandemic, similar to most other organisations even outside of academia, increased the demands of working from home and changed their work structures compared to pre-pandemic conditions. For example, the increased need for synchronous and asynchronous teaching meant that the academics needed extra private time to record lectures, upload lecture materials and attend to several emails (especially from students), which could have been better managed in a face-to-face learning environment. The common notion was that the increased usage of ICTs during the pandemic engendered more work pressure than pre-pandemic and induced technostress for academics. For instance, Participant 25 remarked, “we were treated like lecturers that were originally engaged to do online teaching”.



Similar to other studies (Ayyagari et al., 2011, Harris et al., 2021), our findings demonstrate that during the COVID-19 crisis, technostress from information overload, rising workload, and prolonged online presence caused panic, stress, mental fatigue, and physical exhaustion for many academics. Most participants felt compulsive and forced to constantly connect to work, respond to work-related issues in real time, and exchange continuous updates with work colleagues. Consequently, they made references to the spillover of stress, anxiety and exhaustion (both physical and mental) between work-life domains. Broadly, they implied that fatigue resulting from navigating several ICTs and dealing with prolonged online presence impacted their ability to spend quality time and enjoy considerable satisfaction from interacting with family members despite being at home with them. Recent studies such as Hung et al. (2015) and Harris et al. (2021) have confirmed technostress as a managerial problem across organisations, mostly in technologically dependent working environments (e.g., HEIs), where constant online presence is required at work. A corollary to the increased use of ICT is around work intensity tipping over and spilling into family or nonwork relationships. For instance, when asked if their constant use of ICTs had implications on their attitudes and behaviour with family members, some participants (both male and female) reported a transfer of aggression and negative behaviours resulting in work-to-family negative spillover experiences:

*The stress from persistent online presence at work can be dangerous for family members because it can transmit negative attitudes. (Participant 2)*

*I noticed that my regular use of ICTs, even on the weekends, enabled the transfer of excessive hostility to others, particularly my children, who at intervals demanded attention and became recalcitrant when not given. (Participant 16)*

These experiences emerge from technostress, labelled psychological responses to negative experiences of using ICTs in modern workplaces (Ma et al., 2021), thus generating negative spillover experiences. Furthermore, the COVID-19 crisis made it more common for negative work-life spillover experiences to occur, leading to increased mental exhaustion for many academics than pre-pandemic. This is especially true for those who are poor at self-care and

even worse for those who exhibit some degree of masochism. Therefore, their experiences of work-to-family or family-to-work spillovers are inevitable, as they transfer negative behaviours and attitudes between both milieus. Our participants' negative work-life spillover experiences corroborate four out of five techno-stressors discussed in Tarafdar et al.'s (2011) study. First, academics experienced techno-overload resulting from ICT use, necessitating faster and longer work, such as responding quickly to emails and organising work meetings. Second, they were also exposed to techno-invasion associated with their constant connectivity to work that intruded into their personal time and space. Additionally, techno-complexity emerged from the need to find time and exert efforts to learn and interact with the diverse ICTs needed to perform their work-related responsibilities. Last, ICTs expose academics to techno-uncertainty, depriving them of the chance to develop a core understanding of initial technologies resulting from constant updates. **While these encounters are not particularly novel to academics, they were not as prevalent pre-pandemic.**

#### *Work demand and intensification*

An assessment of the nature of academics' work during the heat of the pandemic also revealed that working conditions deteriorated, with most participants experiencing an increased workload and more intense work demands than pre-pandemic conditions. For the participants, working from home required extra effort, leading to a dramatic increase in long working hours for the majority. The average working time was 47 hours before COVID-19 and 61 hours during COVID-19. The following quotations typify some of the shared views of the respondents:

*Working from home made it difficult to maintain the self-discipline required to work from 9 am to 5 pm. I have my iPad, mobile phone, and laptop, and one of these gadgets will be with me at any point in time. Therefore, you never know when you start reading an email that pops up and feel compelled to answer even when it is outside my normal working hours. The reality is, I will still have to answer at some point. (Participant 11)*

*Throughout the pandemic, I worked an average of over 72 hours weekly... I always felt like I was living on these online platforms... It appeared that there was no turning off from the moment you woke up until late at night ... it was like living at work. (Participant 27)*

Notably, our research demonstrates that frontline academics who held administrative positions further up in the leadership cadre suffered longer working hours (mostly unregulated) and work intensity:

*There was an increase in my workload. For instance, our teaching was extended to 15 weeks against the usual 12 weeks in my university. This was in an attempt to give more support to the students. In addition, I organised an extra hour for Q and A [questions and answers] for the students (as a way to further support them). At one point, I had approximately 176 pupils, just 20 of them showed up every week, and they were the same students. These Q and A sessions were not time-tabled, but I had to do it to reduce the failure rate and avoid having to mark more scripts as resits, given my previous experiences. All these were due to the work structures during the pandemic. The above is in addition to the fact that I was a module leader for many modules and had to create the contents and coordinate the visiting lecturers. With all these, I found it very challenging and impossible to work from 9 am to 5 pm. (Participant 18)*

Generally, as academics witnessed the relocation of work into their domestic space, the time spent attending to work-related responsibilities increased drastically. This led to working from morning to late nights and more weekends than usual while attending to growing demands from an intense high-performance work environment. Particularly, the rising use of ICTs when working from home was the main cause of the lengthy and unstructured work hours, as several participants highlighted their experiences with “dwelling on these online platforms,” “increasing virtual meetings,” and “unending emails”. This growing and continuing phenomenon intensified the spillover of work to home as the boundaries between work and home became blurred (Fernandez and Shaw 2020).

*Intrusion of work and nonwork roles*

Boundary blurring due to the lockdown negatively impacted the ability to manage work and nonwork obligations across a vast majority of participants. Following the experiences of work

intensification and increased work demands, most participants struggled with their WLB as they perceived significant intrusion of work into their personal and family space and vice versa:

*It isn't easy to delineate between work and nonwork activities, especially when working entirely from home. While it is true that as academics, we ordinarily work from home, the pandemic conditions made it more intense than ever, especially as work dragged till late and emails kept flying around beyond 5 pm. This notwithstanding, it can be beneficial working from home. I walked my dog every morning approximately 8 am after having my bath, prepared something light for breakfast and got on with work, knowing fully well that I would work till late. Even now that most academic activities are back to face-to-face interactions, I'm still struggling with my WLB (Participant 17)*

In addition, the majority of participants mentioned cutting back on their time spent on personal and familial activities due to being overwhelmed by their work-related activities. Therefore, regardless of participants' marital status, the time spent on personal or family matters was considered inadequate:

*It was harder to separate work and nonwork roles under the pandemic circumstances, especially for me, who was also doing my doctorate at the time. My kitchen table was permanently my study, and when working, family calls kept creeping in...students became more demanding as they found themselves in the unshattered water. At a point, I had to disconnect my official email from my mobile phone to reduce the pressure and retain my sanity. COVID-19 was an extreme case of highly competing demands from work and family commitments. My children kept complaining about not getting enough attention... Work-life balance has never been more blurry. (Participant 33)*

Like the above quotation, participants frequently prioritised their work over personal and familial roles, leaving them with little or no time to attend to other nonwork-related aspects of their lives. While some academics reported having more time with their family, the majority mentioned that familial responsibility sometimes interfered with their work activities, which led to the transfer of negative emotions from home to work (family-to-work spillover). Likewise, job dissatisfaction was another effect of feeling detached from both work and home:

*...Even more terrible was that the lockdown prevented my kids from attending school. I sometimes had to play the role of a teacher to my kids, and when I could not do so because of my work, they kept making distressing noises that interfered with my ability to get work done. We occasionally yelled at one another nonstop. I was on the verge of insanity. (Participant 22)*

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3 *My work definitely affected my nonwork life at the height of the pandemic. I recall vividly*  
4 *how I did not step out of my house in the first one hundred days of the lockdown, and I*  
5 *did not realise it as I was overwhelmed with my work... My house was like a business or*  
6 *call centre because the [virtual] meetings were very frequent...the use of digital*  
7 *technologies triggered an imbalance in my work and nonwork roles, and I felt extremely*  
8 *detached and dissatisfied. (Participant 5)*  
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10 Our findings are also consistent with the study of Ladkin et al. (2016), which found that  
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12 utilising ICT increases the permeability between work and nonwork roles and exacerbates work  
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14 intrusion into the domestic sphere. Although spillovers are not a new phenomenon, the  
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16 COVID-19 crisis brought them to a new level of intensity due to the increased degree of  
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18 boundary blurring brought on by being confined at home. Compared to pre-pandemic  
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20 conditions, many academics experienced more negative spillovers from work-to-family and  
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22 family-to-work as the feelings and behaviours emerging from one domain were carried over to  
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24 another (Dilworth, 2004; Delanoeije et al., 2019).  
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30 A closer examination of the work structures during the crisis indicates that ICT builds bridges  
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32 across the work-life border. Individuals are involved in cross-border activities due to the  
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34 increased border permeability of using ICTs (Siegert and Löwstedt, 2019; Adisa et al., 2022),  
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36 facilitating work-life spillover experiences. The ICT-driven intrusions from constant  
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38 connectivity to work could deplete individual resources necessary for performing in the  
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40 nonwork domain. Moreover, it is challenging for individuals with less control over what  
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42 penetrates these boundaries, resulting in the need to face the consequences (Li et al., 2021).  
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44 Consequently, work and family microsystems increase the possibility of boundary permeability  
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46 and the transfer of negative and positive spillover of behaviours or emotions (Grzywacz et al.,  
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48 2002). Notably, this study is primarily a case of negative work-life spillover linked to increased  
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50 levels of distress, job dissatisfaction, work-life detachment and other problematic outcomes.  
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52 Note that our study does not support pre-COVID-19 findings that ICT helps workers reconcile  
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54 work, family, and nonwork roles, leading to improved individual health and overall well-being  
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56 (Ter Hoeven and Van Zoonen, 2015; Ladkin et al., 2016).  
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### Gender role strain and stress

The gendered nature of WLB dilemmas continues to threaten individual well-being, further exacerbated during the COVID-19 crisis. Our findings reveal that the female participants experienced excessive overlap between their work and nonwork roles, which led to higher spillover levels than their male counterparts:

*During the pandemic, I had a routine. I would go to bed approximately 9.30 pm, wake up at 2 am and then start my work till my children woke up approximately 7 am...once they woke up, I couldn't function anymore because they do come up with many things for me to help them with... If I don't get up very early to start working, I become frustrated during the day, which then turns into irritation and anger... I usually sacrificed my sleep, engaged with university work before family duties in the morning, and switched back to work (Participant 9).*

*It was a tough one during the pandemic. I have three young children, a husband, my mother and my father-in-law, who also live with us...they all depend on me to care for them alongside doing the house chores and my paid job... I don't have any Au pair, so having a balanced life wasn't possible for me. It's not a matter of who does what with the domestic chores. My culture dictates that a man shouldn't be involved in household chores...all domestic chores are done by the woman (Participant 35).*

As Participant 35 expressed, culture – especially those with deep-rooted patriarchal ideologies – is a crucial part of the decision regarding the division of domestic labour within the home (Adisa et al., 2019). Therefore, regardless of being resident in the UK – a country known for its egalitarian values – most immigrant and migrant academics from patriarchal societies upheld their cultural traditions, where the women shouldered the bulk of domestic work. This is not to say that non-immigrant academic women did not shoulder more domestic responsibilities than men; rather, there were significant variances compared to their counterparts.

Interestingly, most male participants expressed their appreciation for spousal support from their partners:

*My wife teaches part-time (three days a week), but the other two days involve planning for her sessions, making it more of a full-time job. However, I could focus and work more effectively because she was present, and I didn't have to worry about childcare or housework on those other two days, and for these, I truly appreciate her. However, there*



*were occasions when the pressure heightened, and she challenged me for not being supportive. There have been times when I was supposed to assist with loading the dishwasher or washing machine but got carried away with work. She usually becomes upset, but my mind is actually at work. (Participant 4)*

The above quote demonstrates that even amid the COVID-19 crisis, women continued to shoulder a significant amount of unpaid domestic work in addition to their paid jobs. Women are generally saddled with maternal responsibilities and stuck in an endless circle of caring for kids, husbands, and parents-in-law. One would anticipate that the COVID-19 crisis would significantly blur some gender norms, given that men being at home due to the lockdown would offer considerable assistance in reducing the burden of domestic chores on women. However, despite being appreciated by their male partners, many women in our study felt their partners needed to take up more or an even share of the household chores. For them, it is beyond the physical activities (e.g., cleaning and preparing family meals) but also sharing the mental load associated with running the household:

*There is a lot to do around the house, and men need to take on more of these. For instance, planning meals and playdates, clearing out children's outgrown clothes, remembering costume days and other social activities are subsumed into women's daily lives. (Participant 28)*

As seen in the quotes above, the impact of gender (roles) within the academic community regarding WLB cannot be overlooked, given the differences associated with and ascribed to men who are traditionally seen as breadwinners and women as homemakers (Nash and Churchill, 2020). Additionally, the work structures were unlike the pre-COVID-19 era, when most women reported moving from their first shift at work (mostly ending in the late afternoon) to the second shift at home (i.e., household duties in the evening) (Cottingham et al., 2020). Female academics in this study (especially those with dependents) reveal a case of back-to-back shifts between work and nonwork commitments. This meant they were engrossed in work and nonwork duties at several intervals, leading to stress and role strain.

Furthermore, the inadequacy of familial or spousal support structures during the COVID-19 crisis exacerbated the incidence of work-life conflict. These findings are consistent with Jackson's (2010) study, which shows that women who combine work with multiple domestic responsibilities face serious personal challenges, career setbacks, and an increasing number of women who rebel against the traditional family structure, increasing work-family conflict. Similarly, studies suggest that due to gender role socialisation, men and women are distinct in their usage of resources (i.e., time, energy and attention) (Toffoletti and Starr, 2016). Men make fewer trade-offs to harmonise work and family responsibilities (Delanoëje et al., 2019). In contrast, women are more concerned about integrating work and family obligations and are frequently involved in more border-crossing activities, leading them to experience more work-to-family and family-to-work spillovers than men (Dilworth, 2004; Schnettler et al., 2020).

#### *Health and emotional challenges*

The consequences of work-to-home spillover were further exacerbated by the COVID-19 crisis and had significant implications for academics' health and emotional well-being. Many participants reported struggles and tensions with managing work and nonwork activities, which exacerbated underlying health issues and emotional disorders. The following responses exemplify the health and emotional challenges encountered by some of the participants:

*During the pandemic, it was more physically, mentally, and emotionally taxing. To be honest, it had never been this difficult since I started working in academia more than six years ago, but this period called for a deep reflection. I lost my step-sister (46 years old) to hidden stress during the pandemic, and she worked at a university too. Part of the challenge was sitting for too long while working from the kitchen. It was scary...but for my dog, I would have missed my daily walk-out many times as I struggled to balance things. Therefore, I have seen the need to look after myself. I put a regimented eating pattern in place, especially after realising I had gained a lot of weight. (Participant 13)*

*Because I was in a toxic relationship at the time, working from home gave me anxiety. Working away from home was a way of escaping from the home pressure because some things could have been better contained in the office...but it became apparent that everyone at home could feel the frustration (Participant 32).*



*I live alone, so working from home wasn't a palatable experience because I struggled with depression from being isolated. It was mentally exhausting and emotionally draining, and I once passed out in front of my laptop without realising it. Spending so much time on virtual platforms, with increased work demands, also affected my social life and my ability to get a partner. I felt like the universities turned our homes into worksites...there was just so much work-induced physical and psychological stress (Participant 15).*

Some participants raised significant concerns regarding their emotional state while working from home. They emphasised how the pandemic conditions led to a significant decline in student engagement compared with pre-pandemic conditions, which resulted in high assignment nonsubmission rates and extensions, multiple resubmissions, unending emails, and increased teaching weeks, adversely affected their emotional stability and led to negative spillover experiences:

*While I will not contest the beauty of technology in ensuring the continuous delivery of lectures during the pandemic, it was more challenging for me to measure students' engagement levels. For instance, I had to put on my video when delivering my live lectures, but the students didn't have to. Therefore, it wasn't uncommon to have about fifty students on my participants' list, but less than half were listening. You only know when you call out their names to check their understanding or ask a question; then, you don't get any response. This affected my psyche, as I didn't know for how long I had been talking to myself. Thus, such online delivery in the manner I have described undermines the significance of communication, as facial expression and body language are lost. (Participant 7).*

These findings demonstrate that the COVID-19 crisis engendered serious health and emotional consequences for academics. The competing demands of work and home resulted in an overlap of both domains, particularly in this case, where work spilled over into the home space and fostered work-life conflict, negatively impacting academics' health and emotional well-being. The multiple issues academics encountered, particularly in the wake of COVID-19, are evidenced by negative spillover consequences. As Schnettler et al. (2020) evince, the transfer of negative or positive feelings, attitudes, behaviours or skills within the home and work is associated with the level of permeability and flexibility across borders to allow spillovers. Thus, academics have become more susceptible to adverse health conditions with the

intensified usage of ICTs, which is evidenced as a work stressor and leads to increasing border permeabilities.

Conclusively, this study addresses the experiences of work spillover among academics in the UK and its implications. The research utilises spillover theory in underpinning and discussing the narratives behind academics' perceptions of how work invaded their nonwork domain during the COVID-19 pandemic and how various spillover effects affected their WLB more than they did in the pre-COVID era. A key contribution of this paper is that it contributes to our understanding of the relationship between ICT and work-life spillover in the context of the changes to work conditions resulting from the pandemic.

### **Implications, Limitations and Directions for Future Research**

#### *Theoretical implications*

From the theoretical stance, we suggest a significant relationship between the infiltration of technology (owing to the persistent use of ICTs) and the cohabitation of work and nonwork activities within the domestic space as determinants of negative spillover experiences among academics. In addition, we argue that the increased boundary permeability between work and nonwork domains and overlap of roles favour the transfer of negative rather than positive spillover experiences, which exacerbates negative consequences for the well-being of academics. Grzywacz (2002) suggests that individual control over what passes through these boundaries determines the outcomes experienced. **Thus, from this study, unlike pre-pandemic conditions where working from home increased the level of autonomy and flexibility of individuals (Boell et al., 2016), we understand that pandemic conditions made it more challenging for individuals to control what passes through the boundary due to the loss of autonomy and flexibility over the domains.** This is caused by the infiltration of technology, leading to increased online presence, technostress, work overload, detachment, personality

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disorder and pressures from the overlap between work and nonwork within the same space. The pandemic conditions meant that academics had no choice in deciding when and not to work from home. Conditions that were absent pre-pandemic (e.g., children schooling at home, other family members constantly working from home) appeared to constrict the work-home borders such that they became highly permeable and intensified work-life spillovers. Thus, supporting other studies (e.g., Delanoeije et al., 2019; Cottingham et al., 2020, Adisa et al., 2022), we suggest that boundary control is a critical factor for mitigating work-life conflict and negative spillovers between work-life domains. Having substantive control over the occurrence of cross-boundary factors and the extent of role integration can reduce negative spillover experiences. More importantly, the experience of negative spillovers is likely to constitute the lives of academics as they continue to perceive high levels of vulnerability due to the increased usage of ICTs without commensurate organisational policies to alleviate the dysfunctional interferences between work and nonwork domains.

*Practical implications*

From the practical stance, following the debates on HEIs embracing a hybrid workplace design and the pitfalls that have been identified with the model (Nash and Churchill, 2020; Adisa et al., 2022), we suggest that HEIs must consider the needs of academics to get the best out of them. In this regard, HR managers' involvement is crucial since clear communication with the staff is necessary to allay any concerns they may have about the hybrid working design (Sampat et al., 2022). Therefore, across HEIs, HR managers should consider training and educating managers on how to manage employees utilising the hybrid working model. Assuming that academics know how to behave and would use their initiatives is a mistake. We suggest that HR managers prioritise policies that will help academics manage the pressure from using the hybrid working model. For example, there should be policies on when work starts and ends and guidelines pertaining to sending or responding to emails after work and on the weekend.

Furthermore, there is a need to address the negative outcomes associated with the intensified usage of ICTs among academics. Our findings show that academics face high susceptibility to adverse health conditions, evidenced among individuals with less control over what penetrates the work-nonwork boundaries (Li et al., 2021). As academics, we tend to pass the wrong message to the management that we can do so much working from home, and management may exploit us moving forward as they may find this current structure cheaper. The chances are high for increased hybrid learning, making academics do more and adding to the existing pressure. Management is likely to think there is no excuse for not working online even after the pandemic, as it will be a chance to raise revenue generation. Therefore, we recommend that HR managers take up their role of creating a safe work environment (Roy et al., 2022) by emphasising the value of self-care and having more conversations with academics about their physical and mental health. HR managers should critically consider how to address ICT-related health issues through better work designs and HR initiatives that respond to the health requirements of academics. Essentially, comprehensive work-life policies for academics are necessary for humanising overall organisational well-being.

### *Limitations and future research*

While this study advances our understanding of the work spillover among academics in the UK, certain limitations within our study may provide some directions for future research. First, the sample of academics may not be nationally representative of the entire population in the UK; therefore, further research is recommended to broaden and provide more nuances. Furthermore, despite the evidence that links technology infiltration and permeable boundary issues as fundamental determinants of negative spillovers among academics, future research may also explore how a broad range of ICTs are used, such as the expectations associated with their controlled usage to generate positive or negative outcomes and experiences for their users. The impact of technological intrusion may also be studied to understand its effects on the social

structure of employees and their families. This is deemed necessary because the notion of permeable boundaries may become irrelevant for the next generation, who may not experience life in another way should ICTs persist in blurring the boundaries. Furthermore, based on our study's small coverage, future research may also explore the experiences of academics in other countries (e.g., other parts of Europe and North America) to identify the similarities and differences, as well as developing countries, particularly in regions (e.g., Africa and Asia) that are behind in terms of technology advancement.

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## Appendix A – Interview Protocol

1. We would like to get an overview of your current work role:
  - What is your current rank or position?
  - For how long have you been working as an academic?
  - What are your average working hours daily?
  - Besides teaching, do you have any other primary administrative responsibility? **If yes**, what and how many hours (average) are given to this?
2. We would like to get an overview of your non-work-related responsibilities:
  - Are you married and with children? **If yes**, how many children and dependents do you have?
  - **If not**, how many dependents do you have?
  - What other responsibilities besides family commitments do you engage in?
3. What are the ICTs utilised since working from home?
4. What do you use each of the ICTs for?
5. What are the challenges (if any) that come with the use of ICTs while working from home?
6. Do you think your work affects your non-work life?
7. To what extent does your work intrude into family space and vice versa?
8. To what extent do you think working from home transmits positive or negative feelings, attitudes, emotions or behaviour between work and home?
9. To what extent have you benefited from spousal support in managing your work and family responsibilities?
10. Are there any known organisational family-responsive policies in your organisations, and to what extent are such effective to cater for working from home?
11. What are the implications of these work-life challenges for you as an academic?

**Table I:** Demographic characteristics of participants

Qualitative Research Demographics	
Categories	Tally
<b>Universities in the United Kingdom Region</b>	
England	5
Northern Ireland	2
Scotland	2
Wales	3
<b>Gender</b>	
Male	29
Female	14
<b>Age range</b>	
26 – 35	9
36 – 45	15
46 – 55	13
56 – 65	6
<b>Family status</b>	
Single	3
Married	36
Divorced/Separated	4
<b>Number of dependent children</b>	
1-2	22
3-4	15
Above 4	6
<b>Academic rank</b>	
Teaching fellow	4
Lecturer	9
Senior lecturer	16
Associate professor	9
Full professor	5

**Source:** Authors’ computation

**Table II: Key themes and codes**

Themes	Categorical codes	Frequency of participants' comments per category	Implications	Illustrative quotes
Technostress-induced spillover	<ul style="list-style-type: none"> <li>Several ICTs utilised across universities</li> <li>Information overload, techno-invasion, techno-complexity, techno-uncertainty</li> <li>Prolonged online presence</li> <li>High mental exhaustion</li> <li>Aggressive behaviours (e.g. shouting, swearing)</li> </ul>	43 (100%) 30 (70%) 37 (86%) 28 (65%) 34 (79%)	<ul style="list-style-type: none"> <li>Stress-related spillover</li> <li>Behaviour-based work-life conflict</li> <li>Negative spillover</li> </ul>	Using ICTs during this unprecedented period is worse than ever before. It is so exhausting and leads to feeling so stressed after work that I can hardly do other things (Participant 34).
Work demand and intensification	<ul style="list-style-type: none"> <li>Increased workload</li> <li>Intense work demands</li> <li>Long and unregulated working hours</li> </ul>	43 (100%) 39 (91%) 35 (81%)	<ul style="list-style-type: none"> <li>Time-based work-life conflict</li> <li>Strain-based work-life conflict</li> </ul>	The work pressure has increased...my working time has been unregulated since the pandemic started (Participant 12).
Intrusion of work and nonwork roles	<ul style="list-style-type: none"> <li>Relocation of work into domestic space</li> <li>Intense work-home boundary blurring</li> <li>Depleted resources (physical, emotional, mental)</li> <li>Prioritising work over family</li> </ul>	43 (100%) 38(88%) 35 (81%) 29 (67%)	<ul style="list-style-type: none"> <li>Work-to-family spillover effects</li> <li>Family-to-work spillover effects</li> </ul>	There is no distinction between work and home because of the competing demands from both areas...they both affect each other (Participant 10).
Gender role strain and spousal support	<ul style="list-style-type: none"> <li>Gender norms and gender role socialisation</li> </ul>	26(61%) 31 (72%)	<ul style="list-style-type: none"> <li>Role strain</li> <li>Higher negative spillovers for women</li> </ul>	In my culture, the woman carries the home, and they feel the stress more...that may bring about tension (Participant 31).

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	<ul style="list-style-type: none"><li>• Back-to-back shifts of work-home obligations</li><li>• Inadequacy of familial and spousal support</li></ul>	13 (30%)		
Health and emotional challenges	<ul style="list-style-type: none"><li>• Underlying health issues</li><li>• Emotional instability and disorders</li></ul>	33 (77%) 21 (49%)	<ul style="list-style-type: none"><li>• Strain-based work-life conflict</li><li>• Negative spillover effects</li></ul>	My health is negatively impacted, and sleeplessness has become my norm since working from home...I think I may be facing emotional trauma, I am distressed (Participant 18)

**Source:** Authors' computation

Personnel Review