Psychology Participant Pools (PPP) are known to be used within psychology departments in the United Kingdom as a way to promote understanding of psychological research and as a means to aid students and researchers to collect data. However, there is currently no information regarding the different practices undertaken in each department. This article represents a first exploration in this endeavour by asking representatives from these departments to complete a survey. General findings revealed that the number of studies conducted were either under 20 or over 40, Level 5 students had to obtain more credits than Level 4 students, a range of activities were observed for those participants who did not obtain all their credits, and the PPP was more often than not tied to a research methods module. Despite receiving responses from around only a third of departments, the results revealed a wide range of behaviours across the departments. We feel that these are useful for departments who wish to establish, or update, their own PPP, but also recognise that a larger study is required to more accurately capture the use of PPPs in the United Kingdom.

(187 words)

Research forms the bedrock from which springs all scientific knowledge and this is nowhere more evident than in the study of human behaviour, psychology. What often sets psychological research apart from the other scientific disciplines is its subject matter: human beings comprise the majority of the participants in psychology studies. With the emphasis on research skills in the QAA benchmark statement, and the importance of research in the work of universities, especially in terms of the Research Excellence Framework and now the Teaching Excellence Framework, there is a need to not only support students in developing appropriate research skills but also a need to make sure that they have access to potential participants in order to be able to develop said skills. Therefore, for research skills training there is a need to have available pools of possible participants and this paper is a first attempt at exploring how this is operationalised in psychology departments in the United Kingdom.

One means of ensuring appropriate numbers of participants is the use of a Psychology Participant Pool (PPP). These are common in psychology but similar pools can also be found in sociology departments as well (Chin & Stayte, 2015). PPPs involve undergraduates (usually first and second years) being required to participate in a number of studies offered to them, and receiving some form of credit for doing so. Most often, this results in students being able to pass an assessment or a module. There has been debate regarding the efficacy of such pools (McCord, 1991) but many students tend to report it as a positive experience, especially if they are informed why it is important (Nimmer & Handelsman, 1992) and when they learned about psychology and the process of conducting research (Darling, Goedert, Ceynar, Shore, & Anderson, 2007).

Passing an assessment or module are not the only benefits that students obtain for this participation. Firstly, although psychology degree programmes expose their students to a wide range of studies from a number of psychological areas – for example, cognitive, social, health, and developmental – these are dwarfed by the volume of studies that are published. The PPP

provides an additional opportunity to learn about other studies that may not have been discussed in more traditional teaching formats such as lectures, workshops, and seminars. Generally, this can be done via the debriefing after the study although one must ensure that the debriefing is clear and sufficient information is imparted to the participants (Brody, Gluck, & Aragon, 2000). Secondly, given the requirement for a research project/dissertation to be undertaken and passed for successful honours degrees, the PPP acts as a vital recruitment tool for many undergraduate projects. Although not all projects may require the involvement of undergraduate psychology students as participants (for example, some may involve children, parents, or hospital patients), many do. Thirdly, and possibly most importantly, is the experience of research.

Speaking with academics from other psychology departments in the United Kingdom about their PPP reveals a lot of variability in how they are implemented. Some only include Level 5 students as participants, some do not allow students to use the PPP for recruiting participants unless they have first been a participant in it, and some use it to fail a module if the set number of credits are not achieved.

At our institution, Level 4 and 5 students are members of the PPP. In Level 4, through the Research Methods module, students are encouraged to participate in psychology studies. At Level 5, it is tied to the Research and Statistics module, and students must complete the required number of credits or write a 1500-word essay on the importance of research ethics as partial completion of the module. When they are in Level 6, if they need to use the PPP to recruit participants then they can do so whether or not they obtained credits in Levels 4 or 5.

Despite the varied anecdotal responses from psychology colleagues there is little published data concerning how the PPPs are implemented in the United Kingdom. British Psychological Society accreditation requirements emphasise the importance of research

methods training and working ethically, and state that "[k]nowledge and understanding of how to obtain and analyse evidence is best acquired and demonstrated through extensive and progressive empirical work in laboratory and naturalistic settings through all stages of a degree" (British Psychological Society, 2016a, p.8). However, how that knowledge and understanding is engendered is not prescribed. The 'Guidance on teaching and assessment of ethical competence in psychology education' and 'Code of Human Research Ethics' are not that prescriptive either (British Psychological Society, 2015, 2016b). They posit that although participation in psychological studies is not required for Society accreditation of a psychology degree programme, the programmes need to make students familiar with the appropriate techniques and analyses that are necessary in carrying out successful research at this level. However, students should not be coerced into taking part and if problems do arise then alternatives should be given. Such participation in psychology studies avails students with experience of methodology and ethical considerations.

The purpose of this survey was an exploratory audit to understand how psychology departments implemented their PPP (if they had one). We sent a Qualtrics survey to all psychology departments in the United Kingdom and were interested in which ones used the pool as researchers and participants, how many credits were obtained, how it was integrated into the degree programme, the penalty for not obtaining the set credits, and whether data generated from these studies were used in research output publications.

Method

Participants

All one hundred and thirty two psychology departments in the United Kingdom were contacted via email and asked to pass on the link of the Qualtrics survey to the Programme Director or whomever was responsible for the Psychology Participant Pool. Thirty seven representatives

of psychology departments logged onto the survey and there were varying numbers of respondents who completed the questions in the survey ranging from 20-36. Results below report the number of respondents for each question.

Materials

Qualtrics was used to create and distribute the survey. It is a web-based survey tool that can be used to conduct surveys and collect and analyse data. The survey asked questions about which departments used the pool, the numbers of both researchers and participants using the pool to recruit participants, how many credits were obtained, how it was integrated into the degree programme, the penalty for not obtaining the set credits, and how data generated from these studies were used in actual publications.

Results

Thirty seven departmental representatives responded and all were from British Psychological Society (BPS) accredited degree programmes. However, the number of responses for individual questions varied and is indicated in each case.

As one might expect due to retention, the mean number of undergraduate students for each year decreased from years one to three – 1st year (199.58, standard deviation 86.39), 2nd year (181.11, 80.7), third year (172, 78.87), additional year (Scotland, N=4; 130, 81.24) – but in general the number was between 160 and 200 students. In a majority of cases the number of studies advertised through the PPP within one academic year suggested a bimodal distribution as they fell into either the 41-60 category or fewer than 20, see Table 1.

INSERT TABLE 1 HERE

Of those departments who used a PPP, most of the researchers were from the undergraduate population (63.22, standard deviation 26.35), followed by postgraduate students (35.28, 28.47), followed by postdoctoral students (31.44, 34.34), and the least were from members of academic staff (24.74, 22.33).

Respondents reported that most participants in the PPP were from years 1 and 2 but that some were also from the final year and even Masters' students. For those undergraduates students that participated in studies, the mean number of hours required was greater for first and second year students and much less for third year students (Figure 1.). Interestingly, despite the similarity between first and second year mean hours required, more first year than second year students failed to obtain them – 21.33% versus 11.97%. In the final year, fifty-four percent of those students used the PPP to collect their final year project data suggesting that it was a key mechanism to obtain participants. One can make a reasonable assumption that a large proportion of the other forty six percent obtained their data using participants outside of the psychology undergraduate student population.

INSERT FIGURE 1 HERE

Eighteen out of 26 departments reported that the PPP was tied a specific module or number of modules. These were mainly to do with research methods with a minority related to other, unspecified appropriate modules.

On some undergraduate courses there were benefits for those students who obtained all of their credits. For example, they were allowed access to the PPP in their final year so that they could collect data, they were able to pass assessments in the module it was tied to, they had additional percentage marks added to their coursework grade, or had the grade for the module it was tied to weighted according to the proportion of required credits they had obtained. In contrast, those students who were unable to obtain all of their credits sometimes were sometimes denied access to the PPP in their final year, failed the module, received no extra marks in the module it was tied to, had missing credits get added to next year's requirement (i.e. Level 4 to Level 5), or had a percentage deducted from the module per hour not obtained.

Not attending a study could result in the student losing access to the PPP if they missed too many (undefined) studies, requiring them to obtain an additional 30 minutes' participation time, having extra credits added to their required total (e.g. fixed amount, 0.5 credits per experimental hour, or sometimes the number of credits they missed), or meeting with their tutor if too many consecutive studies were missed.

In 19 out of 26 respondents, there was an alternative assessment if a student did not wish to participate in studies or did not obtain all of their required credits. These were writing an essay (e.g. on ethics or research and statistics, or it was reflective), writing a summary of articles, writing a five hundred-word review of a recent research paper, writing a critical review of a journal article, receiving credits for discussing with researchers to learn about research methods, and deferring coursework over the summer period.

Eighteen publications from 2015 (7 respondents) used data that were collected from the PPP. This was 24.33 percent (6 respondents) of 2015 publications. These publications tended to come from cognitive and social psychology.

Respondents felt that there were many benefits for being a participant in these studies such as gaining knowledge and experience about designing studies, access to PPP in the final year, learning what it is like to be a participant, exposure to a wide range of studies, experience of ethical practice and informed consent, and learning about researcher etiquette.

Discussion

The purpose of this study was as a first attempt to understand how Psychology Participant Pools (PPP) were implemented within psychology undergraduate programmes in the United Kingdom.

Results showed that there was a wide range (0-20 to 200+) of studies conducted across the departments. For most departments, the number of studies conducted were under 20 or between 20 and 40. This is likely to reflect the number of students in each department although these numbers may include a number of other instances. For example, we know that studies were conducted by other researchers such as postgraduate/post-doctoral students, and academic staff members, and it may be that final year students conduct more than one study or that some students recruit their participants from sources outside the PPP. Over half of final year undergraduate students used the PPP as their primary means of collecting their data.

As might be expected, most participants tended to be from Levels 4 and 5 although the mean number of hours was slightly more in Level 4. In slight contrast, more Level 4 students failed to obtain their required credits, which may be due to the fact that Level 4 generally does not count towards the final degree calculation in most universities. Another possibility is that the potential benefits for participating in psychology studies are not emphasised especially in

Level 4 where students are still finding their way around their department and degree programme. Given the obvious link to research methods, greater emphasis in these modules would seem appropriate. Further, it may be that reflection on engagement in psychology studies may reinforce the positive elements of participation and this could form the basis of an assessment within either Research Methods modules, or other appropriate modules.

Given that the PPP involves participating in research studies it was no surprise to see that where the PPP was tied to a particular module, these tended to be those delivering research methods or statistics. In these situations, successful completion of the PPP resulted in the successful completion of one (or all) components of that module or, in some instances, their coursework mark was increased. However, failure to complete the required credits not only resulted in failing part or all of the attached module but it quite often meant that those students were unable to have access to the PPP to help recruit participants for their study in the final year. This did not mean that they could not recruit participants but that, if they were going to involve undergraduate psychology students, they would have to persuade them to participate.

On some occasions, participants failed to attend their study or chose not to participate. In the case of the former, many departments penalised the students by increasing the total number of credits they needed to obtain. This brings us to an important issue in the management of the PPP. So that there are always studies, and thus credits, available, one must ensure that the number of credits available exceeds the number of credits required. In larger departments where there are studies being conducted throughout most of the year by researchers other than final year undergraduate students, then this is unlikely to be an issue. However, in smaller departments, there is the danger of there not being enough credits/studies available when a participant needs to obtain their credits before their deadline elapses. In these situations, one must consider possibly creating a new study with available credits for participants to participate

in or maybe allowing all participants to pass this component (obtaining credits) of the module when they actually have not.

Where participants chose not to participate, as is their right for whatever reason they may have (e.g. they may feel uncomfortable with the topic under study or just not feel like taking part), studies/credits need to be available if the participant is going to obtain all their credits. In those situations where a participant does not want to obtain all of their credits, where it is tied to a module assessment, then an alternative assessment (e.g. an essay but see Results section for full list of alternative assessments) to the PPP credits needs to be offered. Nineteen out of twenty six departments did this.

A benefit for the postgraduate/post-doctoral and academic staff within psychology departments was that some of the data collected via the PPP could be used for publication purposes (e.g. Carr & Mercer, 2017; Evered, Walker, Watt, & Perham, 2013; Perham & Macpherson, 2012). Although we have no data on this, we suspect that this is more likely to occur in departments that are less able to receive internal or external funding. Eighteen publications were reported by six of our respondents as having been based on data collected through the PPP which was around 24% of their 2015 publications. Although this may be a small sample, it does show the importance of the PPP for publication purposes to some departments.

Before conducting any research, researchers must obtain ethical approval from their department or university's ethics panel to ensure that both participants and researchers are as safe as possible from potential harm. However, ethical issues also arise within the logistics of the PPP itself. Participants are able to withdraw their participation if they do not feel comfortable with the study at any point throughout its duration. Although they may not know the details of the study when they arrive (it is typical for participants to sign up on the basis of

the length of the study or number of credits required), participants may decide not to consent to the study at its outset.

Related to the above issue is whether participants are able to make a free choice in taking part in these studies or whether they are being coerced. Most of the respondents to the survey reported that the PPP was an assessment attached to a module, usually one regarding research methods. In this situation the question of whether a student should partake in an assessment is a moot point as assessments are required for successful completion of the psychology degree. All students are made aware of the assessment guidelines and are informed that they need to obtain a certain number of credits or complete an alternative assessment such as an essay. Further, all participants are informed that they do not have to take part in any study they have signed up or are actually participating – their right to withdraw at any point is guaranteed without risk of penalisation. However, one might envisage a situation whereby a student needs to obtain, for example, two more credits and there is only one study available but they do not fit the inclusion criteria for it. Unfortunately in this situation the student would not obtain all the required credits and have to perform an alternative assessment such as an essay. Departments in which there is a shortage of studies available are more likely to experience this situation but it is very unlikely to occur in departments where studies are conducted by undergraduates, postgraduates, post-doctoral students, and academic members of staff. The onus is on the PPP administrator to ensure that there are more credits in the system than are needed. So the issue of free choice only really arises if students are told to participate when it is not part of the degree programme. Our dataset showed no evidence of this.

Inasmuch as the credits are part of the assessment for those Level 4 or 5 students requiring them, they also can contribute to a final year project if the researcher is a final year student. In this situation it could be argued that this is unethical as students' work should be their own. However, there are some points that go against this. Firstly, other assessments often

require more than one student to produce the work and these include group reports, posters and presentations. In these instances there can be a group mark awarded as well as individual contribution as rated by the students and/or academic members of staff. Secondly, the data itself is a small component of the Project (mainly related to the Results and Discussion). Further, the data are not graded as they are neither correct nor incorrect: their only role is for the researcher to conduct analyses and make valid inferences from them.

At our institution the PPP is organised online through Sonasystems. It is a cloud-based research and management system that allows researchers to advertise their studies, participants to sign up to these studies, informs participants/researchers of upcoming participation (if necessary), and tallies participation and non-participation for individual students and studies. A quick search online reveals many other departments use this and similar systems. More recently, crowdsourcing has been used as a way to recruit large numbers of participants for web-based studies (Heilman & Smith, 2010; Sharek, 2010). Interestingly, Behrend, Sharek, Meade, and Wiebe (2011) found that participants in crowdsourcing studies differed from traditional PPPs by generally being older, having a wider range of ethnicity, and more work experience and this has also been echoed in Amazon's Mechnical Turk website (Buhrmester, Kwang, & Gosling, 2011).

This survey has a number of weaknesses that could easily be improved upon. Firstly, only thirty seven of hundred and thirty two departments responded. Further, not all thirty seven respondents answered all of the questions. Closer to a one hundred percent response rate would provide a much more accurate picture.

In summary, this small, exploratory survey revealed that PPPs are valued very highly by psychology departments as a means of teaching students about psychology content and

research, as a mechanism for researchers (mainly final year undergraduate students), and as a

possible resource for the publication of research materials.

References

Behrend, T.S., Sharek, D.J., Meade, A.W., & Wiebe, E.N. (2011). The viability of crowdsourcing for survey research. *Behavior Research Methods, 43*(3), 800-813.

British Psychological Society (2015). *Guidance on teaching and assessment of ethical competence in psychology education.* Leicester: Author.

British Psychological Society (2016a). *Subject benchmark statement: Psychology.* Leicester: Author.

British Psychological Society (2016b). *Standards for the accreditation of undergraduate, conversion and integrated Masters programmes in psychology.* Leicester: Author.

Brody, J.L., Gluck, J.P., & Aragon, A.S. (2000). Participant's understanding of the process of psychological research: Debriefing. *Ethics & Behavior, 10*(1), 13-25.

Buhrmester, M., Kwang, T., & Gosling, S.D. (2011). Amazon's Mechanial Turk: A new source of inexpensive, yet high-quality data? *Perspectives on Psychological Science, 6*(1), 3-5.

Carr, D.J. & Mercer, J. (2017). Young people's experiences of fashion modelling: An exploratory phenomenological study. *International Journal of Fashion Studies, 4,* 51-68.

Chin, L.G. & Stayte, P.G. (2015). Can human subject pool participation benefit sociology students? *Teaching Sociology, 43*(1), 27-38.

Darling, J., Goedert, K., Ceynar, M., Shore, W., Anderson, D. (2007). Learning about the means to the end: what US Introductory Psychology students report about experimental participation. Psychology Learning and Teaching, 6(2), 91-97.

Evered, A., Walker, D., Watt, A., & Perham, N. (2013). To what extent does non-analytical reasoning contribute to visual learning in cytopathology? *Cancer Cytopathology, 121*(6), 329-338. DOI: 10.1002/cncy.21263

Heilman, M. & Smith, N. A. (2010). *Rating computer-generated questions with Mechanical Turk.* Paper presented at the NAACL Workshop on Creating Speech and Language Data With Amazon's Mechanical Turk, Los Angeles, CA.

McCord, D.M. (1991). Ethics-sensitive management of the university human subject pool. *American Psychologist, 46*, 151.

Nimmer, J.G. & Handelsman, M.M. (1992). Effects of subject pool policy on student attitudes toward psychology and psychological research. *Teaching of Psychology, 19*, 141-144.

Perham, N. & Macpherson, S. (2012). Mental arithmetic and irrelevant auditory number similarity disruption. *Irish Journal of Psychology, 33*(4), 181-192. DOI:10.1080/03033910.2012.723194

Sharek, D. (2010). *The influence of flow in the measure of engagement. Unpublished Master's thesis*. Retrieved from http://www.lib.ncsu.edu/theses/available/etd-02182010-132225/